As filed with the Securities and Exchange Commission on March 12, 2021

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

Form 20-F

☐ REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934

or

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE FISCAL YEAR ENDED DECEMBER 31, 2020

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

or

☐ SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Date of event requiring this shell company report……………………………….

Commission file number 1-15242

Deutsche Bank Aktiengesellschaft

(Exact name of Registrant as specified in its charter)

Deutsche Bank Corporation

(Translation of Registrant’s name into English)

Federal Republic of Germany

(Jurisdiction of incorporation or organization)

Taunusanlage 12, 60325 Frankfurt am Main, Germany

(Address of principal executive offices)

Brigitte Bomm, +49-69-910-33996, brigitte.bomm@db.com, Taunusanlage 12, 60325 Frankfurt am Main, Germany

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act
See following page

Securities registered or to be registered pursuant to Section 12(g) of the Act.

NONE

(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.

NONE

(Title of Class)

Indicate the number of outstanding shares of each of the issuer’s classes of capital or common stock as of the close of the period covered by the annual report:

Ordinary Shares, no par value	2,065,426,965

(as of December 31, 2020)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☐ No ☒

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of "large accelerated filer", "accelerated filer", and emerging growth company in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐
Non-accelerated filer ☐ Emerging growth company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards* provided pursuant to Section 13(a) of the Exchange Act. ☐

*The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☐ International Financial Reporting Standards as issued by the International Accounting Standards Board ☒ Other ☐

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow

Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ No ☒

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court.

Yes ☐ No ☐

Securities registered or to be registered pursuant to Section 12(b) of the Act (as of February 28, 2021)

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Ordinary shares, no par value	DB	New York Stock Exchange
Fixed to Fixed Reset Rate Subordinated Tier 2 Notes Due 2028	DB /28	New York Stock Exchange
4.50% Fixed Rate Subordinated Tier 2 Notes Due 2025	DB 25	New York Stock Exchange
DB Gold Double Long Exchange Traded Notes due February 15, 2038	DGP	NYSE Arca
DB Gold Double Short Exchange Traded Notes due February 15, 2038	DZZ	NYSE Arca
DB Gold Short Exchange Traded Notes due February 15, 2038	DGZ	NYSE Arca

Table of Contents

PART I – 9
Item 1: Identity of Directors, Senior Management and Advisers – 9
Item 2: Offer Statistics and Expected Timetable – 9
Item 3: Key Information – 9
Selected Financial Data – 9
Dividends – 12
Capitalization and Indebtedness – 13
Reasons for the Offer and Use of Proceeds – 13
Risk Factors – 14
Item 4: Information on the Company – 52
History and Development of the Company – 52
Business Overview – 52
The Competitive Environment – 60
Regulation and Supervision – 66
Organizational Structure – 84
Property and Equipment – 84
Information Required by Industry Guide 3 – 84
Item 4A: Unresolved Staff Comments – 85
Item 5: Operating and Financial Review and Prospects – 85
Overview – 85
Significant Accounting Policies and Critical Accounting Estimates – 85
Recently Adopted Accounting Pronouncements and New Accounting Pronouncements – 86
Operating Results – 86
Results of Operations – 87
Financial Position – 87
Liquidity and Capital Resources – 87
Post-Employment Benefit Plans – 88
Off-Balance Sheet Arrangements – 88
Tabular Disclosure of Contractual Obligations – 88
Research and Development, Patents and Licenses – 88
Item 6: Directors, Senior Management and Employees – 88
Directors and Senior Management – 88
Board Practices of the Management Board – 91
Compensation – 92
Employees – 92
Share Ownership – 92
Item 7: Major Shareholders and Related Party Transactions – 93
Major Shareholders – 93
Related Party Transactions – 94
Interests of Experts and Counsel – 94
Item 8: Financial Information – 95
Consolidated Statements and Other Financial Information – 95
Significant Changes – 98
Item 9: The Offer and Listing – 99
Offer and Listing Details and Markets – 99
Plan of Distribution – 99
Selling Shareholders – 99
Dilution – 99
Expenses of the Issue – 99
Item 10: Additional Information – 100
Share Capital – 100
Memorandum and Articles of Association – 100
Notification Requirements – 103
Material Contracts – 106
Exchange Controls – 107
Taxation – 107
Dividends and Paying Agents – 110
Statement by Experts – 110
Documents on Display – 110
Subsidiary Information – 110

Item 11: Quantitative and Qualitative Disclosures about Credit, Market and Other Risk – 111
Item 12: Description of Securities other than Equity Securities – 111
PART II – 112
Item 13: Defaults, Dividend Arrearages and Delinquencies – 112
Item 14: Material Modifications to the Rights of Security Holders and Use of Proceeds – 112
Item 15: Controls and Procedures – 112
Disclosure Controls and Procedures – 112
Management's Annual Report on Internal Control over Financial Reporting – 112
Report of Independent Registered Public Accounting Firm – 113
Change in Internal Control over Financial Reporting – 114
Item 16A: Audit Committee Financial Expert – 114
Item 16B: Code of Ethics – 114
Item 16C: Principal accountant fees and services – 114
Item 16D: Exemptions from the Listing Standards for Audit Committees – 114
Item 16E: Purchases of Equity Securities by the Issuer and Affiliated Purchasers – 115
Item 16F: Change in Registrant's Certifying Accountant – 116
Item 16G: Corporate Governance – 116
Item 16H: Mine Safety Disclosure – 119
Disclosures Under Iran Threat Reduction and Syria Human Rights Act of 2012 – 119
PART III – 121
Item 17: Financial Statements – 121
Item 18: Financial Statements – 121
Item 19: Exhibits – 121
Signatures – 122
Annual Report – 1
Supplemental Financial Information (Unaudited) – S-1

Deutsche Bank Aktiengesellschaft, which we also call Deutsche Bank AG, is a stock corporation organized under the laws of the Federal Republic of Germany. Unless otherwise specified or required by the context, in this document, references to “we”, “us”, “our”, “the Group”, “Deutsche Bank” and “Deutsche Bank Group” are to Deutsche Bank Aktiengesellschaft and its consolidated subsidiaries.

Due to rounding, numbers presented throughout this document may not add up precisely to the totals we provide and percentages may not precisely reflect the absolute figures.

Our registered address is Taunusanlage 12, 60325 Frankfurt am Main, Germany, and our telephone number is +49-69-910-00.

Inclusion of Our Annual Report

We have included as an integral part of this Annual Report on Form 20-F our Annual Report 2020, to which we refer for the responses to certain items hereof. Certain portions of the Annual Report 2020 have been omitted, as indicated therein. The included Annual Report 2020 contains our Consolidated Financial Statements, which we also incorporate by reference into this report, in response to Items 8.A and 18.

The Annual Report 2020 and Consolidated Financial Statements included herein differ from those we publish for other purposes (the “non-SEC” versions thereof) in that the financial information presented in the Annual Report 2020 and Consolidated Financial Statements included herein has been prepared in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”). The financial information presented in the non-SEC Annual Report and Consolidated Financial Statements, by contrast, has been prepared in accordance with IFRS as issued by the IASB and endorsed by the European Union (EU), including, effective as of January 1, 2020, the application of fair value hedge accounting for portfolio hedges of interest rate risk (fair value macro hedges) in accordance with the EU carve-out version of IAS 39. The application of the EU carve-out version of IAS 39 had a positive impact of € 18 million on net revenues and profit before tax and of € 12 million on profit after tax. The impact on profit after tax also postitively impacts the calculation of equity on the balance sheet by € 12 million. Effective as of January 1, 2020, the Group’s regulatory capital and ratios thereof are also reported on the basis of applying the EU carve-out version of IAS 39, in both the non-SEC Annual Report 2020 and Consolidated Financial Statements and the versions thereof included herein. This impacts the calculation of CET 1 capital, Tier 1 capital, Total capital and ratios based thereon, including the Leverage ratio, as the amount of profit after tax impacts the equity balance. As of December 31, 2020, this had a positive impact of less than 1 basis point on the CET 1 capital ratio. For further information, see Note 1, “Significant accounting policies and critical accounting estimates – Basis of accounting – EU carve-out” to the Consolidated Financial Statements.

The Consolidated Financial Statements included herein also differ from those contained in the non-SEC Annual Report 2020 in that (i) Notes 42, 43 and 44 of the non-SEC Consolidated Financial Statements, which address non-U.S. requirements, have been deleted, (ii) Note 45 of the non-SEC Consolidated Financial Statements is set forth as Note 42 of the Consolidated Financial Statements included herein and (iii) Note 43, which addresses U.S. requirements, has been added to the Consolidated Financial Statements included herein.

The Consolidated Financial Statements as of and for the year ended December 31, 2020 included herein have been audited by Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, as described in their “Report of Independent Registered Public Accounting Firm” included in the Annual Report 2020.

The Consolidated Financial Statements as of and for the years ended December 31, 2019 and 2018 included herein have been audited by KPMG AG Wirtschaftsprüfungsgesellschaft, as described in their “Report of Independent Registered Public Accounting Firm” included in the Annual Report 2020.

Such reports are included only in the version of the Annual Report 2020 included in this Annual Report on Form 20-F.

Cautionary Statement Regarding Forward-Looking Statements

We make certain forward-looking statements in this document with respect to our financial condition and results of operations. In this document, forward-looking statements include, among others, statements relating to:

– the potential development and impact on us of economic and business conditions and the legal and regulatory environment to which we are subject, including as a result of the COVID-19 pandemic;
– the implementation of our strategic initiatives and other responses thereto;
– the development of aspects of our results of operations;
– our expectations of the impact of risks that affect our business, including the risks of losses on our trading processes and credit exposures; and
– other statements relating to our future business development and economic performance.

In addition, we may from time to time make forward-looking statements in our periodic reports to the United States Securities and Exchange Commission on Form 6-K, annual and interim reports, invitations to Annual General Meetings and other information sent to shareholders, offering circulars and prospectuses, press releases and other written materials. Our Management Board, Supervisory Board, officers and employees may also make oral forward-looking statements to third parties, including financial analysts.

Forward-looking statements are statements that are not historical facts, including statements about our beliefs and expectations. We use words such as “believe”, “anticipate”, “expect”, “intend”, “seek”, “estimate”, “project”, “should”, “potential”, “reasonably possible”, “plan”, “aim” and similar expressions to identify forward-looking statements.

By their very nature, forward-looking statements involve risks and uncertainties, both general and specific. We base these statements on our current plans, estimates, projections and expectations. You should therefore not place too much reliance on them. Our forward-looking statements speak only as of the date we make them, and we undertake no obligation to update any of them in light of new information or future events.

We caution you that a number of important factors could cause our actual results to differ materially from those we describe in any forward-looking statement. These factors include, among others, the following:

– the potential development and impact on us of economic and business conditions, including as a result of the COVID-19 pandemic;
– other changes in general economic and business conditions;
– changes and volatility in currency exchange rates, interest rates and asset prices;
– changes in governmental policy and regulation, including measures taken in response to economic, business, political and social conditions;
– the potential development and impact on us of legal and regulatory proceedings to which we are or may become subject;
– changes in our competitive environment;
– the success of our acquisitions, divestitures, mergers and strategic alliances;
– our success in implementing our strategic initiatives and other responses to economic and business conditions and the legal and regulatory environment and realizing the benefits anticipated therefrom; and
– other factors, including those we refer to in “Item 3: Key Information – Risk Factors” and elsewhere in this document and others to which we do not refer.

Use of Non-GAAP Financial Measures

This document and other documents we have published or may publish contain non-GAAP financial measures. Non-GAAP financial measures are measures of our historical or future performance, financial position or cash flows that contain adjustments that exclude or include amounts that are included or excluded, as the case may be, from the most directly comparable measure calculated and presented in accordance with IFRS in our financial statements. Examples of our non-GAAP financial measures, and the most directly comparable IFRS financial measures, are as follows:

Non-GAAP Financial Measure	Most Directly Comparable IFRS Financial Measure
Profit (loss) attributable to Deutsche Bank shareholders, Profit (loss) attributable to Deutsche Bank shareholders after AT1 coupon, Adjusted profit (loss) before tax	Profit (loss) before tax
Revenues excluding specific items	Net revenues
Adjusted costs, Adjusted costs excluding transformation charges, Adjusted costs excluding transformation charges and expenses eligible for reimbursement related to Prime Finance	Noninterest expenses
Tangible shareholders' equity, Average tangible shareholders' equity, Tangible book value, Average tangible book value	Total shareholders' equity (book value)
Post-tax return on average tangible shareholders' equity, Post-tax return on average shareholders' equity (based on Net income attributable to Deutsche bank shareholders)	Post-tax return on average shareholders' equity
Tangible book value per basic share outstanding, Book value per basic share outstanding	Book value per share outstanding
Net assets	Total assets

For descriptions of these non-GAAP financial measures and the adjustments made to the most directly comparable financial measures under IFRS, please refer to "Supplementary Information (Unaudited): Non-GAAP Financial Measures", which is incorporated by reference herein.

When used with respect to future periods, our non-GAAP financial measures are also forward-looking statements. We cannot predict or quantify the levels of the most directly comparable financial measures under IFRS that would correspond to these measures for future periods. This is because neither the magnitude of such IFRS financial measures, nor the magnitude of the adjustments to be used to calculate the related non-GAAP financial measures from such IFRS financial measures, can be predicted. Such adjustments, if any, will relate to specific, currently unknown, events and in most cases can be positive or negative, so that it is not possible to predict whether, for a future period, the non-GAAP financial measure will be greater than or less than the related IFRS financial measure.

Regulatory fully loaded measures

Our regulatory assets, exposures, risk-weighted assets, capital and ratios thereof are calculated for regulatory purposes and set forth throughout this document under the regulation on prudential requirements for credit institutions and investment firms ("CRR") and the Capital Requirements Directive ("CRD"), including recent amendments, which implement Basel 3. Unless otherwise noted, our CRR/CRD solvency measures set forth in this document are calculated under the CRR/CRD as currently applicable. We present in this report certain figures based on the CRR definition of own fund instruments applicable for Additional Tier 1 (AT1) capital and Tier 2 (T2) capital and figures based thereon, including Tier 1, Total Capital and the Leverage Ratio, on a "fully loaded" basis. We calculate such "fully loaded" figures excluding the transitional (or "phase-in") arrangements for own fund instruments as provided in the currently applicable CRR/CRD. For CET 1 instruments we do not make use of transitional provisions. Measures calculated pursuant to our fully loaded methodology are non-GAAP financial measures.

We believe that these "fully loaded" calculations provide useful information to investors as they reflect our progress against the regulatory capital standards and as many of our competitors have been describing calculations on a "fully loaded" basis. As our competitors' assumptions and estimates regarding "fully loaded" calculations may vary, however, our "fully loaded" measures may not be comparable with similarly labelled measures used by our competitors.

For descriptions of these fully loaded CRR/CRD measures and the differences from the most directly comparable measures under the CRR/CRD transitional rules, please refer to the following sections of the Annual Report 2020, each of which is incorporated by reference herein: (i) “Management Report: Risk Report: Risk and Capital Performance: Capital, Leverage Ratio and MREL”, in particular the subsections thereof entitled “Development of Own Funds”, “Development of Risk-Weighted Assets” and “Leverage Ratio”, and (ii) “Supplementary Information (Unaudited): Non-GAAP Financial Measures: Regulatory fully loaded measures”.

When used with respect to future periods, our fully loaded CRR/CRD measures are also forward-looking statements. We cannot predict or quantify the levels of the most directly comparable transitional CRR/CRD measures that would correspond to these fully loaded CRR/CRD measures for future periods. We manage our business with the aim of achieving targets based on fully loaded CRR/CRD measures. Accordingly, the relation between the fully loaded and transitional measures may be variable and will depend upon, among other things, management action taken in light of future business, economic and other conditions.

Use of Internet Addresses

This document contains inactive textual addresses of Internet websites operated by us and third parties. Reference to such websites is made for informational purposes only, and information found at such websites is not incorporated by reference into this document.

PART I

Item 1: Identity of Directors, Senior Management and Advisers

Not required because this document is filed as an annual report.

Item 2: Offer Statistics and Expected Timetable

Not required because this document is filed as an annual report.

Item 3: Key Information

Selected Financial Data

We have derived the data we present in the tables below from our audited consolidated financial statements for the years presented. You should read all of the data in the tables below together with the consolidated financial statements and notes included in “Item 18: Financial Statements” and the information we provide in “Item 5: Operating and Financial Review and Prospects.” Except where we have indicated otherwise, we have prepared the consolidated financial information for 2019, 2018, 2017 and 2016 in this document in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”) and as endorsed by the European Union (“EU”). For 2020, consolidated financial information was prepared in accordance with IFRS as issued by the IASB only. Our corporate division and segment data comes from our management reporting systems and is not in all cases prepared in accordance with IFRS. For a discussion of the major differences between our management reporting systems and our consolidated financial statements under IFRS, see Note 4 “Business Segments and Related Information” to the consolidated financial statements.

Income Statement Data

in € m.	2020	2019	2018	2017	2016
Net interest income	**11,548**	13,749	13,316	12,378	14,707
Provision for credit losses	1,792	723	525	525	1,383
Net interest income after provision for credit losses	**9,756**	13,026	12,791	11,853	13,324
Commissions and fee income	9,424	9,520	10,039	11,002	11,744
Net gains (losses) on financial assets/liabilities at fair value through profit or loss	2,332	193	1,209	2,926	1,401
Other noninterest income (loss)	707	(298)	753	142	2,161
Total net revenues	**24,011**	23,165	25,316	26,447	30,014
Compensation and benefits	10,471	11,142	11,814	12,253	11,874
General and administrative expenses	10,259	12,253	11,286	11,973	15,454
Policyholder benefits and claims	0	0	0	0	374
Impairment of goodwill and other intangible assets	0	1,037	0	21	1,256
Restructuring activities	485	644	360	447	484
Total noninterest expenses	**21,216**	25,076	23,461	24,695	29,442
Income (loss) before income taxes	**1,003**	(2,634)	1,330	1,228	(810)
Income tax expense	391	2,630	989	1,963	546
Net income (loss)	**612**	(5,265)	341	(735)	(1,356)
Net income attributable to noncontrolling interests	129	125	75	15	45
Net income (loss) attributable to Deutsche Bank shareholders and additional equity components	483	(5,390)	267	(751)	(1,402)

in € (unless stated otherwise)					
Basic earnings per share[1,2]	0.06	(2.71)	(0.01)	(0.53)	(1.08)
Diluted earnings per share[1,3]	0.06	(2.71)	(0.01)	(0.53)	(1.08)
Dividends paid per share[4]	0.00	0.11	0.11	0.19[6]	0.00
Dividends paid per share in U.S.$[5]	0.00	0.13	0.13	0.21	0.00

1 The number of average basic shares outstanding has been adjusted for all periods before April 2017 in order to reflect the effect of the bonus element of the subscription rights issue in connection with the capital increase in April 2017.
2 We calculate basic earnings per share for each period by dividing our net income attributable to Deutsche Bank shareholders by the average number of common shares outstanding. Earnings were adjusted by € 349 million and € 330 million before tax, € 292 million, € 298 million and € 276 million net of tax for the coupons paid on Additional Tier 1 Notes in April 2020, April 2019, April 2018, April 2017 and April 2016, respectively. Since 2019 the tax impact is recognized in net income (loss) directly.
3 We calculate diluted earnings per share for each period by dividing our net income attributable to Deutsche Bank shareholders by the average number of common shares outstanding, both after assumed conversions. Earnings were adjusted by € 349 million and € 330 million before tax, € 292 million, € 298 million and € 276 million net of tax for the coupons paid on Additional Tier 1 Notes in April 2020, April 2019, April 2018, April 2017 and April 2016 , respectively. For 2019, 2017 and 2016, there was no dilutive effect as the Group reported a net loss. There was no dilutive effect for 2018 as the net income was offset by coupons paid on Additional Tier 1 Notes.
4 Dividends declared and paid in the year.
5 Dividends declared and paid in U.S.$ were translated from euro into U.S.$ based on the exchange rates as of the respective payment days.
6 The dividend paid in 2017 consisted of € 0.11 for 2016 and of € 0.08 for 2015 that were paid simultaneously in 2017 after the agreement by the annual general meeting in 2017.

Balance Sheet Data

	2020	2019	2018	2017	2016
	in € m.	in € m.	in € m.	in € m.	in € m.
Total assets	1,324,961	1,297,674	1,348,137	1,474,732	1,590,546
Loans at amortized cost	426,691	429,841	400,297	401,699	408,909
Deposits	567,745	572,208	564,405	581,873	550,204
Long-term debt	149,163	136,473	152,083	159,715	172,316
Common shares[1]	5,291	5,291	5,291	5,291	3,531
Total shareholders' equity	54,774	55,857	62,495	63,174	59,833
Common Equity Tier 1 capital (CRR/CRD 4)[2]	44,700	44,148	47,486	50,808	47,782
Common Equity Tier 1 capital (CRR/CRD 4 fully loaded)[2]	44,700	44,148	47,486	48,300	42,279
Tier 1 capital (CRR/CRD 4)[2]	51,548	50,546	55,091	57,631	55,486
Tier 1 capital (CRR/CRD 4 fully loaded)[2]	50,448	48,733	52,082	52,921	46,829
Total regulatory capital (CRR/CRD 4)[2]	58,492	56,503	61,292	64,016	62,158
Total regulatory capital (CRR/CRD 4 fully loaded)[2]	57,071	56,503	61,292	63,250	59,502

1 Capital increased from authorized capital against cash contributions through a public offering with subscription rights in April 2017.
2 Figures presented based on the transitional rules ("CRR/CRD 4") and the full application ("CRR/CRD 4 fully loaded") of the CRR/CRD 4 framework.

Certain Key Ratios and Figures

	2020	2019	2018	2017	2016
Share price at period-end[1]	€ 8.95	€ 6.92	€ 6.97	€ 15.88	€ 15.40
Share price high[1]	€ 10.37	€ 8.32	€ 16.46	€ 17.82	€ 19.72
Share price low[1]	€ 4.49	€ 5.78	€ 6.68	€ 13.11	€ 8.83
Book value per basic share outstanding[2,4]	€ 26.03	€ 26.37	€ 29.69	€ 30.16	€ 38.14
Tangible book value per basic share outstanding[3,4]	€ 23.18	€ 23.41	€ 25.71	€ 25.94	€ 32.42
Post-tax return on average shareholders' equity[5]	0.2 %	(9.5) %	(0.1) %	(1.2) %	(2.3) %
Post-tax return on average tangible shareholders' equity[6]	0.2 %	(10.9) %	(0.1) %	(1.4) %	(2.7) %
Cost/income ratio[7]	88.4 %	108.2 %	92.7 %	93.4 %	98.1 %
Compensation ratio[8]	43.6 %	48.1 %	46.7 %	46.3 %	39.6 %
Noncompensation ratio[9]	44.7 %	60.1 %	46.0 %	47.0 %	58.5 %
Common Equity Tier 1 capital ratio (CRR/CRD 4)[10]	13.6 %	13.6 %	13.6 %	14.8 %	13.4 %
Common Equity Tier 1 capital ratio (CRR/CRD 4 fully loaded)[10]	13.6 %	13.6 %	13.6 %	14.0 %	11.8 %
Tier 1 capital ratio (CRR/CRD 4)[10]	15.7 %	15.6 %	15.7 %	16.8 %	15.6 %
Tier 1 capital ratio (CRR/CRD 4 fully loaded)[10]	15.3 %	15.0 %	14.9 %	15.4 %	13.1 %
Employees at period-end (full-time equivalent):					
In Germany	37,315	40,491	41,669	42,526	44,600
Outside Germany	47,344	47,106	50,068	55,009	55,144
Branches at period-end:					
In Germany	1,295	1,325	1,409	1,570	1,776
Outside Germany	596	606	655	855	880

[1] Historical share prices have been adjusted on March 20, 2017 with retroactive effect to reflect the capital increase by multiplying a correcting factor of 0.8925.
[2] Shareholders' equity divided by the number of basic shares outstanding (both at period-end). For further information, please refer to "Supplementary Information (Unaudited) Non-GAAP Financial Measures" of the Annual Report 2020.
[3] Shareholders' equity less goodwill and other intangible assets, divided by the number of basic shares outstanding (both at period-end). For further information, please refer to "Supplementary Information (Unaudited) Non-GAAP Financial Measures" of the Annual Report 2020.
[4] The number of average basic shares outstanding has been adjusted for all periods before April 2017 in order to reflect the effect of the bonus element of the subscription rights issue in connection with the capital increase in April 2017.
[5] Net income attributable to our shareholders as a percentage of average shareholders' equity. For further information, please refer to "Supplementary Information (Unaudited) Non-GAAP Financial Measures" of the Annual Report 2020.
[6] Net income attributable to our shareholders as a percentage of average tangible shareholders' equity. For further information, please refer to "Supplementary Information (Unaudited) Non-GAAP Financial Measures" of the Annual Report 2020.
[7] Total noninterest expenses as a percentage of net interest income before provision for credit losses, plus noninterest income.
[8] Compensation and benefits as a percentage of total net interest income before provision for credit losses, plus noninterest income.
[9] Noncompensation noninterest expenses, which is defined as total noninterest expenses less compensation and benefits, as a percentage of total net interest income before provision for credit losses, plus noninterest income.
[10] Figures are based on the transitional rules ("CRR/CRD 4") and the full application ("CRR/CRD 4 fully loaded") of the CRR/CRD 4 framework.

Dividends

The following table shows the dividend per share in euro and in U.S. dollars for the years ended December 31, 2020, 2019, 2018, 2017 and 2016. We declare our dividends at our Annual General Meeting following each year. For 2020, the Management Board will propose in the Annual General Meeting not to pay a dividend. Our dividends are based on the non-consolidated results of Deutsche Bank AG as prepared in accordance with German accounting principles. Because we declare our dividends in euro, the amount an investor actually receives in any other currency depends on the exchange rate between euro and that currency at the time the euros are converted into that currency.

In general, the German withholding tax applicable to dividends is 26.375 % (consisting of a 25 % withholding tax and an effective 1.375 % surcharge). According to an amendment of the German Investment Tax Act, dividends received by a fund within the meaning of the German Investment Tax Act are subject to 15 % German withholding tax equal to the Treaty tax rate. For individual German tax residents the withholding tax paid represents for private dividends, generally, the full and final income tax applicable to the dividends. Dividend recipients who are tax residents of countries that have entered into a convention for avoiding double taxation may be eligible to receive a refund from the German tax authorities for a portion of the amount withheld and in addition may be entitled to receive a tax credit for the German withholding tax not refunded in accordance with their local tax law.

Generally, U.S. residents will be entitled to receive a refund equal to 11.375 % of the dividends paid. For US federal income tax purposes, the dividends we pay are not eligible for the dividends received deduction generally allowed for dividends received by US corporations from other US corporations.

Dividends in the table below are presented before German withholding tax.

See “Item 10: Additional Information – Taxation” for more information on the tax treatment of our dividends.

			Payout ratio[2,3]	
	Dividends per share[1,4]	Dividends per share[4]	Basic earnings per share	Diluted earnings per share
2020 (proposed)	$ 0.00	€ 0.00	€ 0.00	€ 0.00
2019	$ 0.00	€ 0.00	N/M	N/M
2018	$ 0.13	€ 0.11	N/M	N/M
2017	$ 0.13	€ 0.11	N/M	N/M
2016	$ 0.12	€ 0.11	N/M	N/M

N/M – Not meaningful
1 For your convenience, we present dividends in U.S. dollars for each year by translating the euro amounts at the period end rate for the last business day of each year.
2 We define our payout ratio as the dividends we paid per share in respect of each year as a percentage of our basic and diluted earnings per share for that year.
3 The number of average basic and diluted shares outstanding has been adjusted in order to reflect the effect of the bonus element of the subscription rights issue in connection with the capital increase in April 2017. For 2019, 2017 and 2016 , there was no dilutive effect as the Group reported a net loss attributable to shareholders and no dilutive effect for 2018 as net income was offset by AT1 coupons paid.
4 Dividends for 2016 and 2015 were approved by the annual general meeting in 2017 and were paid simultaneously in 2017.

Capitalization and Indebtedness

Consolidated capitalization in accordance with IFRS as issued by the IASB as of December 31, 2020

	in € m.
Debt:[1,2]	
Long-term debt	149,163
Trust preferred securities	1,321
Long-term debt at fair value through profit or loss	3,374
Total debt	153,858
Shareholders' equity:	
Common shares (no par value)	5,291
Additional paid-in capital	40,606
Retained earnings	10,002
Common shares in treasury, at cost	(7)
Accumulated other comprehensive income, net of tax	
Unrealized net gains (losses) on financial assets at fair value through other comprehensive income, net of tax and other	278
Unrealized net gains (losses) on derivatives hedging variability of cash flows, net of tax	7
Unrealized net gains (losses) on assets classified as held for sale, net of tax	0
Unrealized net gains (losses) attributable to change in own credit risk of financial liabilities designated at fair value through profit and loss, net of tax	7
Foreign currency translation, net of tax	(1,411)
Unrealized net gains (losses) from equity method investments	(1)
Total shareholders' equity	54,774
Equity component of financial instruments	5,824
Noncontrolling interests	1,587
Total equity	62,184
Total capitalization	216,043

[1] € 734 million (0.5 %) of our debt was guaranteed by the German government as of December 31, 2020 related to legacy positions assumed in the context of the Postbank takeover.
[2] € 62,448 million (41 %) of our debt was secured as of December 31, 2020.

Reasons for the Offer and Use of Proceeds

Not required because this document is filed as an annual report.

Risk Factors

An investment in our securities involves a number of risks. You should carefully consider the following information about the risks we face, together with other information in this document, when you make investment decisions involving our securities. If one or more of these risks were to materialize, it could have a material adverse effect on our financial condition, results of operations, cash flows or prices of our securities.

Summary of Risk Factors

Risks Relating to the Macroeconomic, Geopolitical and Market Environment. As a global investment bank with a large private client franchise, our businesses are materially affected by global macroeconomic and financial market conditions. Significant risks – in particular arising from the COVID-19 pandemic and its effects on the macroeconomic, market, business and political environment – exist that could negatively affect the results of operations and financial condition in some of our businesses as well as our strategic plans. In the European Union, continued elevated levels of political uncertainty could have unpredictable consequences for the financial system and the greater economy. The withdrawal of the United Kingdom from the European Union ("Brexit") may have adverse effects on our business, results of operations or strategic plans. Political risks stemming from the deep divide in U.S. society observed around the Presidential elections or from the populist movements in major European Union member states could also have unpredictable consequences for the financial system and the economy. Our ability to protect ourselves against these risks is limited. We are also subject to other global macroeconomic and political risks.

Risks Relating to Our Business and Strategy. Our results of operation and financial condition have in the past been negatively impacted by the market environment, uncertain macroeconomic and geopolitical conditions, lower levels of client activity, increased competition and regulation, and the immediate impact of our strategic decisions. If we are unable to improve our profitability, we may be unable to meet our strategic aspirations, and may have difficulty maintaining capital, liquidity and leverage at levels expected by market participants and our regulators. Adverse market conditions, asset price deteriorations, volatility and cautious investor sentiment have affected and may in the future materially and adversely affect our revenues and profits, particularly in our investment banking, brokerage and other commission- and fee-based businesses. As a result, we have in the past incurred and may in the future incur significant losses from our trading and investment activities.

Our liquidity, business activities and profitability may be adversely affected by an inability to access the debt capital markets or to sell assets during periods of market-wide or firm-specific liquidity constraints. Credit rating downgrades have contributed to increases in our funding costs in the past, and any future downgrade could materially adversely affect our funding costs, the willingness of counterparties to continue to do business with us and significant aspects of our business model.

If we are unable to implement our strategic plans successfully, we may be unable to achieve our financial objectives. We may have difficulties selling companies, businesses or assets at favorable prices or at all and may experience material losses from these assets and other investments irrespective of market developments. We may also have difficulty in identifying and executing business combinations. Intense competition, in our home market of Germany as well as in international markets, has and could continue to have a material adverse impact on our revenues and profitability.

Risks Relating to Regulation and Supervision. Regulatory reforms, together with increased regulatory scrutiny more generally, have had and continue to have a significant impact on us and may adversely affect our business and ability to execute our strategic plans. Competent regulators may prohibit us from making dividend payments or payments on our regulatory capital instruments, suspend certain activities or take other actions if we fail to comply with regulatory requirements. Regulatory and legislative changes require us to maintain increased capital and debt that can be bailed in in a resolution scenario and abide by tightened liquidity requirements. Any perceptions in the market that we may be unable to meet our capital or liquidity requirements could intensify the effect of these factors on our business and results. Other regulatory reforms adopted or proposed in the wake of the financial crisis – for example, extensive new regulations governing our derivatives activities, compensation, bank levies, deposit protection including in the event that a compensation case is ascertained, data protection or a possible financial transaction tax – may materially increase our operating costs and negatively impact our business model.

Risks Relating to Our Internal Control Environment. We have identified the need to strengthen our internal control environment and infrastructure and have embarked on initiatives to do so. The BaFin has ordered us to improve our control and compliance infrastructure relating to our anti-money laundering and know-your-client processes, and appointed a special representative to monitor these measures' implementation. Should we fail in our efforts, we may be subject to regulatory sanctions.

Risks Relating to Litigation, Regulatory Enforcement Matters and Investigations. We operate in a highly and increasingly regulated and litigious environment, potentially exposing us to liability and other costs, the amounts of which may be substantial and difficult to estimate, as well as to legal and regulatory sanctions and reputational harm. Among other matters:

- We are the subject of industry-wide investigations by regulatory and law enforcement agencies relating to interbank and dealer offered rates, as well as civil actions.
- We are involved in civil proceedings in connection with our takeover offer for Postbank.
- We have investigated the circumstances around equity trades entered into by certain clients in Moscow and London and have advised regulators and law enforcement authorities in several jurisdictions about those trades.
- We are the subject of industry-wide inquiries and investigations by regulatory and law enforcement authorities relating to transactions of clients in German shares around the dividend record dates for the purpose of obtaining German tax credits or refunds of withholding tax levied on dividend payments (so-called cum-ex transactions), as well as civil actions.
- We have entered into a deferred prosecution agreement (DPA) with the U.S. Department of Justice concerning our historical engagements of finders and consultants and precious metals spoofing. If we violate the DPA, its term could be extended, or we could be subject to criminal prosecution or other actions.
- We are under continuous examination by tax authorities in the jurisdictions in which we operate.
- We are involved in a legal dispute with the German tax authorities in relation to the tax treatment of certain income received with respect to our pension plan assets.
- U.S. Congressional committees and other U.S. governmental entities have sought and may seek information from us concerning potential dealings between us and the U.S. executive branch, former President Trump, his family and other close associates.
- We have received requests for information from regulatory and law enforcement agencies concerning our correspondent banking relationship with Danske Bank and our anti-financial crime controls, including in the United States.

Should any of the legal proceedings be resolved against us, or any investigations result in a finding that the Bank failed to comply with applicable law, the Bank could be exposed to material damages, fines, limitations on business, remedial undertakings, criminal prosecution or other material adverse effects on our financial condition, as well as risk to our reputation and potential loss of business as a result of extensive media attention. Guilty pleas by or convictions of us or our affiliates in criminal proceedings, or regulatory or enforcement orders, settlements or agreements to which we or our affiliates become subject, may have consequences that have adverse effects on certain of our businesses.

Other Risks. In addition to our traditional banking businesses of deposit-taking and lending, we also engage in nontraditional credit businesses in which credit is extended in transactions that include holding securities of third parties or in complex derivative transactions. These businesses materially increase our exposure to credit risk.

A substantial proportion of our assets and liabilities comprise financial instruments that we carry at fair value, with changes in fair value recognized in our income statement. We have incurred losses, and may incur further losses, from such changes.

Pursuant to accounting rules, we must periodically test the value of the goodwill of our businesses and the value of our other intangible assets for impairment. If such test determines that impairment exists, we must write down the value of such asset. We must also review our deferred tax assets at the end of each reporting period. If it is no longer probable that sufficient taxable income will be available to allow all or a portion of our deferred tax assets to be utilized, we must reduce the carrying amounts. Impairments of goodwill and other intangible assets and reductions in deferred tax assets have had and may in the future have material adverse effects on our profitability, equity and financial condition. We are also exposed to pension risks which can materially impact the measurement of our pension obligations, including interest rate, inflation and longevity risks that can materially impact our earnings.

Our risk management policies, procedures and methods leave us exposed to unidentified or unanticipated risks, which could lead to material losses.

Operational risks, which may arise from errors in the performance of our processes, the conduct of our employees, instability, malfunction or outage of our IT systems and infrastructure, or loss of business continuity, or comparable issues with respect to our third party service providers, may disrupt our businesses and lead to material losses.

We utilize a variety of third parties in support of our business and operations. Services provided by third parties pose risks to us comparable to those we bear when we perform the services ourselves, and we remain ultimately responsible for the services. If such a third party does not conduct business in accordance with applicable standards or our expectations, we could be exposed to material losses or regulatory action or litigation or fail to achieve the benefits we sought from them.

Our operational systems are subject to an increasing risk of cyber-attacks and other internet crime, which could result in material losses of client or customer information, damage our reputation and lead to regulatory penalties and financial losses.

The size of our clearing operations exposes us to a heightened risk of material losses should they fail to function properly.

Ongoing global benchmark reform efforts, specifically the transition from interbank offered rates to alternative reference rates that are under development, introduce a number of risks to our business and the financial industry.

We are subject to laws and other requirements relating to financial and trade sanctions and embargoes. If we breach such laws and requirements, we can be subject, and have in the past been subject, to material regulatory enforcement actions and penalties. Transactions with counterparties in countries designated by the U.S. State Department as state sponsors of terrorism or persons targeted by U.S. economic sanctions may lead potential customers and investors to avoid doing business with us or investing in our securities, harm our reputation or result in regulatory or enforcement action.

Risks Relating to the Macroeconomic, Geopolitical and Market Environment

As a global investment bank with a large private client franchise, our businesses are materially affected by global macroeconomic and financial market conditions. Significant risks exist that could negatively affect the results of operations and financial condition in some of our businesses as well as our strategic plans, including risks posed by the COVID-19 pandemic, deterioration of the economic outlook for the euro area and slowing in emerging markets, trade tensions between the United States and China as well between the United States and Europe, inflation risks and other geopolitical risks.

The COVID-19 pandemic led to unprecedented GDP declines in virtually all countries in 2020 though recovery in many regions progressed faster than expected. In spite of this, the historic economic disruptions caused by the COVID-19 pandemic will still have lingering effects in the months ahead, and this may only be protracted by widespread vaccination delays. By the end of 2020, a resurgence of COVID-19 cases was observed in various regions and many countries have moved to re-impose national lockdowns. Overall, global real GDP decreased by 3.3 % in 2020 in comparison to 3.0 % growth reported in 2019. Global inflation was 2.7 % in 2020. In the industrialized countries, GDP plunged by 5.1 % and consumer prices rose by 0.7 % while GDP of emerging market economies decreased by 2.1 % and inflation reached 3.9 %.

Following a sharp contraction in the first half of 2020, the Eurozone economy recovered strongly, but suffered another albeit much smaller GDP decline in the final quarter. Households and businesses were supported by massively expanded fiscal policy measures and the expansionary monetary policy of the European Central Bank (ECB), which provided favorable financial conditions. At the end of 2020, the ECB increased Pandemic Emergency Purchase Program (PEPP) by another € 500 billion, expanding it to a total of € 1.85 trillion. In addition, PEPP will run nine months longer than planned, until at least the end of March 2022. At the beginning of the fourth quarter of 2020, a second wave of COVID-19 infections gained momentum and required renewed containment measures. A modest trade deal between the EU and the UK was finally agreed in December 2020. In 2020 the Eurozone economy decreased by 6.8 % and consumer prices rose by only 0.2 %. Due to the slump caused by the COVID-19 pandemic, German economic activity fell by 5.0 % in 2020.

The U.S. economy experienced a massive contraction in the second quarter of 2020, followed by a stronger than expected recovery. The unemployment rate climbed to new record highs, but the labor market improved again as the recovery progressed. A strong second wave of COVID-19 in combination with delayed additional fiscal stimulus constrained the recovery. All in all, U.S. GDP contracted by 3.5 % in 2020. Inflation decelerated to 1.2 % from 1.8 % in 2019. The Federal Reserve acted quickly and aggressively to keep funds flowing freely in money and credit markets.

The Japanese economy recovered faster than expected in the third quarter after contracting sharply in the first half of the year. During a second wave of COVID-19 infections in summer 2020, the government did not declare a nationwide state of emergency and instead tried to support economic activity. GDP contracted by 4.9 % in 2020. The Bank of Japan kept an accommodative policy stance, while paying attention to policy side effects. Inflation decelerated to 0 %, after 0.5 % in 2019.

Asian economies experienced a stronger than expected rebound in economic activity from the impact of COVID-19. China, Japan and other north Asian economies have been relatively successful in controlling the virus and returning to or toward pre-virus levels of activity. Emerging Asia economies contracted by only 1.0 % in 2020. Asian central banks have reached the limits of conventional stimulus through interest rate cuts. China continued its V-shaped recovery, making it the only major economy achieving a positive growth rate in 2020, with growth of 3 %. The rebound was driven by a robust industrial sector and a faster-than-expected recovery in services activity. The surge in China contributed strongly to the recovery in global trade. Inflation decelerated to 2.5 % in 2020 from 2.9 % in 2019.

There are a number of global economic and political risks that could jeopardize global, regional and national economies. Challenges in containing the COVID-19 pandemic or a more severe global spread could further dampen economic momentum considerably. Trade conflicts including upcoming trade negotiations between the U.S. and the European Union (EU) could negatively impact the global economic outlook. Following Brexit, trade relations between the United Kingdom (UK) and the EU remain uncertain, particularly in respect of financial services. In the Eurozone, the government debt burden in some countries, especially in Italy, is a risk due to the fragile political situation. We expect fiscal stimulus proposals from the new U.S. administration. Additionally, geopolitical tensions with respect to China and the Middle East could create further uncertainty.

If these risks materialize, or current negative conditions persist or worsen, our business, results of operations or strategic plans could be adversely affected.

We are subject to global economic, market and business risks with respect to the current COVID-19 pandemic.

Since early 2020 our macroeconomic business and operating environment has been dominated by the COVID-19 pandemic. Following the severe GDP contractions observed across major advanced economies in 2020, we expect economic recovery to unfold in the course of 2021 as COVID-19 vaccination becomes more available and additional fiscal stimulus is provided in the U.S. and EU economies in particular.

However, we continue to see significant downside risks in the short-term economic outlook from the protracted waves of COVID-19 infections, the emergence of new, potentially more infectious COVID-19 strains, and resumed lockdown restrictions. The pandemic continues to create a climate of uncertainty which has significantly impacted economies and our operations. Though most countries have approved vaccines for public use and begun vaccination programs, there remains some uncertainty about their effectiveness on certain groups of the population, as well as doubt about the speed at which vaccinations can be rolled out across populations, and this skepticism will likely continue for some time. Furthermore, with respect to the phased delivery and availability of vaccines across the globe, the underlying recovery rate may vary from country to country and therefore affect creditworthiness of counterparties and drive elevated default risk throughout the year. Additionally, new lockdown measures with types, durations, and intensities that are not fully predictable could outweigh any potential upside from the vaccines.

Due to the largely unprecedented nature of the COVID-19 crisis, forecast uncertainty will probably remain unusually high for quite some time. As a bank, our working assumption remains that lagging effects of the recession caused by the COVID-19 pandemic will continue to unfold in 2021 and that the low interest rate environment in the Eurozone will persist for several quarters at least.

During 2020, we observed a worsening of the creditworthiness of certain portfolios due to the deterioration of the overall economic situation, which is also reflected in our increased level of loan loss provisions. If the situation continues to worsen, it may lead to additional rating declines among our clients, further increasing loan losses as well as potential client drawdowns of credit facilities (as observed earlier in 2020) which in turn would lead to an increase in capital requirements and liquidity demands. Higher volatility in financial markets could lead to increased margin calls both inbound and outbound. The bank regularly utilises collateralized loan obligations (CLO) and credit default swaps (CDS) to manage concentration risk. However this may not be sufficient to fully offset potential credit losses.

Policy measures taken by central banks and governments such as debt moratoria have helped to mitigate some of the short-term impacts. Withdrawal of support measures coupled with a significant increase in corporate and sovereign debt levels as a result of the crisis is likely to mean that defaults and credit losses will remain elevated over the course of 2021 with an ongoing dispersion both between and within sectors.

The COVID-19 pandemic has intensified the “lower for longer” interest rate environment. This has resulted in further pressure on bank interest margins and a prolonged period of low interest rates in the Eurozone could materially affect our profitability and balance sheet deployment. While our revenues are particularly sensitive to interest rates, given the size of our loan and deposit books denominated in euros, the low interest rate environment can also impact other balance sheet positions which are accounted at fair value. Interest rates remain negative for certain risk-free instruments, especially German government bonds.

The low interest rate environment has also supported elevated market valuations across risk assets as investors search for yield, with the technology sector in particular focus. In recent weeks this has included concerted action from retail investors resulting in a short squeeze across selected assets. These trends raise the risk of a significant price correction which may potentially be triggered by delays to vaccine rollout, lower vaccine efficacy and/or an increase in interest rates. Risks are amplified by high debt levels, a lack of liquidity in some areas of the market and an easing of global underwriting standards. Adverse market conditions, unfavorable prices and volatility including material movements in foreign exchange rates (and resulting translation effects) as well as cautious investor and client sentiment may in the future materially and adversely affect our revenues and profits as well as the timely and complete achievement of our strategic aspirations and targets.

If the COVID-19 vaccine roll-out continues, and boosted by massive monetary and fiscal policy support, the expected economic recovery and reflation is possible over the medium term. This could in turn lead consumer price and asset price inflation in major advanced economies to accelerate substantially faster than anticipated. While this could create some upside potential for our business activity levels and net interest income, a disorderly sharp increase in bond yields could trigger a downward correction to equities and other potentially overvalued risk asset markets. While it is likely that central banks would act to contain market volatility, potential increases in short-term interest rates and rapid curtailment of quantitative easing programs could lead to the materialisation of a number of risks, such as the widening of credit spreads, which could impact

trading results. In addition, we could see increased counterparty credit exposure on derivatives, increased credit risks on highly leveraged clients and emerging markets with external imbalances as well as inflation risk on pension fund assets.

From an operational perspective, and despite the business continuity and crisis management policies currently in place, the COVID-19 pandemic, unexpected developments such as the emergence of new strains of the virus and resulting rapid changes in government responses may continue to have an adverse impact on our business activities. The move across global industries to conduct business from home and away from primary office locations continues to put pressure on business practices, and the demand on our technology infrastructure. Additionally, the current situation also exposes us to a greater risk of cyber-attacks which could lead to technology failures, security breaches, unauthorized access, loss or destruction of data or unavailability of services, as well as increase the likelihood of conduct breaches. Any of these events could result in litigation or result in a financial loss, disruption of our business activities and liability to our customers, government intervention or damage to our reputation. At the same time, the cost to us of managing these cyber, information security and other risks remains high. Delays in the implementation of regulatory requirements, including consumer protection measures and of our strategic projects could also have a negative impact on our revenues and costs, while a return of higher market volatility has led and could continue to lead to increased demand on markets surveillance monitoring and processing. Our vendors and service providers are facing similar challenges with the risk that these counterparties could be unable to fulfil their contractual obligations, putting the benefits we seek to obtain from such contracts at risk.

In addition, the COVID-19 pandemic reduced the rate of regular employee attrition by around 30 % versus historical levels, creating a more challenging context to the Group headcount and cost targets and increasing the cost of involuntary severance arrangements. This also limited the opportunity to redeploy talented employees within the bank whose roles were made redundant. Despite the overall lower attrition rate, we may also face difficulties attracting and retaining talented personnel, particularly in front-office positions that are key to revenue generation and in positions key to improving our control environment.

Accordingly, the current COVID-19 pandemic and its impact on the global economy and our business may affect our results of operations, strategic plans and targets, and the prices of our securities.

In the European Union, continued elevated levels of political uncertainty could have unpredictable consequences for the financial system and the greater economy, and could contribute to European de-integration in certain areas, potentially leading to declines in business levels, write-downs of assets and losses across our businesses. Our ability to protect ourselves against these risks is limited.

The last several years have been characterized by increased political uncertainty as Europe in particular has been impacted by the European sovereign debt crisis, the withdrawal of the UK from the European Union, Italian political and economic developments, protests in France, the refugee crisis and the increasing attractiveness to voters of populist and anti-austerity movements. Although the severity of the European debt crisis appeared to have abated somewhat over recent years as the actions by the ECB, the rescue packages and the economic recovery appeared to have stabilized the situation in Europe, political uncertainty has nevertheless continued to be at an elevated level in recent periods and could trigger unwinding of aspects of European integration that have benefitted our businesses. Against this backdrop, the prospects for national structural reform and further integration among EU member states, both viewed as important tools to reduce the Eurozone’s vulnerabilities to future crises, appear to have worsened. These trends may ultimately result in material reductions in our business levels as our customers rein in activity levels in light of decreased economic output and increased uncertainty, which would materially adversely affect our operating results and financial condition. An escalation of political risks could have consequences both for the financial system and the greater economy as a whole, potentially leading to declines in business levels, write-downs of assets and losses across our businesses.

In addition, in a number of EU member states which had national elections in recent years, including France, Germany and the Netherlands, political parties disfavoring current levels of European integration, or espousing the unwinding of European integration to varying extents, have attracted support. Brexit has also given a voice to some of these political parties to challenge European integration. The resulting uncertainty could have significant effects on the value of the euro and on prospects for member states’ financial stability, which in turn could potentially lead to a significant deterioration of the sovereign debt market, especially if Brexit did not result in the strongly adverse effects on the UK that many have predicted. If one or more members of the Eurozone defaults on their debt obligations or decides to leave the common currency, this would result in the reintroduction of one or more national currencies. Should a Eurozone country conclude it must exit the common currency, the resulting need to reintroduce a national currency and restate existing contractual obligations could have unpredictable financial, legal, political and social consequences, leading not only to significant losses on sovereign debt but also on private debt in that country. Given the highly interconnected nature of the financial system within the Eurozone, and the high levels of exposure we have to public and private counterparties around Europe, our ability to plan for such a contingency in a manner that would reduce our exposure to non-material levels is likely to be limited. If the overall economic climate deteriorates as a result of Brexit or further departures from the Eurozone, our businesses could be adversely affected, and, if overall business levels decline or we are forced to write down significant exposures among our various businesses, we could incur substantial losses.

The withdrawal of the United Kingdom from the European Union – Brexit – may have adverse effects on our business, results of operations or strategic plans.

The UK Government concluded a Trade Cooperation Agreement (TCA) with the European Union which came into effect on January 1, 2021. The TCA generally did not seek to cover financial services.

Given the ongoing uncertainty over the UK's withdrawal from the European Union, it is difficult to determine the exact impact on Deutsche Bank AG over the long term. However, the UK's economy and those of the Eurozone countries are very tightly linked as a result of EU integration projects other than the Euro, and the scale of our businesses in the UK – especially those dependent on activity levels in the City of London, to which we are heavily exposed and which may deteriorate as a result of Brexit – means that even modest effects in percentage terms can have a very substantial adverse effect on our businesses. Brexit has, unfortunately, resulted in a disruption of the provision of cross-border financial services. Also, if there is to be further delay or possibly a failure to reach agreement on matters determining mutual 'equivalence' under respective legislation, this will lead to greater costs to reorganize parts of our business and will restrict our ability to provide financial services to and from the UK in the seamless manner that was done previously. The currently unsettled future relationship between the EU and the UK is also likely to lead to further uncertainty in relation to the regulation of cross-border business activities.

We have applied for authorization from the Prudential Regulation Authority and Financial Conduct Authority, our UK regulators, to continue to undertake regulated activity in the UK (previously undertaken pursuant to the European Passport provisions) in case of a no-deal outcome. Despite our Brexit preparations, failure to gain authorization as a Third Country Branch in 2021 could adversely affect our business, results of operations or strategic plans. Also, without equivalence between EU and UK regimes for financials services we will be restricted in our ability to provide financial services to and from the UK.

Despite our extensive preparations as a result of Brexit, our business and strategic plans could be adversely affected. It is difficult to assess any adverse consequences with any quantitative certainty at this time, particularly since they will depend on future political and market developments.

We may be required to take impairments on our exposures to the sovereign debt of European or other countries if the European sovereign debt crisis reignites. The credit default swaps into which we have entered to manage sovereign credit risk may not be available to offset these losses.

The effects of the sovereign debt crisis have been especially evident in the financial sector, as a large portion of the sovereign debt of Eurozone countries is held by European financial institutions, including Deutsche Bank. As of December 31, 2020, we had a direct sovereign credit risk exposure of € 5.7 billion to Italy, € 4.4 billion to Spain, € 1.1 billion to Greece, € 212 million to Portugal and € 197 million to Ireland. Despite the apparent abatement of the crisis in recent years, it remains uncertain whether, in light of the current political environment, Greece or other Eurozone sovereigns, such as Spain, Italy, Portugal and Cyprus, will be able to manage their debt levels in the future and whether Greece will attempt to renegotiate its past international debt restructuring. The rise of anti-austerity parties and populist sentiment in many of these countries poses a threat to the medium- to long-term measures recommended for these countries to alleviate the tensions in the Eurozone caused by drastically differing economic situations among the Eurozone states. In the future, negotiations or exchanges similar to the Greek debt restructuring in 2012 could take place with respect to the sovereign debt of these or other affected countries. The outcome of any negotiations regarding changed terms (including reduced principal amounts or extended maturities) of sovereign debt may result in additional impairments of assets on our balance sheet. Any negotiations are highly likely to be subject to political and economic pressures that we cannot control, and we are unable to predict their effects on the financial markets, on the greater economy or on ourselves.

In addition, any restructuring of outstanding sovereign debt may result in potential losses for us and other market participants that are not covered by payouts on hedging instruments that we have entered into to protect against the risk of default. These instruments largely consist of credit default swaps, generally referred to as CDSs, pursuant to which one party agrees to make a payment to another party if a credit event (such as a default) occurs on the identified underlying debt obligation. A sovereign restructuring that avoids a credit event through voluntary write-downs of value may not trigger the provisions in CDSs we have entered into, meaning that our exposures in the event of a write-down could exceed the exposures we previously viewed as our net exposure after hedging. Additionally, even if the CDS provisions are triggered, the amounts ultimately paid under the CDSs may not correspond to the full amount of any loss we incur. We also face the risk that our hedging counterparties have not effectively hedged their own exposures and may be unable to provide the necessary liquidity if payments under the instruments they have written are triggered. This may result in systemic risk for the European banking sector as a whole and may negatively affect our business and financial position.

We are also subject to other global macroeconomic and political risks, including with respect to China and the Middle East.

The passing of a national security law for Hong Kong by China has exacerbated tensions between the U.S. and China. The U.S. views this move by China as compromising Hong Kong's autonomy and has therefore revoked Hong Kong's special trade status and sanctioned Chinese officials. Tensions between the U.S. and China regarding Taiwan have also increased. While it is too early for us to predict the medium to long term impacts of this on our business or our financial targets, these could be material and adverse.

The escalation of tensions in the Middle East is another important political risk, which came into focus in light of a brief U.S.-Iran military escalation in January 2020 and which has the potential to escalate again over Iran's nuclear programme following recent steps towards higher uranium enrichment levels. A full scale conflict would lead to a sharp increase in oil prices and affect oil dependent industries (such as Automotives, Chemicals, Aviation). Ensuing turbulence in global financial markets would impact risky assets and countries. Taken together, a full blown conflict would lead to a substantial slowdown in the global economy and diminish our ability to generate revenues and the profitability on specific portfolios as well as result in higher than expected loan losses. Despite the business continuity and crisis management policies currently in place, a regional conflict could pose challenges related to a potential personnel evacuation as well as loss of business continuity, which may disrupt our business and lead to material losses.

Risks Relating to Our Business and Strategy

Our results of operation and financial condition have in the past been negatively impacted by the challenging market environment, uncertain macroeconomic and geopolitical conditions, lower levels of client activity, increased competition and regulation, and the immediate impact of our strategic decisions. If we are unable to improve our profitability, we may be unable to meet our strategic aspirations, and may have difficulty maintaining capital, liquidity and leverage at levels expected by market participants and our regulators.

The Bank experienced an increase in net revenues in 2020 compared to 2019. This revenue increase was caused by significantly higher revenues in the Investment Bank driven by benefits of underlying market activity. Net revenues in our other Core Bank divisions – the Corporate Bank, the Private Bank and Asset Management – each declined slightly, impacted by interest rate headwinds, negative impacts from the COVID-19 pandemic and industry-wide margin compression.

The ability of our Investment Bank to continue its performance of 2020 is dependent on the continuation of high levels of market activity in investment banking as an industry. This will likely be impacted by the development of the COVID-19 pandemic, which continues to pose significant downside risks. The COVID-19 pandemic also has intensified the "lower for longer" interest rate environment, which has impacted the results of several of our divisions. The low rate environment has also supported elevated market valuations across risk assets as investors search for yield. These trends raises the risk of a significant price correction which may potentially be triggered by delays to vaccine rollout, lower vaccine efficacy and / or an increase in interest rates. Risks are amplified by high debt levels, a lack of liquidity in some areas of the market and an easing of global underwriting standards. We expect our provision for credit losses to continue to be impacted by the COVID-19 pandemic and its effect on our Expected Credit Loss (ECL) estimate to continue in 2021. Adverse market conditions, unfavorable prices and volatility including material movements in foreign exchange rates (and resulting translation effects) as well as cautious investor and client sentiment may in the future materially and adversely affect our revenues and profits as well as the timely and complete achievement of our strategic aspirations and targets.

Changes in our business mix towards lower-margin, lower-risk products can limit our opportunities to profit from volatility. Regulators have generally encouraged the banking sector to focus more on the facilitation of client flow and less on risk taking. This has been effected in part by increasing capital requirements for higher-risk activities. In addition, some of our regulators have encouraged or welcomed changes to our business perimeter, consistent with their emphasis on lower-risk activities for banks. In recent years, we have reduced our exposure to a number of businesses that focused on riskier but more capital-intensive products (but that in earlier periods also had the potential to be more highly profitable). Further pressure on our revenues and profitability has resulted from long-term structural trends driven by regulation (especially increased regulatory capital, leverage and liquidity requirements and increased compliance costs) and competition that have further compressed our margins in many of our businesses. Should a combination of these factors continue to lead to reduced margins and subdued activity levels in our trading and markets business over the longer term, this could impair out ability to reach our financial targets.

Although we have in current years made considerable progress resolving litigation, enforcement and similar matters broadly within our established reserves, this pattern may not continue. In particular, these costs could substantially exceed the level of provisions that we established for our litigation, enforcement and similar matters, which can contribute to negative market perceptions about our financial health, costing us business. This, combined with the actual costs of litigation, enforcement and other matters, could in turn adversely affect our ability to maintain capital, liquidity and leverage at levels expected by market participants and our regulators.

Adverse market conditions, asset price deteriorations, volatility and cautious investor sentiment have affected and may in the future materially and adversely affect our revenues and profits, particularly in our investment banking, brokerage and other commission- and fee-based businesses. As a result, we have in the past incurred and may in the future incur significant losses from our trading and investment activities.

As a global investment bank, we have significant exposure to the financial markets and are more at risk from adverse developments in the financial markets than are institutions engaged predominantly in traditional banking activities. Sustained market declines have in the past caused and can in the future cause our revenues to decline, and, if we are unable to reduce our expenses at the same pace, can cause our profitability to erode or cause us to show material losses. Volatility can also adversely affect us, by causing the value of financial assets we hold to decline or the expense of hedging our risks to rise. Reduced customer activity can also lead to lower revenues in our “flow” business.

Specifically, our investment banking revenues, in the form of financial advisory and underwriting fees, directly relate to the number and size of the transactions in which we participate and are susceptible to adverse effects from sustained market downturns. These fees and other income are generally linked to the value of the underlying transactions and therefore can decline with asset values. In addition, periods of market decline and uncertainty tend to dampen client appetite for market and credit risk, a critical driver of transaction volumes and investment banking revenues, especially transactions with higher margins. In recent and other times in the past, decreased client appetite for risk has led to lower levels of activity and lower levels of profitability in our Investment Bank corporate division. Our revenues and profitability could sustain material adverse effects from a significant reduction in the number or size of debt and equity offerings and merger and acquisition transactions.

Market downturns also have led and may in the future lead to declines in the volume of transactions that we execute for our clients and, therefore, to declines in our noninterest income. In addition, because the fees that we charge for managing our clients’ portfolios are in many cases based on the value or performance of those portfolios, a market downturn that reduces the value of our clients’ portfolios or increases the amount of withdrawals reduces the revenues we receive from our asset management and private banking businesses. Even in the absence of a market downturn, below-market or negative performance by our investment funds may result in increased withdrawals and reduced inflows, which would reduce the revenue we receive. While our clients would be responsible for losses we incur in taking positions for their accounts, we may be exposed to additional credit risk as a result of their need to cover the losses where we do not hold adequate collateral or cannot realize it. Our business may also suffer if our clients lose money and we lose the confidence of clients in our products and services.

In addition, the revenues and profits we derive from many of our trading and investment positions and our transactions in connection with them can be directly and negatively impacted by market prices. In each of the product and business lines in which we enter into these trading and investment positions, part of our business entails making assessments about the financial markets and trends in them. When we own assets, market price declines can expose us to losses. Many of the more sophisticated transactions of our Investment Bank corporate division are influenced by price movements and differences among prices. If prices move in a way we have not anticipated, we may experience losses. Also, when markets are volatile, the assessments we have made may prove to lead to lower revenues or profits, or may lead to losses, on the related transactions and positions. In addition, we commit capital and take market risk to facilitate certain capital markets transactions; doing so can result in losses as well as income volatility. Such losses may especially occur on assets we hold for which there are not very liquid markets to begin with. Assets that are not traded on stock exchanges or other public trading markets, such as derivatives contracts between banks, may have values that we calculate using models other than publicly-quoted prices. Monitoring the deterioration of prices of assets like these is difficult and could lead to losses we did not anticipate. We can also be adversely affected if general perceptions of risk cause uncertain investors to remain on the sidelines of the market, curtailing their activity and in turn reducing the levels of activity in those of our businesses dependent on transaction flow.

Additionally, the current market environment is characterized by very low interest rates, particularly in the Eurozone, including negative interest yields on German government bonds. A prolonged period of low interest rates in the Eurozone or elsewhere could materially impact our net interest margin, profitability and balance sheet deployment. While our revenues are particularly sensitive to interest rates, given the size of our loan and deposit books denominated in Euros, the low interest rates environment can also impact other balance sheet positions which are accounted at fair value. These current conditions, as well as any further easing of monetary conditions, could result in a significant impact on revenues relative to our current expectations. Actions to offset this rate impact, such as pricing changes or the introduction of additional fees, may not be sufficient to offset this impact.

Our liquidity, business activities and profitability may be adversely affected by an inability to access the debt capital markets or to sell assets during periods of market-wide or firm-specific liquidity constraints. Credit rating downgrades have contributed to an increase in our funding costs in the past, and any future downgrade could materially adversely affect our funding costs, the willingness of counterparties to continue to do business with us and significant aspects of our business model.

We have a continuous demand for liquidity to fund our business activities. Our liquidity may be impaired by an inability to access secured and/or unsecured debt markets, an inability to access funds from our subsidiaries or otherwise allocate liquidity optimally across our businesses, an inability to sell assets or redeem our investments, or unforeseen outflows of cash or collateral. This situation may arise due to circumstances unrelated to our businesses and outside our control, such as disruptions in the financial markets, or circumstances specific to us, such as reluctance of our counterparties or the market to finance our operations due to perceptions about potential outflows resulting from litigation, regulatory and similar matters, actual or perceived weaknesses in our businesses, our business model or our strategy, as well as in our resilience to counter negative economic and market conditions. For example, we have experienced steep declines in the price of our shares and increases in the spread versus government bonds at which our debt trades in the secondary markets. Reflecting these conditions, our internal estimates of our available liquidity over the duration of a stressed scenario have at times been negatively impacted in recent periods. In addition, negative developments concerning other financial institutions perceived to be comparable to us and negative views about the financial services industry in general have also affected us in recent years. These perceptions have affected the prices at which we have accessed the capital markets to obtain the necessary funding to support our business activities; should these perceptions exist, continue or worsen, our ability to obtain this financing on acceptable terms may be adversely affected. Among other things, an inability to refinance assets on our balance sheet or maintain appropriate levels of capital to protect against deteriorations in their value could force us to liquidate assets we hold at depressed prices or on unfavorable terms, and could also force us to curtail business, such as the extension of new credit. This could have an adverse effect on our business, financial condition and results of operations.

In addition, we have benefited in recent years from a number of incremental measures by the ECB and other central banks to provide additional liquidity to financial institutions and the financial markets, particularly in the Eurozone. To the extent these actions are curtailed or halted, our funding costs could increase, or our funding supply could decrease, which could in turn result in a reduction in our business activities. In particular, any decision by the ECB to discontinue or reduce quantitative easing or steps by the Federal Reserve to tighten its monetary policy or actions by central banks more generally to tighten their monetary policy will likely cause long-term interest rates to increase and accordingly impact the costs of our funding.

Rating agencies regularly review our credit ratings, which could be negatively affected by a number of factors that can change over time, including the credit rating agency’s assessment of: our strategy and management’s capability; our financial condition including in respect of profitability, asset quality, capital, funding and liquidity; the level of political support for the industries in which we operate; the implementation of structural reform; the legal and regulatory frameworks applicable to our legal structure; business activities and the rights of our creditors; changes in rating methodologies; changes in the relative size of the loss-absorbing buffers protecting bondholders and depositors; the competitive environment, political and economic conditions in our key markets (including the impact of the COVID-19 pandemic and Brexit); and market uncertainty. In addition, credit ratings agencies are increasingly taking into account environmental, social and governance factors, including climate risk, as part of the credit ratings analysis, as are investors in their investment decisions.

Any reductions in our credit ratings, including, in particular, downgrades below investment grade, or a deterioration in the capital markets’ perception of our financial resilience could significantly affect our access to money markets, reduce the size of our deposit base and trigger additional collateral or other requirements in derivatives contracts and other secured funding arrangements or the need to amend such arrangements, which could adversely affect our cost of funding and our access to capital markets and could limit the range of counterparties willing to enter into transactions with us. This could in turn adversely impact our competitive position and threaten our prospects in the short to medium-term.

Since the start of the global financial crisis, the major credit rating agencies have lowered our credit ratings or placed them on review or negative watch on multiple occasions. These credit rating downgrades have contributed to an increase in our funding costs. Our credit spread levels (meaning the difference between the yields on our securities as compared to benchmark government bonds) are sensitive to further adverse developments and any future downgrade could bring our credit rating into the non-investment grade category. This could materially and adversely affect our funding costs and significant aspects of our business model. The effect would depend on a number of factors including whether a downgrade affects financial institutions across the industry or on a regional basis, or is intended to reflect circumstances specific to us, such as our potential settlement of regulatory, litigation and similar matters; any actions our senior management may take in advance of or in response to the downgrade; the willingness of counterparties to continue to do business with us; any impact of other market events and the state of the macroeconomic environment more generally.

Additionally, under many of the contracts governing derivative instruments to which we are a party, a downgrade could require us to post additional collateral, lead to terminations of contracts with accompanying payment obligations for us or give counterparties additional remedies. We take these effects into account in our liquidity stress testing analysis, as further described in “Management Report: Risk Report: Liquidity Risk: Stress Testing and Scenario Analysis” in the Annual Report 2020.

If we are unable to implement our strategic plans successfully, we may be unable to achieve our financial objectives, or we may incur losses, including further impairments and provisions, or low profitability, and our financial condition, results of operations and share price may be materially and adversely affected.

In July 2019, we announced a strategic transformation of the Bank, designed to significantly improve sustainable returns to shareholders by refocusing our Core Bank around market leading businesses, which typically operate in growing markets with attractive return potential. Our Core Bank comprises our four core operating divisions, namely the Corporate Bank, the Investment Bank, the Private Bank, and Asset Management, together with the segment Corporate & Other. We also created the Capital Release Unit (CRU), with the principal objective to liberate capital consumed by low return assets and businesses that earn insufficient returns or activities that are no longer core to our strategy by liberating capital in an economically rational manner. The next phase of our transformation will focus on seeking to ensure sustainable profitability by growing our businesses, while remaining disciplined on costs, risk and balance sheet management and control.

Our updated key financial targets for 2022 are:

- Post-tax Return on Average Tangible Equity of 8 % for the Group
- Post-tax Return on Average Tangible Equity of more than 9 % for the Core Bank
- Adjusted costs excluding transformation charges of € 16.7 billion
- Cost income ratio of 70 %
- Common Equity Tier 1 capital ratio of above 12.5 %
- Leverage ratio (fully loaded) of ~4.5 %

Our strategic goals are subject to various internal and external factors and to market, regulatory, economic and political uncertainties, and to limitations relating to our operating model. These could negatively impact or prevent the implementation of our strategic goals or the realization of their anticipated benefits.

The COVID-19 pandemic has led to changes in the macroeconomic and fiscal environment. These changes have impacted Deutsche Bank’s operating environment, as changes to customer behavior have impacted transaction volumes and associated management of capital and risk. The current economic environment is expected to continue and to result in pressures on the bank’s capital ratios and financial performance. In particular the COVID-19 related downside risks dominated our macroeconomic business environment in 2020 and remained elevated over the year-end. Also, 2020 finished with significant GDP contraction across major economies compared to 2019. On that basis, we continue to see downside risks throughout the global economy, as ongoing regional and national lockdowns impact macro-economic activity on a global basis. Execution risks of our strategy have risen due to the prolonged macro-economic uncertainty from the impact of COVID-19.

Economic uncertainties such as the impact of the COVID-19 pandemic; the recurrence of extreme turbulence in the markets; potential weakness in global, regional and national economic conditions; the continuation of a market environment characterized by low interest rates and low volatility; increased competition for business; and political instability, especially in Europe, may impact our ability to achieve our strategic goals. Regulatory changes could also adversely impact our ability to achieve our strategic aims. In particular, regulators could demand changes to our business model or organization that could reduce our profitability, or we may be forced to make changes that reduce our profitability in an effort to remain compliant with law and regulation.

We are also involved in numerous litigation, arbitration and regulatory proceedings and investigations in Germany and in a number of jurisdictions outside of Germany, especially in the United States. Such matters are subject to many uncertainties. We expect the litigation environment to continue to be challenging. If litigation and regulatory matters occur at the same or higher rate and magnitude than they have in some recent years or if we are subject to sustained market speculation about our potential exposure to such matters, we may not be able to achieve our strategic aspirations.

Our strategic objectives are also subject to the following assumptions and risks:

- The base case scenario for our financial and capital plan includes revenue growth estimates which are dependent on positive macroeconomic developments. Stagnation or a downturn in the macroeconomic environment could significantly impact our ability to generate the revenue growth necessary to achieve these strategic financial and capital targets. This scenario also includes assumptions regarding our ability to reduce costs in future periods.

- The current COVID-19 pandemic and its potential impact on the global economy may affect our ability to meet our financial targets. We may be materially adversely affected by a protracted downturn in local, regional or global economic conditions. In that situation, we would need to take action to ensure we meet our minimum capital objectives. These actions or measures may result in adverse effects on our business, results of operations or strategic plans and targets, and the prices of our securities.
- The ability of all our divisions to perform is dependent on their ability to offset the expected continuation of interest rate headwinds, negative impacts from the COVID-19 pandemic and industry-wide margin compression.
- Results for the Investment Bank in 2020 were supported by high levels of market activity in investment banking as an industry. The ability of the Investment Bank to continue its performance is dependent on the continuation of high levels of market activity.
- Provisions for credit losses increased to 41 basis points as a percentage of average loans for the full year 2020, impacted by the COVID-19 pandemic and its effect on our Expected Credit Loss (ECL) estimate, and we expect these factors to continue in 2021. For 2022, we expect provisions for credit losses of between 25 to 30 basis points as a percentage of average loans, as the economy recovers and provision levels normalize. Should higher levels of provisions for credit losses be required, our results of operations and our ability to meet our strategic financial and capital targets may be adversely affected.
- We expect that we will be able to overcome significant challenges arising from our business model. We continue to rely on our trading and markets businesses as a significant source of profit. Depending on how economic and market conditions evolve, such businesses may be adversely impacted or be unable to achieve the profitability we seek from them.
- Asset and client levels have been impacted by the negative market perceptions of Deutsche Bank from time to time. A continued or renewed negative market focus on Deutsche Bank could result in new client and asset outflows.
- We seek to achieve further savings from central and divisional measures, some of these as response to COVID-19, for example from an examination of our real estate footprint and lower travel costs. Such savings may not be able to be achieved.
- The COVID-19 pandemic reduced the rate of regular employee attrition by around 30% versus historical levels, creating a more challenging context to the Group headcount and cost targets and increasing the cost of involuntary severance arrangements. This also limited the opportunity to redeploy talented employees within the bank whose roles were made redundant.
- Despite the overall lower attrition rate, we may also face difficulties attracting and retaining talented personnel, particularly in front-office positions that are key to revenue generation and in positions key to improving our control environment. Requests from regulators to demonstrate moderation in the levels of compensation that we can offer may put the Group at a disadvantage in attracting and retaining talented employees. Our traditional competitors such as other universal banks and financial services firms and an emerging group of future competitors in the form of start-ups and technology firms, including those providing “fintech” services, are also potential competitors of ours in attracting and retaining talented personnel.
- We currently operate a highly complex infrastructure, which can compromise the quality of the overall control environment. Establishing a more efficient bank with a strong control environment depends on successfully streamlining and simplifying our IT landscape as well as cultural change.
- A robust and effective internal control environment is necessary to ensure that we conduct our business in compliance with the laws and regulations applicable to us. We may be unable to complete our initiatives to enhance the efficacy of our internal control environment as quickly as we intend or as our regulators demand, and our efforts may be insufficient to prevent all future deficiencies in our control environment or to result in fewer litigations or regulatory and enforcement investigations and proceedings in the future. Furthermore, implementation of enhanced controls may result in higher than expected costs of regulatory compliance that could offset efficiency gains.
- We expect that de-leveraging of CRU will continue, while reducing cost. BNP Paribas and Deutsche Bank have signed a master transaction agreement to provide continuity of service to Deutsche Bank’s Prime Finance and Electronic Equities clients. Under the agreement Deutsche Bank will continue to operate the platform until clients can be migrated to BNP Paribas. For the remainder of the CRU assets, we will take opportunities to accelerate the wind down, where it is economically rational. In the event that the CRU is not able to de-leverage or reduced costs as planned, or if issues arise that interfere with our agreement with BNP Paribas, our objectives could be jeopardized.

If we fail to implement our strategic initiatives in whole or in part or should the initiatives that are implemented fail to produce the anticipated benefits, or should the costs we incur to implement our initiatives exceed the amounts anticipated, or should we fail to achieve the publicly communicated targets we have set for implementation of these initiatives, we may fail to achieve our financial objectives, or incur losses or low profitability or erosions of our capital base, and our financial condition, results of operations and share price may be materially and adversely affected.

We may have difficulties selling companies, businesses or assets at favorable prices or at all and may experience material losses from these assets and other investments irrespective of market developments.

We seek to sell or otherwise reduce our exposure to assets that are not part of our core business or as part of our strategy to simplify and focus our business and to meet or exceed capital and leverage requirements, as well as to help us meet our return on tangible equity target. This may prove difficult in the current and future market environment as many of our competitors are also seeking to dispose of assets to improve their capital and leverage ratios and returns on equity. We have already sold a substantial portion of our non-core assets, and our remaining non-core assets may be particularly difficult for us to sell as quickly as we have expected at prices we deem acceptable. Where we sell companies or businesses, we may remain exposed to certain of their losses or risks under the terms of the sale contracts, and the process of separating and selling such companies or businesses may give rise to operating risks or other losses. Unfavorable business or market conditions may make it difficult for us to sell companies, businesses or assets at favorable prices, or may preclude a sale altogether. If we cannot reduce our assets according to plan, we may not be able to achieve the capital targets set out under our strategy.

We may have difficulty in identifying and executing business combinations, and both engaging in combinations and avoiding them could materially harm our results of operations and our share price.

We consider business combinations from time to time. Were we to announce or complete a significant business combination transaction, our share price or the share price of the combined entity could decline significantly if investors viewed the transaction as too costly, dilutive to existing shareholders or unlikely to improve our competitive position. It is generally not feasible for our reviews of any business with which we might engage in a combination to be complete in all respects. As a result, a combination may not perform as well as expected. In addition, we may fail to integrate our operations successfully with any entity with which we participate in a business combination. Failure to complete announced business combinations or failure to achieve the expected benefits of any such combination could materially and adversely affect our profitability. Such failures could also affect investors’ perception of our business prospects and management, and thus cause our share price to fall. They could also lead to departures of key employees, or lead to increased costs and reduced profitability if we felt compelled to offer them financial incentives to remain.

If we avoid entering into business combination transactions or if announced or expected transactions fail to materialize, market participants may perceive us negatively. We may also be unable to expand our businesses, especially into new business areas, as quickly or successfully as our competitors if we do so through organic growth alone. These perceptions and limitations could cost us business and harm our reputation, which could have material adverse effects on our financial condition, results of operations and liquidity.

Intense competition, in our home market of Germany as well as in international markets, has and could continue to materially adversely impact our revenues and profitability.

Competition is intense in all of our primary business areas, in Germany as well as in international markets. If we are unable to respond to the competitive environment in these markets with attractive product and service offerings that are profitable for us, we may lose market share in important areas of our business or incur losses on some or all of our activities. In addition, downturns in the economies of these markets could add to the competitive pressure, through, for example, increased price pressure and lower business volumes for us.

There has been substantial consolidation and convergence among financial services companies. This trend has significantly increased the capital base and geographic reach of some of our competitors and has hastened the globalization of the securities and other financial services markets. As a result, we must compete with financial institutions that may be larger and better capitalized than we are and that may have a stronger position in local markets.

In addition to our traditional competitors such as other universal banks and financial services firms, an emerging group of future competitors in the form of start-ups and technology firms, including those providing “fintech” services, are showing an increasing interest in banking services and products. These new competitors could increase competition in both core products, e.g., payments, basic accounts and loans and investment advisory, as well as in new products, e.g., peer to peer lending and equity crowd funding. Such firms are also potential competitors of ours in attracting and retaining talented personnel.

Risks Relating to Regulation and Supervision

Regulatory reforms enacted and proposed in response to weaknesses in the financial sector, together with increased regulatory scrutiny more generally, have had and continue to have a significant impact on us and may adversely affect our business and ability to execute our strategic plans. Competent regulators may prohibit us from making dividend payments or payments on our regulatory capital instruments or take other actions if we fail to comply with regulatory requirements.

In response to the global financial crisis and the European sovereign debt crisis, governments and regulatory authorities have worked to enhance the resilience of the financial services industry against future crises through changes to the regulatory framework. The pace of change of new proposals has slowed as the focus turns more to implementation of the various elements of the regulatory reform agenda outlined by the Basel Committee on Banking Supervision ("Basel Committee") and other standard-setting bodies. As a result, there continues to be uncertainty for us and the financial industry in general, though the level of uncertainty is reduced from prior periods. The range of new (or revised) laws and regulations or current proposals includes, among other things:

- provisions for more stringent regulatory capital, leverage and liquidity standards,
- restrictions on compensation practices,
- restrictions on proprietary trading and other investment services;
- special bank levies and financial transaction taxes,
- recovery and resolution powers to intervene in a crisis including the "bail-in" of creditors;
- tightened large exposure limits;
- the creation of a single supervisory authority and a single resolution authority within the Eurozone and any other participating member states,
- separation of certain businesses from deposit taking,
- stress testing and capital planning regimes,
- heightened reporting requirements, and
- reforms of derivatives, other financial instruments, investment products and market infrastructures.

As a core element of the reform of the regulatory framework, in December 2010, the Basel Committee published a set of comprehensive changes to minimum capital adequacy and liquidity standards, known as Basel 3, which have been implemented into European and national (in our case, German) law beginning in 2014, with the European legislative package also referred to as "CRR/CRD 4" and the Bank Recovery and Resolution Directive (or "BRRD").

On June 27, 2019, a comprehensive package of reforms (referred to in the following as the "banking reform package") to further strengthen the resilience of European Union banks entered into force. The banking reform package includes amendments to the existing regulation on prudential requirements for credit institutions and investment firms, also referred to as the Capital Requirements Regulation ("CRR"), the directive on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, also referred to as the Capital Requirements Directive ("CRD"), the European Union's Regulation establishing Uniform Rules and a Uniform Procedure for the Resolution of Credit Institutions and certain Investment Firms in the Framework of a Single Resolution Mechanism and a Single Resolution Fund (the "SRM Regulation"), and the BRRD. In Germany, the amendments introduced by the banking reform package to the BRRD and the CRD have been implemented into German law by the Risk Reduction Act (*Risikoreduzierungsgesetz*).

The adopted changes incorporate various remaining elements of the regulatory framework agreed within the Basel Committee and the Financial Stability Board ("FSB") to refine and supplement the global regulatory framework established by the Basel Committee, the so-called Basel Accords (Basel 1, 2 and 3). This includes more risk-sensitive capital requirements, in particular in the area of counterparty credit risk and for exposures to central counterparties, methodologies that reflect more accurately the actual risks to which banks may be exposed, a binding leverage ratio, a binding net stable funding ratio, tighter regulation of large exposures, new reporting requirements for market risk that may be supplemented at a later stage by own funds requirements, and a requirement for global systemically important institutions ("G-SIIs"), such as Deutsche Bank, to hold certain minimum levels of capital and other instruments which are capable of bearing losses in resolution ("Total Loss-Absorbing Capacity" or "TLAC"). Other measures are aimed at improving banks' lending capacity to support the European Union economy and at further facilitating the role of banks in achieving deeper and more liquid European Union capital markets. While many provisions take effect in 2021, certain parts, including the TLAC requirements, already apply since June 27, 2019.

In response to the COVID-19 pandemic the European Union adopted a new regulation containing tailored adjustments to the CRR including the amendments contained in the banking reform package (the "CRR Quick Fix"). The CRR Quick Fix entered into force on June 27, 2020, and primarily aims to facilitate lending by banks as a response to the pandemic.

In addition, regulatory scrutiny of compliance with existing laws and regulations has become more intense and supervisory expectations remain significant. The specific effects of a number of new (or revised) laws and regulations remain uncertain because the drafting and implementation of these laws and regulations are still on-going and supervisory expectations continue to develop.

At the international level, in December 2017, the Basel Committee published its final agreement ("December 2017 Agreement") on further revisions to the Basel 3 framework that aim to increase consistency in risk weighted asset calculations and improve the comparability of banks' capital ratios. The December 2017 Agreement includes, among other things, changes to the standardized and internal ratings-based approaches for determining credit risk, revisions to the operational risk framework, and an "output floor", set at 72.5 %. The "output floor" limits the amount of capital benefit a bank can obtain from its use of internal models relative to using the standardized approach. This package of reforms is intended to finalize the Basel 3 framework and would reduce the ability of banks to apply internal models, while making the standardized approaches more risk-sensitive and granular. In addition, the December 2017 Agreement introduces a leverage ratio buffer for global systemically important banks ("G-SIBs"), such as Deutsche Bank, to be met with Tier 1 capital and sets it at 50 % of the applicable risk-based G-SIB buffer requirement, which was included in the adopted banking reform package. Due to COVID-19, the Basel Committee deferred the implementation date for the changes in the December 2017 Agreement to January 1, 2023, with a phase-in period of five years through January 1, 2028 for the output floor.

The EU is planning to implement this reform with a legislative proposal package, expected to be issued in mid-2021 (revision of the Capital Requirements Regulation or CRR III). In addition, on January 14, 2019 the Basel Committee also reached an agreement ("January 2019 Agreement") on reforms to the market risk framework, known as the Fundamental Review of the Trading Book ("FRTB"). The main features of the final standard include an internal models approach to determine the risk weight of exposures that relies on the use of expected shortfall models. The standard sets out separate capital requirements for risks that are deemed non-modellable and includes a more risk-sensitive standardized approach as a fallback to the internal models approach. CRR II (as part of the banking reform package) has introduced specific reporting requirements for market risk based on the revised framework as the first step in the application of the FRTB by EU institutions, and empowers the Commission to propose further regulations to establish own funds requirements for market risk based on the FRTB.

The banking reform package will likely affect our business by raising our regulatory capital and liquidity requirements and by leading to increased costs. The implementation of the remaining outstanding proposals under Basel 3 as contained in the December 2017 Agreement and in the January 2019 Agreement could also affect our business by imposing higher capital charges when adopted into law.

These requirements may be in addition to regulatory capital buffers that may also be increased or be in addition to those already imposed on us and could themselves materially increase our capital requirements.

Regulatory authorities have substantial discretion in how to regulate banks, and this discretion, and the means available to the regulators, have been steadily increasing during recent years. Regulation may be imposed on an ad hoc basis by governments and regulators in response to ongoing or future crises (such as the COVID-19 pandemic), and may especially affect financial institutions such as Deutsche Bank that are deemed to be systemically important.

In particular, the regulators with jurisdiction over us, including the ECB under the Single Supervisory Mechanism (also referred to as the "SSM"), may, in connection with the supervisory review and evaluation process ("SREP"), SSM-wide reviews of asset quality or internal risk models or otherwise, conduct stress tests. They have discretion to impose capital surcharges on financial institutions for risks, including for litigation, regulatory and similar matters, that are not otherwise recognized in risk weighted assets or other surcharges depending on the individual situation of the bank and take or require other measures, such as restrictions on or changes to our business. In this context, the ECB may impose, and has imposed, on us individual capital requirements resulting from the SREP which are referred to as "Pillar 2" requirements. Institutions must meet their Pillar 2 requirements with at least 75 % of Tier 1 capital and at least 56.25 % of Common Equity Tier 1 capital. Pillar 2 requirements must be fulfilled in addition to the statutory minimum capital and buffer requirements and any non-compliance may have immediate legal consequences such as restrictions on dividend payments.

Also following the SREP, the ECB may communicate to individual banks, and has communicated to us, an expectation to hold a further Pillar 2 Common Equity Tier 1 capital add-on, the so-called Pillar 2 guidance. Although the Pillar 2 guidance is not legally binding and failure to meet the Pillar 2 guidance does not automatically trigger legal action, the ECB has stated that it generally expects banks to meet the Pillar 2 guidance. In light of the COVID-19 pandemic, the ECB allows banks to operate temporarily below the level of capital defined by the Pillar 2 guidance until at least the end of 2022.

Also, more generally, competent regulators may, if we fail to comply with regulatory requirements, in particular with statutory minimum capital requirements or Pillar 2 requirements, or if there are shortcomings in our governance and risk management processes, prohibit us from making dividend payments to shareholders or distributions to holders of our other regulatory capital instruments. This could occur, for example, if we fail to make sufficient profits due to declining revenues, or as a result of substantial outflows due to litigation, regulatory and similar matters. Generally, a failure to comply with the quantitative and qualitative regulatory requirements could have a material adverse effect on our business, financial condition and results of operations, including our ability to pay out dividends to shareholders or distributions on our other regulatory capital instruments or, in certain circumstances, conduct business which we currently conduct or plan to conduct in the future.

Regulatory and legislative changes require us to maintain increased capital and bail-inable debt (debt that can be bailed in in resolution) and abide by tightened liquidity requirements. These requirements may significantly affect our business model, financial condition and results of operations as well as the competitive environment generally. Any perceptions in the market that we may be unable to meet our capital or liquidity requirements with an adequate buffer, or that we should maintain capital or liquidity in excess of these requirements or another failure to meet these requirements could intensify the effect of these factors on our business and results.

The implementation of the CRR/CRD 4 legislative package resulted, among other things, in increased capital and tightened liquidity requirements, including additional capital buffer requirements which were gradually phased in through January 1, 2019. Further revisions, such as stricter rules on the measurement of risks and the changes introduced by the banking reform package, the December 2017 Agreement and the January 2019 Agreement, increased risk weighted assets and the corresponding capital demand for banks, as well as tightened liquidity requirements (such as the introduction of a binding Net Stable Funding Ratio). In addition, the introduction of a binding leverage ratio (including the deferred leverage ratio buffer) by the banking reform package may affect our business model, financial conditions and results of operations.

Furthermore, under the SRM Regulation, the BRRD and the German Recovery and Resolution Act (*Sanierungs- und Abwicklungsgesetz*), we are required to meet at all times a robust minimum requirement for own funds and eligible liabilities ("MREL") which is determined on a case-by-case basis by the competent resolution authority. In addition, the banking reform package implemented the FSB's TLAC standard for G-SIBs (such as us) by introducing a new Pillar 1 MREL requirement for G-SIIs (the European equivalent term for G-SIBs). This new requirement is based on both risk-based and non-risk-based denominators and will be set at the higher of 18 % of total risk exposure and 6.75 % of the leverage ratio exposure measure following a transition period (until December 31, 2021, 16 % of total risk exposure and 6 % of the leverage ratio exposure measure). It can be met with Tier 1 or Tier 2 capital instruments or debt that meets specific eligibility criteria. Deduction rules apply for holdings by G-SIIs of TLAC instruments of other G-SIIs. In addition, the competent authorities have the ability to impose on G-SIIs individual MREL requirements that exceed the statutory minimum requirements.

Both the TLAC (or Pillar 1 MREL) and MREL requirements are specifically designed to require banks to maintain a sufficient amount of instruments which are eligible to absorb losses in resolution with the aim of ensuring that failing banks can be resolved without recourse to taxpayers' money. To that end, in order to facilitate the meeting of TLAC requirements by German banks, obligations of German banks under certain specifically defined senior unsecured debt instruments issued by them (such as bonds that are not structured debt instruments) rank, since 2017, junior to all other outstanding unsecured unsubordinated obligations of such bank (such as deposits, derivatives, money market instruments and certain structured debt instruments), but continue to rank in priority to contractually subordinated debt instruments (such as Tier 2 instruments).

As part of the harmonization of national rules on the priority of claims of banks' creditors in the European Union, the BRRD now allows banks to issue "senior non-preferred" debt instruments ranking according to their terms (and not only statutorily) junior to the bank's other unsubordinated debt instruments (including bonds that are not treated as "senior non-preferred" debt instruments), but in priority to the bank's contractually subordinated liabilities (such as Tier 2 instruments). Any such "senior non-preferred" debt instruments issued by Deutsche Bank AG under such rules rank on parity with its then outstanding "senior non-preferred" debt instruments under the prior rules. This BRRD amendment was finalized and implemented into German law as of July 21, 2018.

The need to comply with these requirements may affect our business, financial condition and results of operation and in particular may increase our financing costs.

We may not have sufficient capital or other loss-absorbing liabilities to meet these increasing regulatory requirements. This could occur due to regulatory changes and other factors, such as the gradual phase out of our hybrid capital instruments qualifying as Additional Tier 1 (or AT1) capital or our inability to issue new securities which are recognized as regulatory capital or loss-absorbing liabilities under the new standards, due to an increase of risk weighted assets based on more stringent rules for the measurement of risks or as a result of a future decline in the value of the euro as compared to other currencies, due to stricter requirements for the compliance with the non-risk based leverage ratio, due to any substantial losses we may incur, which would reduce our retained earnings, a component of Common Equity Tier 1 capital, or due to a combination of these or other factors.

If we are unable to maintain sufficient capital to meet the applicable minimum capital ratios, the buffer requirements, any specific Pillar 2 capital requirements, leverage ratio requirements, or TLAC or MREL requirements, we may become subject to enforcement actions and/or restrictions on the pay-out of dividends, share buybacks, payments on our other regulatory capital instruments, and discretionary compensation payments. In addition, any requirement to increase risk-based capital ratios or the leverage ratio could lead us to adopt a strategy focusing on capital preservation and creation over revenue generation and profit growth, including the reduction of higher margin risk weighted assets. If we are unable to increase our capital ratios to the regulatory minimum in such a case or by raising new capital through the capital markets, through the reduction of risk weighted assets or through other means, we may be required to activate our group recovery plan. If these actions or other private or supervisory actions do not restore capital ratios to the required levels, and we are deemed to be failing or likely to fail, competent authorities may apply resolution powers under the Single Resolution Mechanism ("SRM") and applicable rules and regulations, which could lead to a significant dilution of our shareholders' or even the total loss of our shareholders' or creditors' investment.

The CRR introduced a new liquidity coverage requirement intended to ensure that banks have an adequate stock of unencumbered high quality liquid assets that can be easily and quickly converted into cash to meet their liquidity needs for a 30 calendar day liquidity stress scenario. The required liquidity coverage ratio ("LCR") is calculated as the ratio of a bank's liquidity buffer to its net liquidity outflows. Also, banks must regularly report the composition of the liquid assets in their liquidity buffer to their competent authorities.

In addition, the banking reform package introduced a net stable funding ratio ("NSFR") to reduce medium- to long-term funding risks by requiring banks to fund their activities with sufficiently stable sources of funding over a one-year period. The NSFR, which will apply from June 28, 2021 onwards, is defined as the ratio of a bank's available stable funding relative to the amount of required stable funding over a one-year period. Banks must maintain an NSFR of at least 100 %.The ECB may impose on individual banks liquidity requirements which are more stringent than the general statutory requirements if the bank's continuous liquidity would otherwise not be ensured. The NSFR will apply to both the Group as a whole and to individual SSM regulated entities, including the parent entity Deutsche Bank AG. Upon the introduction of the ratio as a binding minimum requirement, we expect both the Group and its subsidiaries for which it applies to be above the regulatory minimum. To achieve this for Deutsche Bank AG, the company is actively working on a number of structural initiatives to improve the standalone NSFR position. In the event these initiatives are not successfully completed by June 2021, Deutsche Bank AG may incur additional costs.

If we fail to meet liquidity requirements, we may become subject to enforcement actions. In addition, any requirement to maintain or increase liquidity could lead us to reduce activities that pursue revenue generation and profit growth.

On January 29, 2021, the European Banking Authority and ECB launched the 2021 EU-wide stress test, designed to assess the impact of an adverse macroeconomic scenario on the solvency of EU banks, releasing at the same time the macroeconomic scenarios for the test. By its standard procedures, the ECB will consider our quantitative performance in the adverse scenario as an input when reconsidering the level of the Pillar 2 guidance in its 2021 SREP assessment and our qualitative performance as one aspect when holistically reviewing the Pillar 2 requirement. As can be seen from the published adverse macro-economic scenario and market shock, the banking sector will be tested against the most severe scenario of all European regulatory stress tests conducted so far.

In some cases, we are required to hold and calculate capital and to comply with rules on liquidity and risk management separately for our local operations in different jurisdictions, in particular in the United States.

We are required to hold and calculate capital and to comply with rules on liquidity and risk management separately for our local operations in different jurisdictions. In the United States, the Federal Reserve Board has adopted rules that impose enhanced prudential standards on our U.S. operations. In February 2014, the Federal Reserve Board adopted rules that set forth how the U.S. operations of certain foreign banking organizations ("FBOs"), such as Deutsche Bank, are required to be structured in the United States, as well as the enhanced prudential standards that apply to our U.S. operations. Under these rules, as of July 1, 2016, a large FBO with U.S.$ 50 billion or more in U.S. non-branch assets, such as Deutsche Bank, was required to establish or designate a separately capitalized top-tier U.S. intermediate holding company (an "IHC") that would hold substantially all of the FBO's ownership interests in its U.S. subsidiaries. The Federal Reserve Board may permit an FBO subject to the U.S. IHC requirement to establish or designate multiple U.S. IHCs upon written request. On July 1, 2016, we designated DB USA Corporation as our IHC. In March 2018, we completed the partial initial public offering of our Asset Management division, to form DWS Group GmbH & Co. KGaA ("DWS"), in which we retain approximately 80 % of the shares. In April 2018, DWS USA Corporation was formed as a subsidiary of DWS, and, following receipt of Federal Reserve Board approval, we designated it as our second IHC, through which our U.S. asset management subsidiaries are held. As of the date of designation or formation of each of these IHCs, they each became subject, on a consolidated basis, to the risk-based and leverage capital requirements under the U.S. Basel 3 capital framework, capital planning and stress testing requirements (on a phased-in basis), U.S. liquidity buffer requirements and other enhanced prudential standards comparable to those applicable to top-tier U.S. bank holding companies other than the U.S. G-SIB firms of a similar size as DB USA Corporation. Supplementary leverage ratio ("SLR") requirements applicable to DB USA Corporation took effect beginning in January 2018

and were applicable to DWS USA Corporation upon its formation. In response to the COVID-19 pandemic, the Federal Reserve Board issued a final rule adopting a temporary change to the calculation of the SLR that permits IHCs to exclude U.S. Treasury securities and deposits at Federal Reserve Banks from the denominator of their SLR. This change, which took effect April 1, 2020, will remain in place until at least March 31, 2021. The Federal Reserve Board has the authority to examine an IHC, such as DB USA Corporation and DWS USA Corporation, and its subsidiaries, as well as U.S. branches and agencies of FBOs, such as our New York branch.

On October 10, 2019, the Federal Reserve Board finalized rules to categorize the U.S. operations of large FBOs based on size, complexity and risk for purposes of tailoring the application of the U.S. enhanced prudential standards (the "Tailoring Rules"). The Tailoring Rules do not significantly change the capital requirements that apply to DB USA Corporation or DWS USA Corporation although they provide the option to comply with certain simplifications to the capital requirements. However, the Tailoring Rules provide modest relief for our U.S. IHCs with respect to applicable liquidity requirements so long as our IHCs' combined weighted short term wholesale funding remains below U.S.$ 75 billion.

As a bank holding company with assets of U.S.$ 250 billion or more, Deutsche Bank AG is required under Title I of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, as amended (the "Dodd-Frank Act"), and the implementing regulations thereunder to prepare and submit to the Federal Reserve Board and the Federal Deposit Insurance Corporation ("FDIC") either a full or targeted resolution plan (the "U.S. Resolution Plan") on a timeline prescribed by such agencies. The U.S. Resolution Plan must demonstrate that Deutsche Bank AG has the ability to execute a strategy for the orderly resolution of its designated U.S. material entities and operations. For foreign-based companies subject to these resolution planning requirements such as Deutsche Bank AG, the U.S. Resolution Plan relates only to subsidiaries, branches, agencies and businesses that are domiciled in or whose activities are carried out in whole or in material part in the United States. Deutsche Bank AG filed its U.S. Resolution Plan by July 1, 2018. The 2018 U.S. Resolution Plan describes the single point of entry strategy for Deutsche Bank's U.S. material entities and operations and prescribes that DB USA Corporation, our single U.S. IHC as of December 31, 2017, would provide liquidity and capital support to its U.S. material entity subsidiaries and ensure their solvent wind-down outside of applicable resolution proceedings. Deutsche Bank received feedback from the Federal Reserve and FDIC in December 2018. The Federal Reserve Board and FDIC found that Deutsche Bank's U.S. Resolution Plan had no deficiencies but identified one shortcoming in the plan, associated with governance mechanisms and related escalation triggers. Deutsche Bank submitted a response to its December 2018 feedback letter on April 1, 2019. Deutsche Bank's response discussed its proposed remediation of the shortcoming as well as enhancements of its resolution capabilities.

Deutsche Bank submitted its 2020 U.S. Resolution Plan on September 29, 2020. The 2020 U.S. Resolution Plan, like the 2018 U.S. Resolution Plan, described a single point of entry strategy for DB USA Corporation. It also explained how Deutsche Bank remediated the shortcoming and provided an update on the enhancement of its resolutions capabilities. On December 9, 2020, the Federal Reserve Board and FDIC confirmed that the shortcoming previously identified in Deutsche Bank AG's 2018 U.S. Resolution Plan had been remediated. Also on December 9, 2020, the agencies finalized guidance for the resolution plans of certain large foreign banks, including Deutsche Bank AG. In that guidance, the agencies tailored their expectations around resolution capital and liquidity, derivatives and trading activity, as well as payment, clearing, and settlement activities. The agencies also provided information for large banks, including Deutsche Bank AG, which will inform the content of their next U.S. Resolution Plans, which now are due December 17, 2021. In particular, these 'targeted' plans (which are subsets of a full resolution plans) will be required to include core elements of a firm's resolution strategy — such as capital, liquidity, and recapitalization strategies — as well as how each firm has integrated changes to and lessons learned from its response to the COVID-19 pandemic into its resolution planning process. If the Federal Reserve Board and the FDIC were to jointly deem Deutsche Bank's U.S. Resolution Plan not credible and Deutsche Bank failed to remediate any deficiencies in the required timeframe prescribed by the Federal Reserve Board and FDIC, these agencies could impose restrictions on Deutsche Bank or require the restructuring or reorganization of businesses, legal entities, operational systems and/or intra-company transactions which could negatively impact our operations and/or strategy. Additionally, the Federal Reserve Board and FDIC could also subject Deutsche Bank to more stringent capital, leverage or liquidity requirements, or require Deutsche Bank to divest certain assets or operations.

Both DB USA Corporation and DWS USA Corporation were subject to the Federal Reserve Board's Comprehensive Capital Analysis and Review ("CCAR") for 2020. On June 25, 2020, the Federal Reserve Board publicly indicated that it did not object to the 2019 capital plans submitted by DB USA Corporation and DWS USA Corporation. In June 2020, the Federal Reserve Board also publicly disclosed aggregated results of a sensitivity analysis aimed at gauging the ongoing economic impact of the COVID-19 outbreak on CCAR firms. Each CCAR firm was required to resubmit its capital plan in November 2020 based on additional economic scenarios provided by the Federal Reserve Board to assess the potential impact of the ongoing COVID-19 outbreak. DB USA Corporation and DWS USA Corporation will make their next capital plan submissions to the Federal Reserve Board in April 2021. If the Federal Reserve Board were to object to these capital plans we could be required to increase capital or restructure businesses in ways that may negatively impact our operations and strategy or could be subject to restrictions on growth in the United States.

On March 4, 2020, the Federal Reserve Board issued a rule to amend its CCAR process to combine the CCAR quantitative assessment and the buffer requirements in the Federal Reserve Board's capital rules to create an integrated capital buffer requirement. This final rule has eliminated the quantitative and qualitative 'pass/fail' assessments from CCAR and modifies the static capital conservation buffer to incorporate an institution-specific stress capital buffer (SCB), which is floored at 2.5%. The stress capital buffer equals (i) a bank holding company's projected peak-to-trough decline in common equity tier 1 under the annual CCAR supervisory severely adverse stress testing scenario prior to any planned capital actions, plus (ii) one year of planned common stock dividends. The stress capital buffer will be reset each year. On August 10, 2020, the Federal Reserve Board announced an SCB for each CCAR firm based on 2020 supervisory stress testing results conducted as part of CCAR, which for DB USA Corporation was 7.8% and for DWS USA Corporation was 2.5%. The first SCB became effective October 1, 2020 and would generally remain in effect until September 30, 2021, at which point the size of the SCB for each bank will be recalibrated based on the results of the 2021 stress tests. On December 18, 2020, the Federal Reserve Board released certain information related to this second round of bank stress tests, and indicated that it is extending, through March 31, 2021, the time period for notifying CCAR firms whether the Federal Reserve Board will recalculate a firm's SCB. The Federal Reserve Board also announced it is limiting CCAR firms' distributions in the first quarter of 2021. Under these restrictions, IHCs, such as DB USA Corporation and DWS USA Corporation, may make certain capital distributions in the first quarter of 2021, provided that the distributions paid in the final three quarters of 2020 and the first quarter of 2021, in the aggregate, do not exceed the amount of net income the IHC has earned in the preceding four calendar quarters.

The U.S. federal bank regulators in 2013 issued final rules implementing elements of the Basel 3 capital adequacy framework that are applicable to U.S. banking organizations.

In September 2014, the Federal Reserve Board and other U.S. regulators approved a final rule implementing liquidity coverage ratio ("LCR") requirements for large U.S. bank holding companies and certain of their subsidiary depositary institutions that are generally consistent with the Basel Committee's revised Basel 3 liquidity standards. DB USA Corporation and our principal U.S. bank subsidiary, Deutsche Bank Trust Company Americas ("DBTCA"), became subject to the full LCR requirements on April 1, 2017 and DWS USA Corporation became subject to LCR requirements on a phased-in basis upon its formation in April 2018. The Tailoring Rules reduced the LCR requirements applicable to DB USA Corporation, DWS USA Corporation and DBTCA from 100 to 85 percent beginning on January 1, 2020.

On October 20, 2020, the Federal Reserve Board and other U.S. regulators finalized rules implementing the second element of the Basel 3 liquidity framework, the net stable funding ratio ("NSFR"). Under the Tailoring Rules, DB USA Corporation, DWS USA Corporation and DBTCA would be subject to an 85 percent NSFR so long as our IHCs' combined weighted short term wholesale funding remains below U.S.$ 75 billion. Firms will be required to calculate the NSFR and meet the minimum required ratios by July 1, 2021 with public reporting beginning in 2023.

On December 15, 2016, the Federal Reserve Board adopted final rules that implement the FSB's TLAC standard in the United States. The final rules require, among other things, U.S. IHCs of non-U.S. G-SIBs, including our IHCs, DB USA Corporation and DWS USA Corporation, to maintain a minimum amount of TLAC, and separately require them to maintain a minimum amount of long-term debt meeting certain requirements.

U.S. rules and interpretations, including those described above, could cause us to reduce assets held in the United States, inject capital and/or liquidity into or otherwise change the structure of our U.S. operations, and could also restrict the ability of our U.S. subsidiaries to pay dividends to us or the amount of such dividends. To the extent that we are required to reduce operations in the United States or deploy capital or liquidity in the United States that could be deployed more profitably elsewhere, these requirements could have an adverse effect on our business, financial condition and results of operations.

Any increased capital or liquidity requirements, including those described above, could have adverse effects on our business, financial condition and results of operations, as well as on perceptions in the market of our stability, particularly if any such requirement and results in our having to raise capital at a time when we or the financial markets are distressed, or take other measures to increase liquidity in certain jurisdictions due to local requirements. The measures we might be required or find necessary to take in response to these shifting local requirements may be inconsistent with, and hinder the achievement of our strategic goals. In addition, if these regulatory requirements must be implemented more quickly than currently foreseen, we may decide that the quickest and most reliable path to compliance is to reduce the level of assets on our balance sheet, dispose of assets or otherwise segregate certain activities or reduce or close down certain business lines. The effects on our capital raising efforts in such a case could be amplified due to the expectation that our competitors, at least those subject to the same or similar capital requirements, would likely also be required to raise capital at the same time. Moreover, some of our competitors, particularly those outside the European Union, may not face the same or similar regulations, which could put us at a competitive disadvantage.

In addition to these regulatory initiatives, market sentiment may encourage financial institutions such as Deutsche Bank to maintain significantly more capital, liquidity and loss-absorbing capital instruments than the regulatory-mandated minima, which could exacerbate the effects on us described above or, if we do not increase our capital to the encouraged levels, could lead to the perception in the market that we are undercapitalized relative to our peers generally.

It is unclear whether the U.S. capital and other requirements described above, as well as similar developments in other jurisdictions could lead to a fragmentation of supervision of global banks that could adversely affect our reliance on regulatory waivers allowing us to meet capital adequacy requirements, large exposure limits and certain organizational requirements on a consolidated basis only rather than on both a consolidated and non-consolidated basis. Should we no longer be entitled to rely on these waivers, we would have to adapt and take the steps necessary in order to meet regulatory capital requirements and other requirements on a consolidated as well as a non-consolidated basis, which could result also in significantly higher costs and potential adverse effects on our profitability and dividend paying ability.

Our regulatory capital and liquidity ratios and our funds available for distributions on our shares or regulatory capital instruments will be affected by our business decisions and, in making such decisions, our interests and those of the holders of such instruments may not be aligned, and we may make decisions in accordance with applicable law and the terms of the relevant instruments that result in no or lower payments being made on our shares or regulatory capital instruments.

Our regulatory capital and liquidity ratios are affected by a number of factors, including decisions we make relating to our businesses and operations as well as the management of our capital position, of our risk weighted assets and of our balance sheet in general, and external factors, such as regulations regarding the risk weightings we are permitted to allocate to our assets, commercial and market risks or the costs of our legal or regulatory proceedings. While we and our management are required to take into account a broad range of considerations in our and their managerial decisions, including the interests of the Bank as a regulated institution and those of our shareholders and creditors, particularly in times of weak earnings and increasing capital requirements, the regulatory requirements to build capital and liquidity may become paramount. Accordingly, in making decisions in respect of our capital and liquidity management, we are not required to adhere to the interests of the holders of instruments we have issued that qualify for inclusion in our regulatory capital, such as our shares or Additional Tier 1 capital instruments. We may decide to refrain from taking certain actions, including increasing our capital at a time when it is feasible to do so (through securities issuances or otherwise), even if our failure to take such actions would result in a non-payment or a write-down or other recovery- or resolution-related measure in respect of any of our regulatory capital instruments. Our decisions could cause the holders of such regulatory capital instruments to lose all or part of the value of their investments in these instruments due to their effect on our regulatory capital ratios, and such holders will not have any claim against us relating to such decisions, even if they result in a non-payment or a write-down or other recovery- or resolution-related measure in respect of such instruments they hold.

In addition, our annual profit and distributable reserves form an important part of the funds available for us to pay dividends on our shares and make payments on our other regulatory capital instruments, as determined in the case of each such instrument by its terms or by operation of law, and any adverse change in our financial prospects, financial position or profitability, or our distributable reserves, each as calculated on an unconsolidated basis, may have a material adverse effect on our ability to make dividend or other payments on these instruments. In addition, as part of the implementation of our strategy, we may record impairments that reduce the carrying value of subsidiaries on our unconsolidated balance sheet and reduce profits and distributable reserves. Future impairments or other events that reduce our profit or distributable reserves on an unconsolidated basis could lead us to be unable to make such payments in respect of future years in part or at all. In particular, the direct costs of our potential settlements of litigation, enforcement and similar matters, especially to the extent in excess of provisions we have established for them, and their related business impacts, if they occur, could impact such distributable amounts.

In addition, German law places limits on the extent to which annual profits and otherwise-distributable reserves, as calculated on an unconsolidated basis, may be distributed to our shareholders or the holders of our other regulatory capital instruments, such as our Additional Tier 1 capital instruments. Our management also has, subject to applicable law, broad discretion under the applicable accounting principles to influence all amounts relevant for calculating funds available for distribution. Such decisions may impact our ability to make dividend or other payments under the terms of our regulatory capital instruments.

European and German legislation regarding the recovery and resolution of banks and investment firms could, if steps were taken to ensure our resolvability or resolution measures were imposed on us, significantly affect our business operations, and lead to losses for our shareholders and creditors.

Germany participates in the SRM, which centralizes at a European level the key competences and resources for managing the failure of any bank in member states of the European Union participating in the banking union. The SRM is based on the SRM Regulation and the BRRD, which was implemented in Germany through the German Recovery and Resolution Act. In addition, the German Resolution Mechanism Act (*Abwicklungsmechanismusgesetz*) adapted German bank resolution laws to the SRM.

The SRM Regulation and the German Recovery and Resolution Act require the preparation of recovery and resolution plans for banks and grant broad powers to public authorities to intervene in a bank which is failing or likely to fail. For a bank directly supervised by the ECB, such as Deutsche Bank, the Single Resolution Board (referred to as the “SRB”) assesses its resolvability and may require legal and operational changes to the bank’s structure to ensure its resolvability. In the event that such bank is deemed by the ECB or the SRB as failing or likely to fail and certain other conditions are met, the SRB is

responsible for adopting a resolution scheme for resolving the bank pursuant to the SRM Regulation. The European Commission and, to a lesser extent, the Council of the European Union, have a role in endorsing or objecting to the resolution scheme proposed by the SRB. The resolution scheme would be addressed to and implemented by the competent national resolution authorities (in Germany, the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*, “BaFin”)) in line with the national laws implementing the BRRD. Resolution measures that could be imposed upon a bank in resolution may include the transfer of shares, assets or liabilities of the bank to another legal entity, the reduction, including to zero, of the nominal value of shares, the dilution of shareholders or the cancellation of shares outright, or the amendment, modification or variation of the terms of the bank’s outstanding debt instruments, for example by way of a deferral of payments or a reduction of the applicable interest rate. Furthermore, certain eligible unsecured liabilities, in particular certain senior “non-preferred” debt instruments specified by the German Banking Act, may be written down, including to zero, or converted into equity (commonly referred to as “bail-in”) if the bank becomes subject to resolution.

The SRM is intended to eliminate, or reduce, the need for public support of troubled banks. Therefore, financial public support for such banks, if any, would be used only as a last resort after having assessed and exploited, to the maximum extent practicable, the resolution powers, including a bail-in. The taking of actions to ensure our resolvability or the exercise of resolution powers by the competent resolution authority could materially affect our business operations and lead to a significant dilution of our shareholders or even the total loss of our shareholders’ or creditors’ investment.

Other regulatory reforms adopted or proposed in the wake of the financial crisis – for example, extensive new regulations governing our derivatives activities, compensation, bank levies, deposit protection, data protection or a possible financial transaction tax – may materially increase our operating costs and negatively impact our business model.

Beyond capital requirements and the other requirements discussed above, we are affected, or expect to be affected, by various additional regulatory reforms, including, among other things, regulations governing our derivatives activities, compensation, bank levies, deposit protection including in the event that a compensation case is ascertained, data protection or a possible financial transaction tax.

On August 16, 2012, the EU Regulation on over-the-counter (“OTC”) derivatives, central counterparties and trade repositories, referred to as European Market Infrastructure Regulation (“EMIR”), entered into force. EMIR introduced a number of requirements, including clearing obligations for certain classes of OTC derivatives and various reporting and disclosure obligations. EMIR implementation has led and may lead to changes that may negatively impact our profit margins. The revised Markets in Financial Instruments Directive (“MiFID 2”) and the corresponding Regulation (“MiFIR”) became applicable to us on January 3, 2018 and provide for, among other things, a trading obligation for those OTC derivatives which are subject to mandatory clearing and which are sufficiently standardized.

In the United States, the Dodd-Frank Act has numerous provisions that affect or may affect our operations. Pursuant to regulations implementing provisions of the Dodd-Frank Act, we provisionally registered as a swap dealer with the U.S. Commodity Futures Trading Commission (“CFTC”) and became subject to the CFTC’s extensive oversight. Regulation of swap dealers by the CFTC imposes numerous corporate governance, business conduct, capital, margin, reporting, clearing, execution and other regulatory requirements on us. It also requires us to comply with certain U.S. rules in some circumstances with respect to transactions conducted outside of the United States or with non-U.S. persons. Although the coverage of EMIR and CFTC regulations implementing the Dodd-Frank Act is in many ways similar, certain swaps may be subject to both regulatory regimes to a significant extent. However, pursuant to the CFTC’s guidance on cross-border swaps regulation, there may be instances where we can comply with the requirements of EMIR and MiFID in lieu of complying with the CFTC’s requirements. The requirements under the Dodd-Frank Act may adversely affect our derivatives business and make us less competitive, especially as compared to competitors not subject to such regulation.

Additionally, under the Dodd-Frank Act, security-based swaps are subject to a standalone regulatory regime under the jurisdiction of the U.S. Securities and Exchange Commission (“SEC”). The SEC has recently adopted supplemental guidance and rule amendments addressing the cross-border application of certain rules regulating security-based swaps. This rulemaking will establish a firm timeline for security-based swap dealer registration. The compliance date for Deutsche Bank to register with the SEC is no earlier than October 6, 2021. This will impose further regulation of our derivatives business.

In addition, the CRR/CRD 4 legislative package provided for executive compensation reforms including caps on bonuses that may be awarded to “material risk takers” and other employees as defined therein and in the German Banking Act and other applicable rules and regulations such as the Remuneration Regulation for Institutions (*Institutsvergütungsverordnung*). Such restrictions on compensation, including the amendments introduced by the banking reform package and any guidelines issued by the European Banking Authority to further implement them, could put us at a disadvantage to our competitors in attracting and retaining talented employees, especially compared to those outside the European Union that are not subject to these caps and other constraints.

Following the financial crisis, bank levies have been introduced in some countries including, among others, Germany and the United Kingdom. We paid € 633 million for bank levies in 2020, € 622 million in 2019 and € 690 million in 2018. Also, we are required to contribute substantially to the Single Resolution Fund under the SRM (which is intended to reach a target level of 1 % of insured deposits of all banks in member states participating in the SRM by the end of 2023) and the statutory deposit guarantee and investor compensation schemes under the recast European Union directive on deposit guarantee schemes ("DGS Directive") and the European Union directive on investor compensation schemes. The DGS Directive defines a 0.8 % target level of prefunding by July 3, 2024 (similar to resolution funds), which has significantly increased the costs of the statutory deposit protection scheme. In addition, in this context, on November 24, 2015, the European Commission proposed a regulation to establish a European Deposit Insurance Scheme, or "EDIS", for bank deposits of all credit institutions that are members of any of the current national statutory deposit guarantee schemes of member states participating in the banking union. While the total impact of these future levies cannot currently be quantified, they may have a material adverse effect on our business, financial condition and results of operations in future periods. Failures of banks, resolution measures and a decline of the value of the assets held by the SRM by the relevant DGS can cause an increase of contributions in order to replenish the shortfall.

We are subject to the General Data Protection Regulation ("GDPR") which has increased our regulatory obligations in connection with the processing of personal data, including requiring compliance with the GDPR's data protection principles, the increased number of data subject rights and strict data breach notification requirements. The GDPR grants broad enforcement powers to supervisory authorities, including the potential to levy significant fines for non-compliance and provides for a private right of action for individuals who are affected by a violation of the GDPR. Compliance with the GDPR requires investment in appropriate technical and organizational measures and we may be required to devote significant resources to data protection on an ongoing basis. In the event that we are found to have not met the standards required by the GDPR we may incur damage to our reputation, the imposition by data protection supervisory authorities of significant fines or restrictions on our ability to process personal data, and we may be required to defend claims for compensation brought by affected individuals, all of which could have a material adverse effect on us.

Since the Council of the European Union adopted a decision in January 2013 authorizing EU member states to proceed with the introduction of a financial transaction tax under the European Union's "enhanced cooperation procedure", the EU member states Austria, Belgium, France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia and Spain have been discussing the introduction of a European financial transaction tax. To date, Italy, France and Spain have introduced a national tax on listed share transactions. It is currently expected that the EU commission will issue a new legislative draft by summer 2024 with the tax being effective as of 2026 if approved by member states. If such a financial transaction tax is ultimately adopted, depending on its final details, it could result in compliance costs.

On November 27, 2019, the European Parliament and the Council adopted the Investment Firm Regulation and the Investment Firm Directive, which will introduce substantive regulatory changes (including to the calculation of capital requirements) in respect of investment firms, such as our subsidiary DWS. The Investment Firm Regulation and the Investment Firm Directive (as implemented into German law) will apply in large part from June 26, 2021.

Risks Relating to Our Internal Control Environment

A robust and effective internal control environment and adequate infrastructure (comprising people, policies and procedures, processes, controls assurance and IT systems) are necessary to ensure that we conduct our business in compliance with the laws, regulations and associated supervisory expectations applicable to us. We have identified the need to strengthen our internal control environment and infrastructure and have embarked on initiatives to accomplish this. If these initiatives are not successful or proceed too slowly, our reputation, regulatory position and financial condition may be materially adversely affected, and our ability to achieve our strategic ambitions may be impaired.

Our businesses are highly dependent on our ability to maintain a robust and effective internal control environment. This is needed for the Bank to process and monitor, on a daily basis, a wide variety of transactions, many of which are highly complex and occur at high speeds, volumes and frequencies, and across numerous and diverse markets and currencies. Such a robust and effective control environment is in turn dependent on the sufficiency of our infrastructure to support that environment. This infrastructure consists broadly of internal policies and procedures, processes, controls assurance, and the IT systems and employees needed to enforce and enable them. An effective control environment is dependent on infrastructure systems and procedures that cover the processing and settling of transactions; the valuation of assets; the identification, monitoring, aggregation, measurement and reporting of risks and positions against various metrics; the evaluation of counterparties and customers for legal, regulatory and compliance purposes; the escalation of reviews; and the taking of mitigating and remedial actions where necessary. They are also critical for regulatory reporting, data processing and compliance activities.

Both our internal control environment and the infrastructure that underlies it fall short in a number of areas of our standards for completeness and comprehensiveness and are not well integrated across the Bank. Our IT infrastructure, in particular, is fragmented, with numerous distinct platforms, many of which need significant upgrades, in operation across the Bank. Our business processes and the related control systems often require manual procedures and actions that increase the risks of

human error and other operational problems that can lead to delays in reporting information to management and to the need for more adjustments and revisions than would be the case with more seamlessly integrated and automated systems and processes. As a result, it is often difficult and labor-intensive for us to obtain or provide information of a consistently high quality and on a timely basis to comply with regulatory reporting and other compliance requirements or to meet regulatory expectations on a consistent basis and, in certain cases, to manage our risk comprehensively. Furthermore, it often takes intensive efforts to identify, when possible, inappropriate behavior by our staff and attempts by third parties to misuse our services as a conduit for prohibited activities, including those relating to anti-financial crime laws and regulation.

In addition, we may not always have the personnel with the appropriate experience, seniority and skill levels to compensate for shortcomings in our processes and infrastructure, or to identify, manage or control risks, and it often has been difficult to attract and retain the requisite talent. This has impacted our ability to remediate existing weaknesses and manage the risks inherent in our activity. Additionally, despite the lower overall rate of attrition we have experienced during the COVID-19 pandemic, attrition in positions key to improving our control environment remains a risk.

Against this backdrop, our regulators, our Management Board and our Group Audit function have increasingly and more intensively focused on our internal controls and infrastructure through numerous formal reviews and audits of our operations. These reviews and audits have identified various areas for improvement relating to a number of elements of our control environment and infrastructure. These include the infrastructure relating to transaction capturing and recognition, classification of assets, asset valuation frameworks, models, data and process consistency, information security, software license management, payment services, risk identification, measurement and management and other processes required by laws, regulations, and supervisory expectations. They also include regulatory reporting, anti-money laundering (“AML”), “know your customer” (“KYC”), sanctions and embargoes, market conduct and other internal processes that are aimed at preventing use of our products and services for the purpose of committing or concealing financial crime.

Our principal regulators, including the BaFin, the ECB and the Federal Reserve Board, have also conducted numerous reviews focused on our internal controls and the related infrastructure. These regulators have required us formally to commit to remediate our AML and other weaknesses, including the fragmented and manual nature of our infrastructure. For example, on September 21, 2018, the BaFin issued an order requiring us to implement measures on specified timelines over the coming months and years to improve our control and compliance infrastructure relating to AML and, in particular, the KYC processes in certain of our businesses. Local regulators in other countries in which we do business also review the sufficiency of our control environment and infrastructure with respect to their jurisdictions. While the overall goals of the various prudential regulators having authority over us in the many places in which we do business are broadly consistent, and the general themes of our deficiencies in internal controls and the supporting infrastructure are similar, the regulatory frameworks applicable to us in the area of internal controls are generally applicable at a national or EU-wide level and are not always consistent across the jurisdictions in which we operate around the world. This adds complexity and cost to our efforts to reduce fragmentation and put in place automated systems that communicate seamlessly and quickly with one another.

In order to improve in the areas discussed above, we are undertaking several major initiatives to enhance the efficacy of the transaction processing environment, strengthen our controls and infrastructure, manage non-financial risks and enhance the skill set of our personnel. We believe that these initiatives will better enable us to avoid the circumstances that have resulted in many of the litigations and regulatory and enforcement investigations and proceedings to which we have been subject, and will improve our ability to comply with laws and regulations and meet supervisory expectations. In particular, we are making efforts to reduce the complexity of our business and to integrate and automate processes and business and second-line controls. We have also exited certain businesses and high-risk countries, selectively off-boarded a number of clients, worked to strengthen our compliance culture and control functions. However, we may be unable to complete these initiatives as quickly as we intend or as our regulators demand, and our efforts may be insufficient to remediate existing deficiencies and prevent future deficiencies or to result in fewer litigations or regulatory and enforcement investigations, proceedings and criticism in the future. We may also, when faced with the considerable expense of these initiatives, fail to provide sufficient resources for them quickly enough or at all, especially during periods when our operating performance and profitability are challenged or when we focus on our cost-savings efforts. The slow pace of our remediation efforts and progress on achieving significant and durable improvements in the areas discussed above may result in regulatory action of the type that has been taken against other financial institutions whose progress regulators have deemed insufficient or too slow. If we are unable to significantly improve our infrastructure and control environment in a timely manner, we may be subject to fines or penalties, as well as to regulatory intervention in aspects of our businesses. For example, we might feel pressure or be required by our regulators to reduce our exposure to or terminate certain kinds of products or businesses, counterparties or regions, which could, depending on the extent of such requirement, significantly challenge our ability to operate profitably under our current business model.

Regulators can also impose capital surcharges, requiring capital buffers in addition to those directly required under the regulatory capital rules applicable to us, to reflect the additional risks posed by deficiencies in our control environment. In extreme cases, regulators can suspend our permission to operate in the businesses and regions within their jurisdictions or require extensive and costly remedial actions. Furthermore, implementation of enhanced infrastructure and controls may result in higher-than-expected costs of regulatory compliance that could offset or exceed efficiency gains or significantly affect our profitability. Any of these factors could affect our ability to implement our strategy in a timely manner or at all.

The BaFin has ordered us to improve our control and compliance infrastructure relating to our anti-money laundering and know-your-client processes, and appointed a special representative to monitor these measures' implementation. Our results of operations, financial condition and reputation could be materially and adversely affected if we are unable to significantly improve our infrastructure and control environment by the set deadline.

On September 21, 2018, the BaFin issued an order requiring us to implement measures on specified timelines over the coming months and years to improve our control and compliance infrastructure relating to AML and, in particular, the KYC processes in certain of our businesses. The BaFin also appointed KPMG as special representative, reporting to the BaFin on a quarterly basis on certain aspects of our compliance and progress with the implementation of these measures. In February 2019, the BaFin extended the special representative's mandate to cover our internal controls in the correspondent banking business. Our AML and KYC processes, as well as our other internal processes that are aimed at preventing use of our products and services for the purpose of committing or concealing financial crime and our personnel responsible for our efforts in these areas, continue to be the subject of regulatory scrutiny in a number of jurisdictions, including in the U.S., and other regulators could take actions against us similar to those of the BaFin. If we are unable to significantly improve our infrastructure and control environment by the set deadline, our results of operations, financial condition and reputation could be materially and adversely affected. For example, some of our regulators, such as BaFin, would likely impose fines or require us to reduce our exposure to or terminate certain kinds of products or businesses or relationships with counterparties or regions. We may also face additional legal proceedings, investigations or regulatory actions in the future, including in other jurisdictions and/or with respect to matters similar to, or broader than, the September 2018 BaFin order. These could, depending on the extent of any resulting requirements, significantly challenge our reputation and our ability to operate profitably under our current business model.

Risks Relating to Litigation, Regulatory Enforcement Matters and Investigations

We operate in a highly and increasingly regulated and litigious environment, potentially exposing us to liability and other costs, the amounts of which may be substantial and difficult to estimate, as well as to legal and regulatory sanctions and reputational harm.

The financial services industry is among the most highly regulated industries. Our operations throughout the world are regulated and supervised by the central banks and regulatory authorities in the jurisdictions in which we operate. In recent years, regulation and supervision in a number of areas has increased, and regulators, law enforcement authorities, governmental bodies and others have sought to subject financial services providers to increasing oversight and scrutiny, which in turn has led to additional regulatory investigations or enforcement actions which are often followed by civil litigation. There has been a steep escalation in the severity of the terms which regulators and law enforcement authorities have required to settle legal and regulatory proceedings against financial institutions, with settlements in recent years including unprecedented monetary penalties as well as criminal sanctions. As a result, we may continue to be subject to increasing levels of liability and regulatory sanctions, and may be required to make greater expenditures and devote additional resources to addressing these liabilities and sanctions. Regulatory sanctions may include status changes to local licenses or orders to discontinue certain business practices.

We and our subsidiaries are involved in various litigation proceedings, including civil class action lawsuits, arbitration proceedings and other disputes with third parties, as well as regulatory proceedings and investigations by both civil and criminal authorities in jurisdictions around the world. We expect that the costs to us arising from the resolution of litigation, enforcement and similar matters pending against us to continue to be significant in the near to medium term and to adversely affect our business, financial condition and results of operations. Litigation and regulatory matters are subject to many uncertainties, and the outcome of individual matters is not predictable with assurance. We may settle litigation or regulatory proceedings prior to a final judgment or determination of liability. We may do so for a number of reasons, including to avoid the cost, management efforts or negative business, regulatory or reputational consequences of continuing to contest liability, even when we believe we have valid defenses to liability. We may also do so when the potential consequences of failing to prevail would be disproportionate to the costs of settlement. Furthermore, we may, for similar reasons, reimburse counterparties for their losses even in situations where we do not believe that we are legally compelled to do so. The financial impact of legal risks might be considerable but may be difficult or impossible to estimate and to quantify, so that amounts eventually paid may exceed the amount of provisions made or contingent liabilities assessed for such risks.

Actions currently pending against us or our current or former employees may not only result in judgments, settlements, fines or penalties, but may also cause substantial reputational harm to us. The risk of damage to our reputation arising from such proceedings is also difficult or impossible to quantify.

Regulators have increasingly sought admissions of wrongdoing in connection with settlement of matters brought by them. This could lead to increased exposure in subsequent civil litigation or in consequences under so-called "bad actor" laws, in which persons or entities determined to have committed offenses under some laws can be subject to limitations on business activities under other laws, as well as adverse reputational consequences. In addition, the U.S. Department of Justice ("DOJ") conditions the granting of cooperation credit in civil and criminal investigations of corporate wrongdoing on the company involved having

provided to investigators all relevant facts relating to the individuals responsible for the alleged misconduct. This policy may result in increased fines and penalties if the DOJ determines that we have not provided sufficient information about applicable individuals in connection with an investigation. Other governmental authorities could adopt similar policies.

In addition, the financial impact of legal risks arising out of matters similar to some of those we face have been very large for a number of participants in the financial services industry, with fines and settlement payments greatly exceeding what market participants may have expected and, as noted above, escalating steeply in recent years to unprecedented levels. The experience of others, including settlement terms, in similar cases is among the factors we take into consideration in determining the level of provisions we maintain in respect of these legal risks. Developments in cases involving other financial institutions in recent years have led to greater uncertainty as to the predictability of outcomes and could lead us to add to our provisions. Moreover, the costs of our investigations and defenses relating to these matters are themselves substantial. Further uncertainty may arise as a result of a lack of coordination among regulators from different jurisdictions or among regulators with varying competencies in a single jurisdiction, which may make it difficult for us to reach concurrent settlements with each regulator. Should we be subject to financial impacts arising out of litigation and regulatory matters to which we are subject in excess of those we have calculated in accordance with our expectations and the relevant accounting rules, our provisions in respect of such risks may prove to be materially insufficient to cover these impacts. This could have a material adverse effect on our results of operations, financial condition or reputation as well as on our ability to maintain capital, leverage and liquidity ratios at levels expected by market participants and our regulators. In such an event, we could find it necessary to reduce our risk weighted assets (including on terms disadvantageous to us) or substantially cut costs to improve these ratios, in an amount corresponding to the adverse effects of the provisioning shortfall.

We are currently the subject of industry-wide investigations by regulatory and law enforcement agencies relating to interbank and dealer offered rates, as well as civil actions. Due to a number of uncertainties, including those related to the high profile of the matters and other banks' settlement negotiations, the eventual outcome of these matters is unpredictable, and may materially and adversely affect our results of operations, financial condition and reputation.

We have responded to requests for information from, and cooperated with, various regulatory and law enforcement agencies in connection with industry-wide investigations concerning the setting of the London Interbank Offered Rate (LIBOR), Euro Interbank Offered Rate (EURIBOR), Tokyo Interbank Offered Rate (TIBOR) and other interbank and dealer offered rates. The investigations underway have the potential to result in the imposition of significant financial penalties and other consequences for the Bank.

As previously reported, we paid € 725 million to the European Commission pursuant to a settlement agreement dated December 4, 2013 in relation to anticompetitive conduct in the trading of interest rate derivatives. Also as previously reported, on April 23, 2015, we reached settlements with the DOJ, the CFTC, FCA, and the New York State Department of Financial Services ("DFS") to resolve investigations into misconduct concerning the setting of LIBOR, EURIBOR, and TIBOR. Under the terms of these agreements, we paid penalties of U.S.$ 2.175 billion to the DOJ, CFTC and DFS and GBP 226.8 million to the FCA. As part of the resolution with the DOJ, DB Group Services (UK) Limited (an indirectly-held, wholly-owned subsidiary of ours) pled guilty to one count of wire fraud in the U.S. District Court for the District of Connecticut and we entered into a Deferred Prosecution Agreement with a three year term, which expired in 2018. On October 25, 2017, we entered into a settlement with a working group of U.S. state attorneys general resolving their interbank offered rate investigation. Among other conditions, we made a settlement payment of U.S.$ 220 million. The factual admissions we have made in connection with these settlements could make it difficult for us to defend against pending and future claims. Other investigations of us concerning the setting of various interbank offered rates remain ongoing.

In addition, we are party to 37 U.S. civil actions concerning alleged manipulation relating to the setting of various interbank and/or dealer offered rates, as well as actions pending in each of the UK, Israel, Argentina and Spain. Most of the civil actions, including putative class actions, are pending in the U.S. District Court for the Southern District of New York (SDNY), against us and numerous other defendants. All but three of the U.S. civil actions were filed on behalf of parties who allege losses as a result of manipulation relating to the setting of U.S. dollar LIBOR. The three U.S. civil actions pending against us that do not relate to U.S. dollar LIBOR were also filed in the SDNY, and include one consolidated action concerning Pound Sterling (GBP) LIBOR, one action concerning Swiss franc (CHF) LIBOR, and one action concerning two Singapore Dollar (SGD) benchmark rates, the Singapore Interbank Offered Rate (SIBOR) and the Swap Offer Rate (SOR).

We cannot predict the effect on us of the interbank and dealer offered rates matters, which could include fines levied by government bodies, damages from private litigation for which we may be liable, legal and regulatory sanctions (including possible criminal sanctions) and other consequences.

We are currently involved in civil proceedings in connection with our voluntary takeover offer for the acquisition of all shares of Postbank. The extent of our financial exposure to this matter could be material, and our reputation may be harmed.

On September 12, 2010, we announced a voluntary takeover offer for the acquisition of all shares in Deutsche Postbank AG (Postbank). On October 7, 2010, we published our official takeover offer and offered Postbank shareholders a consideration of € 25 for each Postbank share. This offer was accepted for a total of approximately 48.2 million Postbank shares.

In November 2010, a former shareholder of Postbank, Effecten-Spiegel AG, which had accepted the takeover offer, brought a claim against us alleging that the offer price was too low and was not determined in accordance with the applicable German law. The plaintiff alleges that we had been obliged to make a mandatory takeover offer for all shares in Postbank, at the latest, in 2009, as the voting rights of Deutsche Post AG in Postbank had to be attributed to us pursuant to Section 30 of the German Takeover Act. Based thereon, the plaintiff alleges that the consideration offered by us in the 2010 voluntary takeover offer needed to be raised to € 57.25 per share.

The Regional Court *(Landgericht)* Cologne dismissed the claim in 2011 and the Higher Regional Court (*Oberlandesgericht*) Cologne dismissed the appeal in 2012. The German Federal Court (*Bundesgerichtshof*) set this judgment aside and referred the case back to the Higher Regional Court Cologne to take evidence on certain allegations of the plaintiff.

Starting in 2014, additional former shareholders of Postbank, who accepted the 2010 tender offer, brought similar claims as Effecten-Spiegel AG. On October 20, 2017, the Regional Court Cologne handed down a decision granting the claims in a total of 14 cases which were combined in one proceeding. The Regional Court Cologne took the view that we were obliged to make a mandatory takeover offer already in 2008 so that the appropriate consideration to be offered in the takeover offer should have been € 57.25 per Postbank share (instead of € 25). The additional consideration per share owed to shareholders which have accepted the takeover offer would thus amount to € 32.25. We appealed this decision and the appeal was assigned to the 13th Senate of the Higher Regional Court of Cologne, which also heard the appeal of Effecten-Spiegel AG.

On December 16, 2020, the Higher Regional Court Cologne handed down a decision and fully dismissed the claims of Effecten-Spiegel AG. Further, in a second decision handed down on December 16, 2020, the Higher Regional Court Cologne allowed the appeal of Deutsche Bank against the decision of the Regional Court Cologne dated October, 20, 2017 and dismissed all related claims of the relevant plaintiffs. The Higher Regional Court Cologne has granted leave to appeal to the German Federal Court (*Bundesgerichtshof*) as regards both decisions and all relevant plaintiffs have lodged their respective appeals with the Federal Court at the end of January and beginning of February 2021, respectively.

We have been served with a large number of additional lawsuits filed against us shortly before the end of 2017, almost all of which are now pending with the Regional Court Cologne. Some of the new plaintiffs allege that the consideration offered by us for the shares in Postbank in the 2010 voluntary takeover should be raised to € 64.25 per share.

The claims for payment against us in relation to these matters total almost € 700 million (excluding interest).

Further Proceedings Relating to the Postbank Takeover. In September 2015, former shareholders of Postbank filed in the Regional Court Cologne shareholder actions against Postbank to set aside the squeeze-out resolution taken in the shareholders meeting of Postbank in August 2015. Among other things, the plaintiffs alleged that we were subject to a suspension of voting rights with respect to our shares in Postbank based on the allegation that we failed to make a mandatory takeover offer. The squeeze out is final and the proceeding itself has no reversal effect, but may result in damage payments. The claimants refer to legal arguments similar to those asserted in the Effecten-Spiegel proceeding described above. In a decision on October 20, 2017, the Regional Court Cologne declared the squeeze-out resolution to be void. The court, however, did not rely on a suspension of voting rights due to an alleged failure by us to make a mandatory takeover offer, but argued that Postbank violated information rights of Postbank shareholders in Postbank's shareholders meeting in August 2015. Postbank appealed this decision. On May 15, 2020 DB Privat- und Firmenkundenbank AG (legal successor of Postbank due to a merger in 2018) was merged into Deutsche Bank AG. On July 3, 2020 Deutsche Bank AG withdrew the appeal as regards the actions for voidance because efforts and costs to pursue this appeal became disproportionate to the minor remaining economic importance of the case considering that the 2015 squeeze-out cannot be reversed. As a consequence, the first instance judgement which found that Postbank violated the information rights of its shareholders in the shareholders' meeting has become final.

The legal question of whether we had been obliged to make a mandatory takeover offer for all Postbank shares prior to our 2010 voluntary takeover may also impact two pending appraisal proceedings (*Spruchverfahren*). These proceedings were initiated by former Postbank shareholders with the aim to increase the cash compensation offered in connection with the squeeze-out of Postbank shareholders in 2015 and the cash compensation offered and annual compensation paid in connection with the execution of a domination and profit and loss transfer agreement (*Beherrschungs- und Gewinnabführungsvertrag*) between DB Finanz-Holding AG (now DB Beteiligungs-Holding GmbH) and Postbank in 2012.

The applicants in the appraisal proceedings claim that a potential obligation of ours to make a mandatory takeover offer for Postbank at an offer price of € 57.25 should be decisive when determining the adequate cash compensation in the appraisal proceedings. The Regional Court Cologne had originally followed this legal opinion of the applicants in two resolutions. In a decision dated June 2019, the Regional Court of Cologne expressly deviated from this legal resolution in the appraisal proceedings in connection with execution of a domination and profit and loss transfer agreement. According to this decision, the question whether we were obliged to make a mandatory offer for all Postbank shares prior to our voluntary takeover offer in 2010 shall not be relevant for determining the appropriate cash compensation. It is likely that the Regional Court Cologne will take the same legal position in the appraisal proceedings in connection with the squeeze-out. On October 1, 2020 the Regional Court Cologne handed down a decision in the appraisal proceeding concerning the domination and profit and loss transfer agreement (dated December 5, 2012) according to which the annual compensation pursuant to Section 304 of the German Stock Corporation Act (*jährliche Ausgleichszahlung*) shall be increased by € 0.12 to € 1.78 per Postbank share and the settlement amount pursuant to Section 305 of the German Stock Corporation Act (*Abfindungsbetrag*) shall be increased by € 4.56 to € 29.74 per Postbank share. The increase of the settlement amount is of relevance for approximately 492.000 former Postbank shares whereas the increase of the annual compensation is of relevance for approximately 7 million former Postbank shares. Deutsche Bank as well as the applicants have lodged an appeal against this decision.

The extent of our financial exposure to these matters could be material, and our reputation may be harmed.

We have investigated the circumstances around equity trades entered into by certain clients in Moscow and London and have advised regulators and law enforcement authorities in several jurisdictions about those trades. In the event that violations of law or regulation are found to have occurred, any resulting penalties against us may materially and adversely affect our results of operations, financial condition and reputation.

We have investigated the circumstances around equity trades entered into by certain clients with us in Moscow and London that offset one another. The total volume of transactions reviewed is significant. Our internal investigation of potential violations of law, regulation and policy and into the related internal control environment has concluded, and we have assessed the findings identified during the investigation; to date we have identified certain violations of our policies and deficiencies in our control environment. We have advised regulators and law enforcement authorities in several jurisdictions (including Germany, Russia, the UK and the United States) of this investigation and have taken disciplinary measures with regards to certain individuals in this matter.

On January 30 and 31, 2017, the DFS and FCA announced settlements with the Bank related to their investigations into this matter. The settlements conclude the DFS and the FCA's investigations into the bank's AML control function in its investment banking division, including in relation to the equity trading described above. Under the terms of the settlement agreement with the DFS, Deutsche Bank entered into a consent order, and agreed to pay civil monetary penalties of U.S.$ 425 million and to engage an independent monitor to conduct a comprehensive review of its existing AML compliance programs that pertain to or affect activities conducted by or through our U.S. bank subsidiary DBTCA and our New York branch for a term of up to two years. Under the terms of the settlement agreement with the FCA, we agreed to pay civil monetary penalties of approximately GBP 163 million. On May 30, 2017, the Federal Reserve announced its settlement with us resolving this matter as well as additional AML issues identified by the Federal Reserve. We paid a penalty of U.S.$ 41 million. We also agreed to retain independent third parties to assess our Bank Secrecy Act/AML program and review certain foreign correspondent banking activity of DBTCA. We are also required to submit written remediation plans and programs.

We continue to cooperate with regulators and law enforcement authorities, including the DOJ which has its own ongoing investigation into these securities trades. In the event that violations of law or regulation are found to have occurred, legal and regulatory sanctions in respect thereof may materially and adversely affect our results of operations, financial condition and reputation.

We are currently the subject of industry-wide inquiries and investigations by regulatory and law enforcement authorities relating to transactions of clients in German shares around the dividend record dates for the purpose of obtaining German tax credits or refunds in relation to withholding tax levied on dividend payments (so-called cum-ex transactions). In addition, we are exposed to potential tax liabilities and to the assertion of potential civil law claims by third parties, e.g. former counterparties, custodian banks, investors and other market participants, including as a consequence of criminal judgements in criminal proceedings in which we are not directly involved. The eventual outcome of these matters is unpredictable, and may materially and adversely affect our results of operations, financial condition and reputation.

The Public Prosecutor in Cologne (*Staatsanwaltschaft Köln*, "CPP") has been conducting a criminal investigation since August 2017 concerning two former employees of Deutsche Bank in relation to cum-ex transactions of certain former clients of the Bank. At the end of May and beginning of June 2019, the CPP broadened the investigation proceedings against further current and former employees and former board members of the Bank. In July 2020, in the course of inspecting the CPP's investigation file, Deutsche Bank learned that the CPP had further extended its investigation in June 2019 to include further current and former Deutsche Bank personnel, including one former Management Board member and one current Management Board member. It is difficult to predict how the proceeding will further develop. Deutsche Bank is a potential secondary participant in

these proceedings and the proceedings could result in a disgorgement of profits and fines. There is a risk that the proceedings lead to a formal indictment and criminal prosecution of accused individuals and Deutsche Bank. Increased media attention surrounding the cum-ex topic as well as any future criminal judgement that is unfavorable to the Bank can create reputational risks. The imposition of fines and the disgorgement of profits could have a material adverse effect on our financial condition or results of operations.

We are further exposed to the assertion of potential tax and civil law recourse and compensation claims by German tax authorities and third parties.

Deutsche Bank acted as participant in and filed withholding tax refund claims through the electronic refund procedure (*elektronisches Datenträgerverfahren*) on behalf of, inter alia, two former custody clients in connection with their cum-ex transactions. In February 2018, Deutsche Bank received from the German Federal Tax Office (*Bundeszentralamt für Steuern*, "FTO") a demand of approximately € 49 million for tax refunds paid to one former custody client. In December 2019, Deutsche Bank received a liability notice from the FTO in the amount of € 2.1 million in connection with tax refund claims Deutsche Bank had submitted on behalf of another former custody client. On January 20, 2020, Deutsche Bank made the requested payment and filed an objection against the liability notice. Deutsche Bank filed the reasoning for the objection on June 19, 2020. On December 3, 2020, Deutsche Bank received another hearing letter from the FTO in relation to the € 2.1 million liability notice. In the event that the FTO issues the liability notice announced in February 2018 or further liability notices and to the extent Deutsche Bank is eventually liable under the liability notices, this would expose the Bank to potential financial losses and could have a material adverse effect on our results of operations.

As regards civil law claims, The Bank of New York Mellon SA/NV ("BNY") – as a parent of two companies acting as depot bank and fund administrator which Deutsche Bank acquired in 2010 and sold to BNY later in 2010 – has informed Deutsche Bank of its intention to assert indemnification claims under a contractual tax indemnity provision for potential cum-ex related tax liabilities incurred by these companies. BNY estimates the potential tax liability to amount to up to € 120 million (excluding interest of 6 per cent p.a.). In November and December 2020, counsel to BNY informed Deutsche Bank that BNY and/or Service KAG (among others) have received notices from tax authorities regarding the estimated amount with respect to cum-ex related trades by certain investment funds in 2009 and 2010. BNY has filed objections against the notices.

On February 6, 2019, the Regional Court (*Landgericht*) Frankfurt am Main served Deutsche Bank with a claim by M.M.Warburg & CO Gruppe GmbH and M.M.Warburg & CO (AG & Co.) KGaA (together “Warburg”) in connection with cum-ex transactions of Warburg with a custody client of Deutsche Bank during 2007 to 2011. Warburg claims from Deutsche Bank indemnification against German taxes in relation to transactions conducted in the years 2007 to 2011. Further, Warburg claims compensation of unspecified damages relating to these transactions. Based on the tax assessment notices received for 2007 to 2011, Warburg is claiming a total of € 250 million (of which € 166 million is in relation to taxes and € 84 million is in relation to interest). On March 20, 2020, Warburg extended its claim against Deutsche Bank to indemnify Warburg in relation to the € 176 million (of which € 166 million is in relation to taxes and € 10 million is in relation to interest) confiscation order issued by the Regional Court Bonn in the criminal cum-ex trial on March 18, 2020 regarding the same transactions. On September 23, 2020 the Frankfurt Regional Court fully dismissed Warburg’s claim against Deutsche Bank on the grounds that Warburg as the tax debtor (*Steuerschuldner*) is primarily liable and cannot request payment from Deutsche Bank. The court further held that any claims are time-barred. On October 29, 2020, Warburg appealed the decision with the Higher Regional Court Frankfurt am Main. Deutsche Bank has until April 12, 2021 to respond to Warburg’s appellate brief.

On January 25, 2021, the Regional Court Hamburg served Deutsche Bank with a claim by Warburg Invest Kapitalanlagegesellschaft mbH (“Warburg Invest”) in relation to transactions of two investment funds in 2009 and 2010, respectively. Warburg Invest was fund manager for both funds. Warburg Invest claims, from Deutsche Bank together with several other parties as joint and several debtors (*Gesamtschuldner*), indemnification against German taxes in relation to cum-ex transactions conducted by the two funds. Further, Warburg Invest claims compensation of unspecified damages relating to these transactions. In November 2020, Warburg Invest received a tax liability notice from tax authorities for one of the funds in the amount of € 61 million. Based on publicly available information Deutsche Bank estimates the tax amount for the second fund to be approximately € 49 million. Warburg Invest filed its claim against several parties including Deutsche Bank *inter alia* damages based on an allegation of intentional damage contrary to public policy (Section 826 German Civil Code) and the accusation that Deutsche Bank participated in a business model that was contrary to public policy (*sittenwidriges Geschäftsmodell*).

The risks arising from the cum-ex topic are difficult to quantify and the likelihood of these risks materializing is hard to predict. In the event that Deutsche Bank is eventually liable under the civil law claims already asserted or under claims that will potentially be asserted by third parties in the future, this may materially and adversely affect our financial condition or results of operations.

We have entered into a deferred prosecution agreement (DPA) with the DOJ concerning our historical engagements of finders and consultants and precious metals spoofing. If we violate the DPA, its term could be extended, or we could be subject to criminal prosecution or other actions, any of which could result in additional fines, penalties, settlements, payments or other materially adverse impacts to us.

On January 8, 2021, we entered into a deferred prosecution agreement (DPA) with the DOJ concerning our historical engagements of finders and consultants and, as part of our obligations in the DPA, agreed to pay approximately U.S.$ 80 million in connection with this conduct. The DPA with the DOJ also involved a resolution involving precious metals spoofing. As part of our obligations in the DPA relating to precious metals, we agreed to pay approximately U.S.$ 8 million, of which approximately U.S.$ 6 million would be credited by virtue of our 2018 resolution with the CFTC. On the same day, we also reached a settlement with the SEC to resolve its investigation into conduct regarding our compliance with the U.S. Foreign Corrupt Practices Act with respect to our engagement of finders and consultants. We agreed to pay approximately U.S.$ 43 million in this SEC settlement. If we violate the DPA, its term could be extended, or we could be subject to criminal prosecution or other actions, any of which could result in additional fines, penalties, settlements, payments or other materially adverse impacts to us.

We are under continuous examination by tax authorities in the jurisdictions in which we operate. Tax laws are increasingly complex and are evolving. The cost to us arising from the resolution of routine tax examinations, tax litigation and other forms of tax proceedings or tax disputes may increase and may adversely affect our business, financial condition and results of operation.

We are under continuous examination by tax authorities in the jurisdictions in which we operate. Tax laws are increasingly complex. In the current political and regulatory environment, tax administrations' and courts' interpretation of tax laws and regulations and their application are evolving, and scrutiny by tax authorities has become increasingly intense. Wide ranging and continuous changes in the principles of international taxation emanating from the OECD's Base Erosion and Profit Shifting agenda are generating significant uncertainties for us and our subsidiaries and may result in an increase in instances of tax disputes or instances of double taxation going forward, as member states may take different approaches in transposing these requirements into national law or may choose to implement unilateral measures. A recent example is the EU directive requiring disclosure of arrangements with specific tax features that took effect in 2020. Tax administrations have also been focusing on the eligibility of taxpayers for reduced withholding taxes on dividends in connection with certain cross-border lending or derivative transactions. In addition, while a significant amount of guidance has been issued since the enactment of the U.S. tax reform at the end of 2017 which included the Base Erosion Anti-Abuse Tax provisions, uncertainties remain and further interpretative guidance may be necessary over the coming years. As a result, the cost to us arising from the resolution of routine tax examinations, tax litigation and other forms of tax proceedings or tax disputes, as well as from rapidly changing and increasingly complex and uncertain tax laws and principles, may increase and may adversely affect our business, financial condition and results of operation.

We are currently involved in a legal dispute with the German tax authorities in relation to the tax treatment of certain income received with respect to our pension plan assets. The proceeding is pending in front of the German supreme fiscal court (*Bundesfinanzhof*). Should the court ultimately rule in favor of the German tax authorities, the outcome could have a material effect on our comprehensive income and financial condition.

We sponsor a number of post-employment benefit plans on behalf of our employees. In Germany, the pension assets that fund the obligations under these pension plans are held by Benefit Trust GmbH. The German tax authorities are challenging the tax treatment of certain income received by Benefit Trust GmbH in the years 2010 to 2013 with respect to its pension plan assets. For the year 2010 Benefit Trust GmbH paid the amount of tax and interest assessed of € 160 million to the tax authorities and is seeking a refund of the amounts paid in litigation with the relevant lower fiscal court. For 2011 to 2013 the matter is stayed pending the outcome of the 2010 tax litigation. The amount of tax and interest under dispute for years 2011 to 2013, which also has been paid to the tax authorities, amounts to € 456 million. In March 2017, the lower fiscal court ruled in favor of Benefit Trust GmbH and in September 2017 the tax authorities appealed the decision to the German supreme fiscal court (*Bundesfinanzhof*). A court hearing is scheduled for March 15, 2021. An ultimate decision by the court that is unfavorable to us could materially and adversely affect our comprehensive income and financial condition.

U.S. Congressional committees and other U.S. governmental entities have sought and may seek information from us concerning potential dealings between us and the U.S. executive branch, former President Trump, his family and other close associates, exposing us in particular to risk to our reputation and potential loss of business as a result of extensive media attention.

A number of media entities have reported that U.S. Congressional committees and other U.S. governmental entities are seeking or may seek information from us concerning, among other things, potential dealings between the Bank and certain members of the executive branch of the U.S. government, former President Trump, his family, and other close associates. Attention surrounding such actual or potential requests and inquiries and our responses can create reputational and other risks that could have a material adverse effect on us. Our policy is to cooperate with all authorized government inquiries.

We have received requests for information from regulatory and law enforcement agencies concerning our correspondent banking relationship with Danske Bank, exposing us in particular to risk to our reputation and potential loss of business as a result of extensive media attention.

We have received requests for information from regulatory and law enforcement agencies concerning our correspondent banking relationship with Danske Bank, including our historical processing of correspondent banking transactions on behalf of customers of Danske Bank's Estonia branch prior to cessation of the correspondent banking relationship with that branch in 2015. We are providing information to and otherwise cooperating with the investigating agencies. We have also completed an internal investigation into these matters, including of whether any violations of law, regulation or policy occurred and the effectiveness of the related internal control environment. Additionally, on September 24 and 25, 2019, based on a search warrant issued by the Local Court (*Amtsgericht*) in Frankfurt, the Frankfurt public prosecutor's office conducted investigations into Deutsche Bank. The investigations are in connection with suspicious activity reports relating to money laundering at Danske Bank. On October 13, 2020, the FPP closed its criminal investigation because the FPP did not find sufficient evidence to substantiate the money laundering suspicion. However, the Bank agreed to pay an administrative fine of € 13.5 million to the FPP for failing to submit suspicious activity reports (SARs) in Germany in a timely fashion, which it paid in the fourth quarter of 2020.

On July 7, 2020, the DFS issued a Consent Order, finding that Deutsche Bank violated New York State banking laws in connection with its relationships with three former Deutsche Bank clients, Danske Bank's Estonia branch, Jeffrey Epstein and FBME Bank, and imposing a U.S.$ 150 million civil penalty in connection with these three former relationships, which Deutsche Bank paid in the third quarter of 2020.

On July 15, 2020, Deutsche Bank was named as a defendant in a securities class action filed in the U.S. District Court for the District of New Jersey, alleging that the Bank made material misrepresentations regarding the effectiveness of its AML controls and related remediation. The complaint cites allegations regarding control deficiencies raised in the DFS Consent Order related to the Bank's relationships with Danske Bank's Estonia branch, Jeffrey Epstein and FBME Bank. On September 30, 2020, the plaintiff filed an amended complaint that included additional allegations regarding the effectiveness of the Bank's AML controls. On December 28, 2020, the court appointed lead plaintiff and lead counsel. Lead plaintiff is anticipated to file a second amended complaint by March 1, 2021. The Bank's motion to dismiss is due by April 15, 2021, with briefing on the motion to conclude by July 1, 2021.

Media and market attention surrounding these matters can create reputational risks in particular, even if our investigations and those of our regulators and the authorities do not result in evidence of wrongdoing. We could in particular suffer diminished volumes of business as a result, which could have a material adverse effect on our financial condition and results of operations.

We have received requests for information from regulatory and law enforcement agencies concerning our anti-financial crime controls, including in the United States. As a result of these investigations, the Bank could be exposed to material fines, limitations on business, remedial undertakings and/or criminal prosecution, as well as risk to our reputation and potential loss of business as a result of extensive media attention.

We have received requests for information from regulatory and law enforcement agencies concerning our anti-financial crime controls over the past several years, both generally and in connection with specific clients, counterparties or incidents, including in the United States. Among the areas within the scope of these inquiries are client onboarding and KYC processes, transaction monitoring systems and procedures, processes concerning the decision to file or not to file a suspicious activity report, escalation procedures, and other related processes and procedures. The Bank is cooperating in these investigations. As a result of these investigations, the Bank could be exposed to material fines, limitations on business, remedial undertakings and/or criminal prosecution. In addition, media and market attention surrounding these inquiries can create reputational risks. We could in particular suffer diminished volumes of business as a result, which could have a material adverse effect on our financial condition and results of operations.

Guilty pleas by or convictions of us or our affiliates in criminal proceedings, or regulatory or enforcement orders, settlements or agreements to which we or our affiliates become subject, may have consequences that have adverse effects on certain of our businesses.

We and our affiliates have been and are subjects of criminal and regulatory enforcement proceedings. In particular, as part of the resolution of the investigation of the DOJ into misconduct relating to London interbank offered rates, our subsidiary DB Group Services (UK) Limited entered into a plea agreement with the DOJ in 2015, pursuant to which the company pled guilty to one count of wire fraud, and, subsequently, a judgment of conviction was issued against the company. Also, in connection with the KOSPI Index unwind matters, our subsidiary Deutsche Securities Korea Co. was convicted of vicarious corporate criminal liability in respect of spot/futures linked market manipulation by one of its employees; though the criminal trial verdict has been overturned on appeal, the Korean prosecutor's office has appealed the decision. We and our subsidiaries are also subjects of other criminal or regulatory enforcement proceedings or investigations.

Guilty pleas or convictions against us or our affiliates, or regulatory or enforcement orders, settlements or agreements to which we or our affiliates become subject, could lead to our ineligibility to conduct certain business activities. In particular, such guilty pleas or convictions could cause our asset management affiliates to no longer qualify as "qualified professional asset managers" ("QPAMs") under the QPAM Prohibited Transaction Exemption under ERISA, which exemption is relied on to provide asset management services to certain pension plans in connection with certain asset management strategies. While there are a number of statutory exemptions and numerous other administrative exemptions that our asset management affiliates may use to trade on behalf of ERISA plans, and in many instances they may do so in lieu of relying on the QPAM exemption, loss of QPAM status could cause customers who rely on such status (whether because they are legally required to do so or because we have agreed contractually with them to maintain such status) to cease to do business or refrain from doing business with us and could negatively impact our reputation more generally. For example, clients may mistakenly see the loss as a signal that our asset management affiliates are somehow no longer approved as asset managers generally by the U.S. Department of Labor ("DOL"), the agency responsible for ERISA, and cease to do business or refrain from doing business with us for that reason. This could have a material adverse effect on our results of operations, particularly those of our asset management business in the United States. On December 29, 2017, the DOL published an individual exemption permitting certain of our affiliates to retain their QPAM status despite both the conviction of DB Group Services (UK) Limited and the conviction of Deutsche Securities Korea Co. The exemption applies through April 17, 2021 but may terminate earlier if, among other things, we or our affiliates are convicted of crimes in other matters. The disqualification period arising from these convictions extends until April 17, 2027, so we will need to obtain a further exemption by April 18, 2021 to avoid a loss of QPAM status at that time. We have requested an extension of our current exemption, and the DOL has published for comment a proposed, three-year extension. If an extension were not to be granted, we face the potential for the adverse effects described above.

Other Risks

In addition to our traditional banking businesses of deposit-taking and lending, we also engage in nontraditional credit businesses in which credit is extended in transactions that include, for example, our holding of securities of third parties or our engaging in complex derivative transactions. These nontraditional credit businesses materially increase our exposure to credit risk.

As a bank and provider of financial services, we are exposed to the risk that third parties who owe us money, securities or other assets will not perform their obligations. Many of the businesses we engage in beyond the traditional banking businesses of deposit-taking and lending also expose us to credit risk.

In particular, much of the business we conduct through our Investment Bank corporate division entails credit transactions, frequently ancillary to other transactions. Nontraditional sources of credit risk can arise, for example, from holding securities of third parties; entering into swap or other derivative contracts under which counterparties have obligations to make payments to us; executing securities, futures, currency or commodity trades that fail to settle at the required time due to nondelivery by the counterparty or systems failure by clearing agents, exchanges, clearing houses or other financial intermediaries; and extending credit through other arrangements. Parties to these transactions, such as trading counterparties, may default on their obligations to us due to bankruptcy, political and economic events, lack of liquidity, operational failure or other reasons.

Many of our derivative transactions are individually negotiated and non-standardized, which can make exiting, transferring or settling the position difficult. Certain credit derivatives require that we deliver to the counterparty the underlying security, loan or other obligation in order to receive payment. In a number of cases, we do not hold, and may not be able to obtain, the underlying security, loan or other obligation. This could cause us to forfeit the payments otherwise due to us or result in settlement delays, which could damage our reputation and ability to transact future business, as well as impose increased costs on us. Legislation in the European Union (EMIR) and the United States (the Dodd-Frank Act) has introduced requirements for the standardization, margining, central clearing and transaction reporting of certain over-the-counter derivatives. While such requirements are aimed at reducing the risk posed to counterparties and the financial system by such derivatives, they may reduce the volume and profitability of the transactions in which we engage, and compliance with such provisions may impose substantial costs on us.

The exceptionally difficult market conditions experienced during the global financial crisis severely adversely affected certain areas in which we do business that entail nontraditional credit risks, including the leveraged finance and structured credit markets, and similar market conditions, should they occur, may do so in the future.

A substantial proportion of our assets and liabilities comprise financial instruments that we carry at fair value, with changes in fair value recognized in our income statement. As a result of such changes, we have incurred losses in the past, and may incur further losses in the future.

A substantial proportion of the assets and liabilities on our balance sheet comprise financial instruments that we carry at fair value, with changes in fair value recognized in the income statement. Fair value is defined as the price at which an asset or liability could be exchanged in an arm's length transaction between knowledgeable, willing parties, other than in a forced or liquidation sale. If the value of an asset carried at fair value declines (or the value of a liability carried at fair value increases) a corresponding unfavorable change in fair value is recognized in the income statement. These changes have been and could in the future be significant.

Observable prices or inputs are not available for certain classes of financial instruments. Fair value is determined in these cases using valuation techniques we believe to be appropriate for the particular instrument. The application of valuation techniques to determine fair value involves estimation and management judgment, the extent of which will vary with the degree of complexity of the instrument and liquidity in the market. Management judgment is required in the selection and application of the appropriate parameters, assumptions and modeling techniques. If any of the assumptions change due to negative market conditions or for other reasons, subsequent valuations may result in significant changes in the fair values of our financial instruments, requiring us to record losses.

Our exposure and related changes in fair value are reported net of any fair value gains we may record in connection with hedging transactions related to the underlying assets. However, we may never realize these gains, and the fair value of the hedges may change in future periods for a number of reasons, including as a result of deterioration in the credit of our hedging counterparties. Such declines may be independent of the fair values of the underlying hedged assets or liabilities and may result in future losses.

Pursuant to accounting rules, we must periodically test the value of the goodwill of our businesses and the value of our other intangible assets for impairment. In the event such test determines that criteria for impairment exists, we are required under accounting rules to write down the value of such asset. Impairments of goodwill and other intangible assets have had and may have a material adverse effect on our profitability results of operations.

Goodwill arises on the acquisition of subsidiaries and associates and represents the excess of the aggregate of the cost of an acquisition and any noncontrolling interests in the acquiree over the fair value of the identifiable net assets acquired at the date of the acquisition. Goodwill on the acquisition of subsidiaries is capitalized and reviewed for impairment annually or more frequently if there are indications that impairment may have occurred. Intangible assets are recognized separately from goodwill when they are separable or arise from contractual or other legal rights and their fair value can be measured reliably. These assets are tested for impairment and their useful lives reaffirmed at least annually. The determination of the recoverable amount in the impairment assessment of non-financial assets requires estimates based on quoted market prices, prices of comparable businesses, present value or other valuation techniques, or a combination thereof, necessitating management to make subjective judgments and assumptions. These estimates and assumptions could result in significant differences to the amounts reported if underlying circumstances were to change.

Impairments of goodwill and other intangible assets have had and may have a material adverse effect on our profitability and results of operations. Impairment of goodwill and other intangible assets was € 1.0 billion in 2019. The announcement of the strategic transformation in July 2019 triggered the impairment review of Deutsche Bank's goodwill. A worsening macro-economic outlook, including interest rate curves, industry-specific market growth corrections, as well as the impact related to the implementation of the transformation strategy resulted in the full impairment of the Wealth Management goodwill of € 545 million in the Private Bank and the Global Transaction Banking and Corporate Finance goodwill of € 492 million in the Corporate Bank in the second quarter of 2019.

Pursuant to accounting rules, we must review our deferred tax assets at the end of each reporting period. To the extent that it is no longer probable that sufficient taxable income will be available to allow all or a portion of our deferred tax assets to be utilized, we have to reduce the carrying amounts. These reductions have had and may in the future have material adverse effects on our profitability, equity and financial condition.

We recognize deferred tax assets for future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, unused tax losses and unused tax credits. Deferred tax assets are recognized only to the extent that it is probable that sufficient taxable profit will be available against which those unused tax losses, unused tax credits and deductible temporary differences can be utilized. As of December 31, 2020 and December 31, 2019, we recognized deferred tax assets of € 6.1 billion and € 6.0 billion, respectively.

In determining the amount of deferred tax assets, we use historical tax capacity and profitability information and, if relevant, forecasted operating results based upon approved business plans, including a review of the eligible carry-forward periods, available tax planning opportunities and other relevant considerations. The analysis of historical tax capacity includes the determination as to whether a history of recent losses exists at the reporting date, and is generally based on the pre-tax results adjusted for permanent differences for the current and the two preceding financial years. Each quarter, we re-evaluate our estimate related to deferred tax assets, including our assumptions about future profitability. The accounting estimate related to the deferred tax assets depends upon underlying assumptions about the historical tax capacity and profitability information, as well as forecasted operating results based upon approved business plans, which can change from period to period and requires significant management judgment. For example, tax law changes or variances in future projected operating performance could result in an adjustment to the deferred tax assets that would be charged to income tax expense or directly to equity in the period such determination was made.

These adjustments have had and may in the future have material adverse effects on our profitability or equity. In connection with the transformation, the Group adjusted the estimate related to deferred tax assets in affected jurisdictions, such as the UK and the United States, and recognized € 37 million and € 2.8 billion of valuation adjustments for the financial years ended December 31, 2020 and 2019, respectively.

We are exposed to pension risks which can materially impact the measurement of our pension obligations, including interest rate, inflation and longevity risks that can materially impact our earnings.

We sponsor a number of post-employment benefit plans on behalf of our employees, including defined benefit plans. Our plans are accounted for based on the nature and substance of the plan. Generally, for defined benefit plans the value of a participant’s accrued benefit is based on each employee’s remuneration and length of service. We maintain various external pension trusts to fund the majority of our defined benefit plan obligations. Our funding principle is to maintain funding of the defined benefit obligation by plan assets within a range of 90 % to 100 % of the obligation, subject to meeting any local statutory requirements. We have also determined that certain plans should remain unfunded, although their funding approach is subject to periodic review, e.g. when local regulations or practices change. Obligations for our unfunded plans are accrued on the balance sheet. For most of the externally funded defined benefit plans there are local minimum funding requirements. We can decide on any additional plan contributions, with reference to our funding principle. There are some locations, e.g. the United Kingdom, where the trustees and the Bank jointly agree contribution levels. We also sponsor retirement and termination indemnity plans in several countries, as well as some post-employment medical plans for a number of current and retired employees, mainly in the United States. The post-employment medical plans typically pay fixed percentages of medical expenses of eligible retirees after a set deductible has been met.

We develop and maintain guidelines for governance and risk management, including funding, asset allocation and actuarial assumption setting. In this regard, risk management means the management and control of risks for us related to market developments (e.g., interest rate, credit spread, price inflation), asset investment, regulatory or legislative requirements, as well as monitoring demographic changes (e.g., longevity). To the extent that pension plans are funded, the assets held mitigate some of the liability risks, but introduce investment risk. In our key pension countries, our largest post-employment benefit plan risk exposures relate to potential changes in credit spreads, interest rates, price inflation and longevity, although these have been partially mitigated through the investment strategy adopted. Overall, we seek to minimize the impact of pensions on our financial position from market movements, subject to balancing the trade-offs involved in financing post-employment benefits, regulatory capital and constraints from local funding or accounting requirements.

All plans are valued annually by independent qualified actuaries using the projected unit credit method, with inputs including the discount rate, inflation rate, rate of increase in future compensation and for pensions in payment and longevity expectations. In 2019, we conducted a review of the mortality assumptions used to determine the defined benefit obligation for its defined benefit pension plans in Germany. The intention of the review was to establish whether the tables “Richttafeln Heubeck 2018G” reflect the best estimate assumption for future mortality of the plan member population. Based on an analysis of mortality experience over the preceding five years, it was concluded that the “Richttafeln” have to be adjusted in order to reflect the underlying mortality of the pension plan population in Germany. This change in actuarial assumptions led to an actuarial loss of € 125 million before taxes as of December 31, 2019 and is reported in the Consolidated Statement of Comprehensive Income in the line item remeasurement gains (losses).

For the Group’s most significant pension plans in the key countries, the discount rate used at each measurement date is set based on a high quality corporate bond yield curve, which is derived using a bond universe sourced from reputable third-party index data providers and rating agencies, and reflects the timing, amount and currency of the future expected benefit payments for the respective plan. A review of the Eurozone discount rate derivation was instigated in March 2020 following unprecedented market turmoil, which resulted in several refinements to the methodology being implemented in 2020, initially in the first quarter 2020 and more fundamentally in the fourth quarter 2020 with the introduction of an internally produced DB Proprietary curve, which was employed as the basis for discounting the defined benefit obligation from December 31, 2020. Compared to the curve deployed at December 31, 2019, the DB Proprietary curve results in a defined benefit obligation that is € 20 million higher, with the impact recognised through Other Comprehensive Income. The defined benefit obligation was

€ 435 million lower as at December 31, 2020 compared to curve utilised as at June 30, 2020. Due to the change in discount rate methodology and other effects, the Group's net pension liability for the German pension plans was reduced by € 481 million from € 1,355 million as of December 31, 2019 to € 874 million as of December 31, 2020.

Our investment objective in funding the plans and our obligations in respect of them is to protect ourselves from adverse impacts of our defined benefit pension plans on key financial metrics. We seek to allocate plan assets closely to the market risk factor exposures of the pension liability to interest rates, credit spreads and inflation and, thereby, plan assets broadly reflect the underlying risk profile and currency of the pension obligations.

To the extent that the factors that drive our pension liabilities move in a manner adverse to us, or that our assumptions regarding key variables prove incorrect, or that our funding of our pension liabilities does not sufficiently hedge those liabilities, we could be required to make additional contributions or be exposed to actuarial or accounting losses in respect of our pension plans. More detailed information regarding our employee benefit plans is provided in Note 33, "Employee Benefits" of the consolidated financial statements.

Our risk management policies, procedures and methods leave us exposed to unidentified or unanticipated risks, which could lead to material losses.

We have devoted significant resources to developing our risk management policies, procedures and assessment methods and intend to continue to do so in the future. Nonetheless, the risk management techniques and strategies have not been and may in the future not be fully effective in mitigating our risk exposure in all economic market environments or against all types of risk, including risks that we fail to identify or anticipate. Some of our quantitative tools and metrics for managing risk are based upon our use of observed historical market behavior. We apply statistical and other tools to these observations to arrive at quantifications of our risk exposures. During the financial crisis, the financial markets experienced unprecedented levels of volatility (rapid changes in price direction) and the breakdown of historically observed correlations (the extent to which prices move in tandem) across asset classes, compounded by extremely limited liquidity. In this volatile market environment, our risk management tools and metrics failed to predict some of the losses we have experienced, and they may in the future fail to predict important risk exposures. In addition, our quantitative modeling does not take all risks into account and makes numerous assumptions regarding the overall environment, which may not be borne out by events. As a result, risk exposures have arisen and could continue to arise from factors we did not anticipate or correctly evaluate in our statistical models. This has limited and could continue to limit our ability to manage our risks especially in light of geopolitical developments, many of the outcomes of which are currently unforeseeable. Our losses thus have been and may in the future be significantly greater than the historical measures indicate.

In addition, our more qualitative approach to managing those risks not taken into account by our quantitative methods could also prove insufficient, exposing us to material unanticipated losses. Also, if existing or potential customers or counterparties believe our risk management is inadequate, they could take their business elsewhere or seek to limit their transactions with us. This could harm our reputation as well as our revenues and profits. See "Management Report: Risk Report" in the Annual Report 2020 for a more detailed discussion of the policies, procedures and methods we use to identify, monitor and manage our risks.

Operational risks, which may arise from errors in the performance of our processes, the conduct of our employees, instability, malfunction or outage of our IT system and infrastructure, or loss of business continuity, or comparable issues with respect to our vendors, may disrupt our businesses and lead to material losses.

We face operational risk arising from errors, inadvertent or intentional, made in the execution, confirmation or settlement of transactions or from transactions not being properly recorded, evaluated or accounted for. An example of this risk concerns our derivative contracts, which are not always confirmed with the counterparties on a timely basis. For so long as the transaction remains unconfirmed, we are subject to heightened credit and operational risk and in the event of a default may find it more difficult to enforce the contract.

In addition, our businesses are highly dependent on our ability to process manually or through our systems a large number of transactions on a daily basis, across numerous and diverse markets in many currencies. Some of the transactions have become increasingly complex. Moreover, management relies heavily on its financial, accounting and other data processing systems that include manual processing components. If any of these processes or systems do not operate properly, or are disabled, or subject to intentional or inadvertent human error, we could suffer financial loss, a disruption of our businesses, liability to clients, regulatory intervention or reputational damage.

We are also dependent on our employees to conduct our business in accordance with applicable laws, regulations and generally accepted business standards. If our employees do not conduct our business in this manner, we may be exposed to material losses. Furthermore, if an employee's misconduct reflects fraudulent intent, we could also be exposed to reputational damage. We categorize these risks as conduct risk, a term used to describe the risks associated with behavior by employees and agents, including third parties, that could harm clients, customers or the integrity of the markets, such as selling products

that are not suitable for a particular customer, fraud, unauthorized trading and failure to comply with applicable regulations, laws and internal policies. U.S. regulators in particular have been increasingly focused on conduct risk, and such heightened regulatory scrutiny and expectations could lead to investigations and other inquiries, as well as remediation requirements, more regulatory or other enforcement proceedings, civil litigation and higher compliance and other risks and costs.

We in particular face the risk of loss events due to the instability, malfunction or outage of our IT system and IT infrastructure, as well as breaches in IT system and infrastructure (including cyber-attacks). Such losses could materially affect our ability to perform business processes and may, for example, arise from the erroneous or delayed execution of processes as a result of system outages, degraded services in systems and IT applications or the inaccessibility of our IT systems. A delay in processing a transaction, for example, could result in an operational loss if market conditions worsen during the period after the error. IT-related errors may also result in the mishandling of confidential information, damage to our computer systems, financial losses, additional costs for repairing systems, reputational damage, customer dissatisfaction or potential regulatory or litigation exposure (including under data protection laws such as the GDPR).

The move across global industries to conduct business from home and away from primary office locations in response to the COVID-19 pandemic continues to put pressure on business practices, and the demand on our technology infrastructure. Additionally, the current situation also exposes us to a greater risk of cyber-attacks, which could lead to technology failures, security breaches, unauthorized access, loss or destruction of data or unavailability of services, as well as increase the likelihood of conduct breaches.

Business continuity risk is the risk of incurring losses resulting from the interruption of normal business activities. We operate in many geographic locations and are frequently subject to the occurrence of events outside of our control. Despite the contingency plans we have in place, our ability to conduct business in any of these locations may be adversely impacted by a disruption to the infrastructure that supports our business, whether as a result of, for example, events that affect our third party vendors or the community or public infrastructure in which we operate. Any number of events could cause such a disruption including deliberate acts such as sabotage, terrorist activities, bomb threats, strikes, riots and assaults on the bank’s staff; natural calamities such as hurricanes, snow storms, floods, disease pandemics (such as the current COVID-19 pandemic) and earthquakes; or other unforeseen incidents such as accidents, fires, explosions, utility outages and political unrest. Any such disruption could have a material adverse effect on our business and financial position.

We utilize a variety of third parties in support of our business and operations. Services provided by third parties pose risks to us comparable to those we bear when we perform the services ourselves, and we remain ultimately responsible for the services our third parties provide. Furthermore, if a third party does not conduct business in accordance with applicable standards or our expectations, we could be exposed to material losses or regulatory action or litigation or fail to achieve the benefits we sought from the relationship.

We utilize a variety of third parties in support of our business and operations. We do so in order to focus on our core competencies and to seek improvements in costs, efficiency and effectiveness in our operations, for instance in connection with our IT modernization efforts. The nature of what we use third parties for has also evolved and now includes more fundamental aspects of services and infrastructure such as “Cloud” internet technology. This in itself represents different risks and requires more robust risk assessments, appropriate contracting and ongoing oversight commensurate with relevant risks. It has also led to an understandable, steady increase in regulation and regulatory scrutiny over how we manage their third parties.

Services provided by third parties pose risks to us comparable to those we bear when we perform the services ourselves, and we remain ultimately responsible for the services the third parties provide. We depend on such third parties to conduct their delivery of services in compliance with applicable laws, regulations and generally accepted business standards and in accordance with the contractual terms and service levels they have agreed with us. If the third parties do not conduct business in accordance with these standards, we may be exposed to material losses and could be subject to regulatory action or litigation as well as be exposed to reputational damage. More generally, if a third party relationship does not meet our expectations, we could be exposed to financial risks, such as the costs and expenses associated with migration of the services to another third party and business and operational risks related to the transition, and we could fail to achieve the benefits we sought from the relationship.

Our operational systems are subject to an increasing risk of cyber-attacks and other internet crime, which could result in material losses of client or customer information, damage our reputation and lead to regulatory penalties and financial losses.

Among the operational risks we face is the risk of breaches of the security of our or our vendors’ computer systems due to unauthorized access to networks or resources, the introduction of computer viruses or malware, or other forms of cybersecurity attacks or incidents. Such breaches could threaten the confidentiality of our or our clients’ data and the integrity of our systems. We devote significant resources toward the protection of our computer systems against such breaches and toward ensuring that our vendors employ appropriate cybersecurity safeguards. To address the evolving cyber threat risk, we have expended

significant resources to modify and enhance our protective measures and to investigate and remediate any information security vulnerabilities. These measures, however, may not be effective against the many security threats we face.

The increasing frequency and sophistication of recent cyber-attacks has resulted in an elevated risk profile for many organizations around the world, and significant attention by our management has been paid to the overall level of preparedness against such attacks. Cybersecurity is growing in importance due to factors such as the continued and increasing reliance on our technology environment. We and other financial institutions have experienced attacks on computer systems, including attacks aimed at obtaining unauthorized access to confidential company or customer information or damaging or interfering with company data, resources or business activities, or otherwise exploiting vulnerabilities in our infrastructure. We expect to continue to be the target of such attacks in the future. Although we have to date not experienced any material business impact from these attacks, we may not be able to effectively anticipate and prevent more material attacks from occurring in the future. The move across global industries to conduct business from home and away from primary office locations in response to the COVID-19 pandemic also exposes us to a greater risk of cyber-attacks, which could lead to technology failures, security breaches, unauthorized access, loss or destruction of data or unavailability of services. A successful attack could have a significant negative impact on us, including as a result of disclosure or misappropriation of client or proprietary information, damage to computer systems, an inability to access information technology (IT) systems, financial losses, remediation costs (such as for investigation and re-establishing services), increased cybersecurity costs (such as for additional personnel, technology, or third-party vendors), personal data breach notification obligations, reputational damage, customer dissatisfaction and potential regulatory or litigation exposure.

The size of our clearing operations exposes us to a heightened risk of material losses should these operations fail to function properly.

We have large clearing and settlement businesses and an increasingly complex and interconnected information technology (IT) landscape. These give rise to the risk that we, our customers or other third parties could lose substantial sums if our systems fail to operate properly for even short periods. This will be the case even where the reason for the interruption is external to us. In such a case, we might suffer harm to our reputation even if no material amounts of money are lost. This could cause customers to take their business elsewhere, which could materially harm our revenues and profits.

Ongoing global benchmark reform efforts, specifically the transition from interbank offered rates to alternative reference rates, including “risk-free-rates”, introduce a number of inherent risks to our business and the financial industry. These risks, should they materialize, may have adverse effects on our business, results of operations and profitability.

Regulators and central banks have set the goal of improving the robustness of financial benchmarks, especially interest rate benchmarks. As a result of this initiative, the ongoing availability of LIBOR and other benchmarks (together “IBORs”) is uncertain. Some reforms have already come into effect (such as the recent Central Counterparties (CCP) switch to Secured Overnight Funding Rate (SOFR) discounting from Fed Funds) while others are still to be implemented or are under consideration. For example, in December 2020, the LIBOR administrator consulted on its intention to cease publication of GBP, CHF, JPY, EUR and certain USD settings after December 31, 2021, and additionally to cease publication of the remaining USD LIBOR settings after June 30, 2023. These reforms may cause IBORs to perform differently than in the past, or to disappear entirely, or have other consequences, which cannot be fully anticipated. Regulators such as the FCA and CFTC have strongly urged market participants to transition to alternative risk-free rates (“RFRs”). As of October 2, 2019, the administrator of EONIA has changed the way it calculates EONIA, so that it is now based on the “€STR” euro short-term rate”; nonetheless, EONIA is scheduled to cease to exist as of January 3, 2022. In 2019, EURIBOR was reformed to comply with the EU financial benchmarks regulation, and continues to be available.

A material portion of our assets and liabilities, including financial instruments we trade and other transactions and services we are involved in, have interest rates that are linked to IBORs that may be subject to potential discontinuation, requiring us to prepare for such discontinuation and for a transition to RFRs. Transition of legacy transactions will depend, in some cases on client engagement and agreement to spread adjustments, which may not be forthcoming. In some cases, transition of legacy products may be hampered by structural factors, such as technical inability to contact numerous bondholders. Those difficult cases are referred to as “tough legacy”. To address tough legacy products, legislative proposals have been made in EU, and the State of New York. In addition, the FCA is consulting on production of “synthetic” LIBORs, which will be calculated according to a different methodology but which may be published to enable roll-off of tough legacy products. The transition and uncertainties around the timing and manner of transition to RFRs represent a number of risks for us, our customers and the financial services industry more widely. The discontinuation of these IBORs and the transition to RFRs pose a variety of risks to us, including the following:

- Legal and compliance risk (including conduct risk) may arise due to possible disputes regarding either the terms of financial contracts with counterparties, or the manner of transition to replacement rates. Many financial instruments linked to IBORs contain provisions for the use of a successor interest rate in the event of the discontinuation of such IBORs, while others do not. In connection with such a discontinuation and transition, the counterparty to the financial instrument may challenge the rate determined for such instrument, particularly if we are involved in the determination or setting of the successor rate,

whether in respect of the particular financial instrument or generally. Such disputes could result in litigation or regulatory action founded in claims of, breach of contract, anti-trust violations, market abuse and/or other mistreatment of customers.
- Liquidity risk may arise due to slow acceptance, take-up, and development of liquidity in RFR-related products, leading to market dislocation or fragmentation. Additionally, bid/offer spreads may widen impacting funding and collateral postings. Similar risks may apply to IBOR exposure toward the date of any discontinuation, or in relation to tough-legacy products which are locked into synthetic LIBOR, which may perform differently than LIBOR.
- Also, replacement of IBORs with a new benchmark rate, or being locked into a synthetic LIBOR, could adversely impact the value of and return on existing instruments and contracts and the market for securities and other instruments whose returns are linked to IBOR benchmarks.
- Market risk may arise due to interest rate “basis” risks – the risks posed by different interest rate provisions applying to assets than to liabilities – across tenors and currencies, driven by differing fallback methodologies and timings. Different timings of adoption of fallback protocols will create new basis risk and potentially make hedging more costly or less effective, and losses may result from value transfer in the fallback methodology adopted. In the event of discontinuation of IBORs and a transition to a successor interest rate, we may incur losses in respect of our assets and liabilities linked to IBORs if the successor interest rate is not economically equivalent to the discontinued IBORs.
- Introduction of new RFRs will require us to develop new pricing and risk models related to new RFR-linked products. The models we develop may require approval by competent regulators if they differ significantly from existing models, which may introduce delays.
- Finance and tax risk may arise due to the discontinuation of IBORs and transition to RFRs, which could cause hedge accounting items to be derecognized, adversely impacting our profitability or causing us to incur losses. Discontinuation and transition could also pose difficulties for the independent price verification of financial instruments, where market data is unavailable for the new or modified financial instrument. Tax uncertainties could arise, for example, if a discontinuation or transition is viewed as a significant modification of a financial instrument that results in a profit or loss recognition event for tax purposes.
- Technology and operational risk may arise as a result of the complexity of transition processes, which will require collaboration with our regulators and central banks as well as a wide range of market participants. Also, significant change efforts – relating to RFR product development, re-documentation of client contracts and infrastructure change, including to systems, processes and models across the business and our Finance, Risk and Treasury functions –, will be required. There is a risk that not all systems and process dependencies on IBOR availability are identified and remediated. Successful transition processes are, to some extent, dependent on achieving industry and client consensus on standards and conventions, timing and sequencing of transition steps, creation of term versions of the RFRs and the timely re-documenting of client contracts.

It is therefore currently difficult to determine to what extent the changes will adversely affect us, or the costs of implementing any relevant remedial action. Uncertainty as to the nature and extent to such potential changes, alternative reference rates or other reforms including the potential continuation of the publication of synthetic LIBORs may adversely affect financial instruments using IBORs as benchmarks. The implementation of any alternative RFRs may be impossible or impracticable under the existing terms of such financial instruments and could have an adverse effect on the value of, return on the trading market for certain financial instruments and on our profitability. There is also the risk of an adverse effect to reported performance arising from the transition rules established by accounting bodies.

More broadly, initiatives to reform existing benchmarks and our participation in them, including as benchmark submitter, could potentially expose us to legal, reputational or other risks. In particular, legal and compliance risk (including conduct risk) may arise due to the operational risks of participating in benchmark submissions, either as part of a panel with the requirement to use models and potentially exercise expert judgement or as provider of transactions data to a benchmark administrator.

The necessity and potential timing of the discontinuation of IBORs, the prospects for transition to RFRs in the various markets in which they would be required, and industry, market and regulatory response, remain highly uncertain. Also, as mentioned, there are external factors, such as required actions of regulators or counterparties, which create risks that an individual institution, or the industry as a whole, would find difficult to address. Depending how such contingencies develop, and the adequacy of the response of the industry, the market, regulators and us to them, the discontinuation of IBORs and transition to RFRs could have adverse effects on our business, results of operations and profitability.

We are subject to laws and other requirements relating to financial and trade sanctions and embargoes. If we breach such laws and requirements, we can be subject, and have in the past been subject, to material regulatory enforcement actions and penalties.

We are required to monitor, evaluate, and observe laws and other requirements relating to financial and trade sanctions and embargoes set by the EU, the Deutsche Bundesbank, Germany’s Federal Office for Economic Affairs and Export Control, and other authorities, such as the U.S. Treasury Department’s Office of Foreign Assets Control (OFAC) and the UK Treasury Department. If we breach such laws and requirements, we can be subject, and have in the past been subject, to material regulatory enforcement actions and penalties.

Transactions with counterparties in countries designated by the U.S. State Department as state sponsors of terrorism or persons targeted by U.S. economic sanctions may lead potential customers and investors to avoid doing business with us or investing in our securities, harm our reputation or result in regulatory or enforcement action which could materially and adversely affect our business.

We engage or have engaged in a limited amount of business with counterparties, including government-owned or -controlled counterparties, in certain countries or territories that are subject to comprehensive U.S. sanctions, including Iran and Cuba (referred to as “Sanctioned Countries”), or with persons targeted by U.S. economic sanctions (referred to as “Sanctioned Persons”). U.S. law generally prohibits U.S. persons or any other persons acting within U.S. jurisdiction from doing business with Sanctioned Countries or Sanctioned Persons. Additionally, U.S. indirect or “secondary” sanctions threaten retaliation against certain activities, including categories of transactions with certain entities and countries, by non-U.S. persons entirely outside of U.S. jurisdiction. Thus, U.S. regulations may extend to activities in other geographic areas and by non-U.S. persons depending on the circumstances. Our U.S. subsidiaries, branch offices, and employees are, and our non-U.S. subsidiaries, branch offices, and employees may become, subject to those prohibitions and other regulations.

We are a German bank and our activities with respect to Sanctioned Countries and Sanctioned Persons have been subject to policies and procedures designed to avoid the involvement of persons acting under U.S. jurisdiction in any managerial or operational role and to ensure compliance with United Nations, European Union and German sanctions and embargoes; in reflection of legal developments in recent years, we have further developed our policies and procedures with the aim of ensuring – to the extent legally permitted – compliance with regulatory requirements extending to other geographic areas regardless of jurisdiction. However, should our policies prove to be, or have been, ineffective, we may be subject to regulatory or enforcement action that could materially and adversely affect our reputation, financial condition, or business. We have taken action to reduce the risk of compliance violations. In 2007, our Management Board decided that we will not engage in new business with counterparties in countries such as Iran, Syria, Sudan and North Korea and to exit existing business to the extent legally possible. It also decided to limit our business with counterparties in Cuba. Iran, North Korea, Syria and Cuba are currently designated as state sponsors of terrorism by the U.S. State Department.

We had a representative office in Tehran, Iran, which we discontinued on December 31, 2007. Our remaining business with Iranian counterparties consisted mostly of participations as lender and/or agent in a few large trade finance facilities arranged before 2007 to finance the export contracts of exporters in Europe and Asia. As of December 31, 2018, those loans were fully paid back, subsequently the majority of the remaining Iranian business consists of legacy contractual obligations related to guarantees. We do not believe our business activities with Iranian counterparties are or had been material to our overall business, with the aforementioned guarantees having notional amounts of substantially less than 0.01 % of our total assets over recent years. As of December 31, 2020, the revenues from such activities represented substantially less than 0.01 % of our total revenues for the year ended December 31, 2020.

As required by Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012 (Section 13(r) of the Securities Exchange Act of 1934, as amended) we have disclosed certain information regarding our activities or transactions with persons subject to U.S. sanctions against Iran and other persons subject to such provision. Such disclosure is set forth in the section of this document entitled “Disclosures Under Iran Threat Reduction and Syria Human Rights Act of 2012”, which follows “Item 16H: Mine Safety Disclosure”.

We are also engaged in a limited amount of business with counterparties domiciled in Cuba, which is not subject to any United Nations, European Union or German embargoes. The business consists of a limited number of letters of credit and of cash payments, each without a U.S. nexus, and it represented substantially less than 0.01 % of our assets as of December 31, 2020. The letters of credit served to finance commercial products such as machinery as well as medical products.

We have set up appropriate processes and procedures aimed at complying with other substantial changes in U.S. economic sanctions that have occurred since 2017. In August 2017, the United States enacted the “Countering America’s Adversaries Through Sanctions Act” (referred to as “CAATSA”), which codifies existing U.S. sanctions against Russia (including designation of Russian entities under U.S. sanctions), expands U.S. secondary sanctions against Russia, tightens existing sectoral sanctions (targeting specific sectors of the Russian economy), and permits the imposition of sectoral sanctions against additional sectors of the Russian economy. In particular, expanded U.S. secondary sanctions under CAATSA allow for the imposition of U.S. sanctions on non-U.S. entities who engage in “significant” transactions with Russian specially designated nationals (SDNs) or specific entities in the Russian defense and intelligence sectors. We do not believe we have engaged or are currently engaged in any transactions with Russian entities that violate, or are sanctionable under, U.S. sanctions. However, given the broad discretion U.S. authorities have in interpreting and enforcing U.S. sanctions, there can be no assurances that U.S. authorities will not bring enforcement actions against us, or impose secondary sanctions on us for our ongoing activities. Any such actions could have a material impact on our business and harm our reputation. It is also possible that the United States could impose broader sanctions on Russia or Russian entities in the future and that such sanctions could have a material impact on our business activities.

Additionally, since 2017, the U.S. Administration has imposed a number of sanctions against the Government of Venezuela and Venezuelan officials. These sanctions prohibit (beginning on August 5, 2019) virtually all unlicensed transactions involving the Government of Venezuela, including state owned or state controlled companies, and also threaten to impose regulations on (non-U.S.) persons having materially assisted such transactions or dealings. We have taken steps and established processes and procedures aimed at complying with these U.S. sanctions against the Government of Venezuela. In response to these U.S. sanctions, we have wound down several client relationships. With respect to entities of the Government of Venezuela, we are currently only engaged in legacy transactions. We do not believe that any of our remaining activities related to the Government of Venezuela violate U.S. sanctions. However, given the broad discretion U.S. authorities have in interpreting and enforcing U.S. sanctions, there can be no assurances that U.S. authorities do not allege that our ongoing activities violate U.S. sanctions.

Political and trade tensions between the United States and China led to a series of sanctions and countermeasures in 2020 through the end of the Trump Administration in early 2021, some of which are particularly relevant to financial institutions. In November 2020, the United States adopted Executive Order 13959, which restricts and ultimately bars investment by U.S. persons in publicly traded securities of companies the United States determines are affiliated with the Chinese military, as well as related derivatives and indirect investments through funds. These authorities are new and not yet well-defined, and their ultimate impact on financial markets and financial institutions remains unclear. Given the high complexity of these sanctions regulations, there can be no assurance that U.S. authorities will not consider the control measures which we have taken as insufficient.

We are aware, through press reports and other means, of initiatives by governmental and non-governmental entities in the United States and elsewhere to adopt laws, regulations or policies prohibiting transactions with or investment in, or requiring divestment from, entities doing business with Sanctioned Countries, particularly China, Iran and Russia. Such initiatives may result in our being unable to gain or retain entities subject to such prohibitions as customers or as investors in our securities. In addition, our reputation may suffer due to our association with such countries. Such a result could have significant adverse effects on our business or the price of our securities. It is also possible that new direct or indirect secondary sanctions could be imposed by the United States or other jurisdictions without warning as a result of geopolitical developments.

Item 4: Information on the Company

History and Development of the Company

The legal and commercial name of our company is Deutsche Bank Aktiengesellschaft. It is a stock corporation organized under the laws of Germany.

Deutsche Bank Aktiengesellschaft originated from the reunification of Norddeutsche Bank Aktiengesellschaft, Hamburg, Rheinisch-Westfälische Bank Aktiengesellschaft, Düsseldorf, and Süddeutsche Bank Aktiengesellschaft, Munich. Pursuant to the Law on the Regional Scope of Credit Institutions, these were disincorporated in 1952 from Deutsche Bank, which had been founded in 1870. The merger and the name were entered in the Commercial Register of the District Court Frankfurt am Main on May 2, 1957.

We are registered under registration number HRB 30 000. Our registered address is Taunusanlage 12, 60325 Frankfurt am Main, Germany, and our telephone number is +49-69-910-00. Our agent in the United States is: DB USA Corporation, c/o Office of the Secretary, 60 Wall Street, Mail Stop NYC60-4099, New York, NY 10005.

For information on significant capital expenditures and divestitures, please see “Management Report: Operating and Financial Review: Deutsche Bank Group: Significant Capital Expenditures and Divestitures” in the Annual Report 2020.

The Securities and Exchange Commission (“SEC”) maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, such as Deutsche Bank Aktiengesellschaft, with the address http://www.sec.gov. Our filings are available on the SEC’s Internet site under File Number 001-15242. Our Internet address is http://www.db.com.

Business Overview

Our Organization

Please see “Management Report: Operating and Financial Review: Deutsche Bank Group: Our Organization” in the Annual Report 2020. For information on net revenues by geographic area and by corporate division please see Note 4 “Business Segments and Related Information: Entity-Wide Disclosures” to the consolidated financial statements and “Management Report: Operating and Financial Review: Results of Operations: Segment Results of Operations” in the Annual Report 2020.

Management Structure

Please see “Management Report: Operating and Financial Review: Deutsche Bank Group: Management Structure” in the Annual Report 2020.

Our Business Strategy

In July 2019, we announced a strategic transformation of Deutsche Bank, designed to significantly improve sustainable returns to shareholders. This strategy is underpinned by four specific objectives. First, to refocus Deutsche Bank around four core businesses, focusing on key areas of strength and on more predictable revenue sources while exiting business areas unlikely to produce adequate returns. Second, to reduce our adjusted costs and improve the efficiency and effectiveness of our infrastructure. Third, to reinvigorate the leadership and spirit of the bank by enabling faster decision-making, increasing discipline in execution and unleashing Deutsche Bank’s entrepreneurial culture. Finally, we established the Capital Release Unit to liberate capital consumed by low return assets and businesses that earn insufficient returns or that are no longer core to our strategy, by liberating capital in an economically rational manner.

Progress towards our strategic transformation

In July 2019, we identified the transformation steps that we would take by the end of 2022. In 2020, we made substantial progress regarding our strategic transformation notwithstanding the challenges associated with the protracted COVID-19 pandemic. By the end of 2020, we had put 85 % of these transformation related costs behind us. We have continued to deliver against all our financial targets and milestones in 2020, supported by our ongoing disciplined execution of our strategic agenda. In addition, in 2020 we signed a multi-year partnership with Google Cloud which will help transform our IT infrastructure into

a more efficient cloud-based environment. We completed the legal entity merger of DB Privat- und Firmenkundenbank AG into Deutsche Bank AG and launched the International Private Bank (IPB) by combining Wealth Management and Private & Commercial Business International into one unit. We announced our decision to reduce Deutsche Bank's branded network from around 500 to approximately 400 branches in Germany and the sale of Postbank Systems AG, which is intended to lead to a reduction in future stranded costs. In the Private Bank, we agreed balance of interest agreements with our workers council in Germany, which will allow us to further rationalize our head office and operations functions in Germany. We have extended our insurance partnerships with Talanx and Zurich Insurance Group to sustainably optimize our insurance offerings for our customers and to strengthen our sources of fee income. The creation of our German Business Banking unit in the Corporate Bank will help us serve our 800,000 small business clients.

Our delivery record is setting us up for the next phase of our transformation which will focus on ensuring sustainable profitability by growing our businesses while maintaining cost discipline as well as risk and balance sheet management and control.

Sustaining revenue growth in our Core Bank

Our strategic transformation is designed to refocus our Core Bank around market leading businesses, which operate in growing markets with attractive return potential. Our Core Bank comprises our four core operating divisions, namely the Corporate Bank, the Investment Bank, the Private Bank, and Asset Management, together with the segment Corporate & Other.

Our Corporate Bank is our 'global Hausbank' combining a strong home market with a network across 151 countries, Our refocused Investment Bank is a top global player in fixed income and financing where we have demonstrated our strengths in 2020. In addition, we have a focused Origination & Advisory business, including a leading position in Debt Capital Markets. Our Private Bank is the leader in our home market, has strong positions in major European countries and a global Wealth Management franchise. Another leading business in our home market is our asset manager, DWS.

Revenues in our Core Bank of € 24.2 billion and for Group € 24 billion in 2020 increased by 6 % and 3.7 % respectively compared to the prior year. We acknowledge there are additional headwinds we are facing, compared to the original assumptions we made at the time of our strategy announcement in 2019. The most significant of these is the lower interest rate environment, which continues to pose a risk to our revenues, as the movements in forward interest rate curves has reduced our revenue forecasts through 2022. We expect that our refocused business model across the Core Bank can offset some of these challenges, as we focus on growing our market share with our top institutional, corporate and retail clients.

The Corporate Bank made progress in offsetting the impact of interest rate headwinds, including the implementation of deposit repricing measures. The Investment Bank's performance momentum experienced in the first half of 2020 continued into the second half of the year. Revenues grew as a result of continued client re-engagement and further progress on our strategic objectives, underpinned by strong market conditions, and in part by the partnership with the Corporate Bank. The Private Bank offset the interest rate headwinds and the negative impacts of the COVID-19 pandemic with growth in volumes across loans, investment and insurance products. In Asset Management, DWS continued to see strong inflows in its core focus areas, including inflows through its strategic partners and into its Environmental, Social and Governance (ESG) funds.

Continuing to deliver on cost reduction targets

We continued to be highly focused on costs. In 2020, noninterest expenses were € 21.2 billion, a year-over-year decrease of € 3.9 billion or 15 %. Adjusted costs excluding transformation charges and expenses eligible for reimbursement related to Prime Finance were € 19.5 billion, a year over year reduction of € 2 billion or 9 %, thus meeting our near-term objective of adjusted costs excluding transformation charges and expenses eligible for reimbursement related to Prime Finance of € 19.5 billion in 2020.

During the next phase of our transformation we expect further savings from central and divisional measures, some of these as responses to COVID-19, for example from an examination of our real estate footprint and lower travel costs. In addition, we plan to focus on tackling costs in our Capital Release Unit. We have therefore tightened our adjusted cost target excluding transformation charges for 2022 to € 16.7 billion, revised from € 17 billion.

Continued balance sheet reductions in the Capital Release Unit

The Capital Release Unit (CRU) was created in July 2019. The CRU's principal objectives are to liberate capital consumed by low return assets and businesses that earn insufficient returns or activities that are no longer core to our strategy by liberating capital in an economically rational manner. In addition, the CRU is focused on reducing costs.

In 2020, the CRU continued to execute its asset reduction program and to work towards the migration of Deutsche Bank's Prime Finance and Electronic Equities clients, while reducing cost.

Risk weighted assets were € 34 billion at the end of the fourth quarter of 2020, representing an € 11 billion reduction from the fourth quarter of 2019. Leverage exposure was € 72 billion at the end of the fourth quarter of 2020, representing a € 55 billion reduction from the fourth quarter of 2019.

From time to time client transactions can be transferred from the Capital Release Unit to the Investment Bank within the Core Bank to preserve franchise client relationships. These transfers are effected on an arm's length equivalent basis between segments. In 2020, such transactions totalled € 1.5 billion of Risk Weighted Assets and € 4.6 billion of Leverage Exposure excluding leverage allocations.

For the full year 2020, noninterest expenses in the CRU declined by € 1.5 billion or 43 % versus the prior year, reflecting lower service cost allocations, lower transformation charges and lower restructuring and severance charges. In the same period, adjusted costs excluding transformation charges declined by € 0.9 billion or 33 % versus the prior year, reflecting lower service cost allocations, lower compensation and lower non-compensation costs such as professional fees and market data.

Through the year, further simplification of the division's infrastructure was achieved through decommissioning of applications and closing of books and cost centers.

Conservative balance sheet management

We remain committed to managing our balance sheet conservatively as we execute on our strategic transformation and navigate through the COVID-19 pandemic. At the end of 2020, the CET1 ratio was 13.6 %, 4 basis points lower compared to last year and 316 basis points above the regulatory CET1 requirements, principally driven by lower than anticipated credit risk weighted assets (RWAs) and benefits from regulatory measures including the EU's 'Quick Fix' to Capital Requirement Regulation (CRR Quick fix). For 2022, we remain committed to maintaining our CET1 ratio above 12.5 %.

The CRR Quick fix, the ECB's decision to temporarily exclude certain eligible central bank exposures from the Leverage calculation due to the COVID-19 pandemic, was a benefit to the Leverage ratio (fully loaded). These factors led to an increase in the Leverage ratio (fully loaded) to 4.7 % by the end of 2020. Without the Quick fix adjustment our Leverage ratio (fully loaded) was 4.3 % and Leverage ratio (phase-in) was 4.4 %. As we plan to offset the additional interest rate headwinds with revenue opportunities we have updated our 2022 Leverage ratio target to 4.5 %, still comfortably above regulatory requirements.

Liquidity reserves increased by € 21 billion year-over-year to € 243 billion at the end of 2020, mainly as a result deposit growth, participation in Central Bank liquidity facilities as well as continued deleveraging of CRU. The Liquidity Coverage Ratio rose to 145 % in the year 2020, a surplus to regulatory requirements of € 66 billion.

We believe that our risk levels are conservative with Value-at-Risk (VaR) in our Group at € 46 million at the end of 2020, based on the Historical Simulation Model implemented in the fourth quarter of 2020.

Provisions for credit losses were in line with our expectations at 41 basis points as a percentage of average loans for the full year 2020. Provisions for credit losses in 2020 were impacted by the COVID-19 pandemic and had a negative effect on our Expected Credit Loss (ECL) estimates and we expect these factors to continue in 2021. For 2022, we expect provisions for credit losses of between 25 to 30 basis points as a percentage of average loans, as the economy recovers and provision levels normalize. We remain committed to our stringent underwriting standards and our tight risk management framework. Further details on the calculation of ECL is provided in the section 'Risk Report' in the Annual Report 2020.

Our Sustainability strategy

Sustainability has become a central component of the bank's strategy, which we set in July 2019. Since then we have made significant progress in embedding sustainability into our business practices, focusing on the following four dimensions: sustainable finance; policies & commitments; our own operations and through leadership and engagement. In 2020, we set a target of achieving € 200 billion in sustainable financing and ESG investment by year-end 2025 (excluding asset under management managed by our Asset Management).

In 2020, we further improved our sustainability governance structure by establishing a Sustainability Committee. The committee, chaired by our Chief Executive Officer (CEO), began its work in late October, 2020 and meets once a month. While the Sustainability Committee is the highest decision-making forum for all major sustainability initiatives, the Sustainability Council – established in 2018 – remains an important governance body. It does preparatory work for the Sustainability Committee's decisions, coordinates their implementation, and oversees the work streams aligned to the four dimensions of our sustainability strategy. The Council is composed of executives from across all four business divisions as well as all infrastructure functions and also meets on a monthly basis.

Our Supervisory Board and our Management Board reinforced the bank’s sustainability ambition by tying our top-level executives’ compensation to further non-financial criteria from 2021 onwards. The awards have been extended with several ESG objectives such as the volumes for sustainable financing and ESG investments and reducing own power consumption in our buildings. A sustainability rating index comprising five large rating agencies will also be considered in the Short-term Awards. Per the Shareholder Rights Directive II we will publish and propose amendments to the Management Board’s compensation framework to the 2021 Annual General Meeting.

- For the first time, we have published quantifiable targets for expanding our sustainable business activities. By the end of 2025, the Bank plans to increase its volume of sustainable financing plus its portfolio of ESG investments under management to over € 200 billion. We have also defined annual growth targets. We will report annually on our overall progress toward the € 200 billion target.
- Following the announcement of our sustainable finance target, we established a Sustainable Finance Framework. The Framework defines comprehensive rules for classifying our financing offers and products as sustainable and is aligned to the Green and Social Bond Principles of the International Capital Market Association as well as towards the EU Taxonomy.
- We are continuously growing our involvement in sustainable finance. According to Dealogic, in 2020, we partnered with a number of global clients to support their sustainable bond transactions, such as green, social, sustainability, and sustainability-linked bonds. We helped our clients raise more than € 83 billion of funding in sustainable bond instruments, of which Deutsche Bank underwrote almost € 16 billion. We climbed the League Table for Euro-denominated sustainable bonds and finished the year in sixth place, making us one of the fastest growing players in this strategic market.
- Furthermore, in June 2020 we successfully placed our first green bond. It was issued under our Green Bond Framework, which is based on the Green Bond Principles of the International Capital Market Association (ICMA) as well as on the latest guidance on the EU Taxonomy developed by the European Union's Technical Expert Group on Sustainable Finance. The framework enables us to finance green assets, including loans to and investments in companies, assets, and projects relating to renewable energy, energy efficiency, and sustainable buildings.
- We have made significant progress with our rules and policies. We have adopted the Equator Principles and strengthened our Fossil Fuel Policy. We intend to end our global business activities with regard to financing as well as capital market transactions in coal mining by 2025 at the latest.
- Our strengthened Fossil Fuel Policy will also support our commitment to align our credit portfolios with the goals of the Paris Agreement, which we entered by joining the German financial sector’s collective commitment to climate action in June this year.
- We committed to expanding the use of electricity from renewable sources for our own operations from approximately 80 % currently, to 100 % by 2025 globally.

We remain committed to working on all dimensions of our sustainability strategy and increasing our sustainable product and services offerings.

Impact of COVID-19 on our financial targets and client franchise

The COVID-19 pandemic has led to changes in the macroeconomic and fiscal environment. These changes have impacted Deutsche Bank’s operating environment, as changes to customer behavior have impacted transaction volumes and associated management of capital and risk. We remain prudent in our approach to risk management, with a CET1 ratio of 13.6 %, a Leverage ratio of 4.7 % and a Liquidity Coverage Ratio of 145 %, € 66 billion above our regulatory requirement.

The current economic environment is expected to continue and to result in pressures on the bank’s capital ratios and financial performance. In particular, the COVID-19 related downside risks dominated our macroeconomic business environment in 2020 and remained elevated over the year-end. Also, 2020 has finished with significant GDP contraction across major economies compared to 2019. On that basis, we continue to see downside risks throughout the global economy, as ongoing regional and national lockdowns impact macro-economic activity on a global basis.

Despite these challenges, we believe we have implemented high risk management standards in our businesses. We have continued to make progress against our key transformation objectives, while continuing to serve our clients‘ financing needs. In addition, we have been the most active bank in the German program for government-sponsored loans (KfW).

We recognize that going forward, execution risks of our strategy have risen due to the prolonged macro-economic uncertainty from the impact of COVID-19. However, the strength of our businesses and our refocused business model are expected to support offsetting these headwinds. We remain committed to working towards our targets for a Post-tax Return on Average Tangible Equity of 8 % for the Group and of above 9 % for the Core Bank by 2022.

Our Financial Targets

Our financial targets are based on our financial results prepared in accordance with the International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB") and endorsed by the European Union ("EU"). The financial information included in this Annual Report on Form 20-F, by contrast, is prepared in accordance with IFRS as issued by IASB, which differs from EU IFRS. For further information, see Note 1, "Significant accounting policies and critical accounting estimates – Basis of accounting – EU carve-out" to the Consolidated Financial Statements.

Our key financial targets are:

Financial Targets for 2022

- Post-tax Return on Average Tangible Equity of 8 % for the Group
- Post-tax Return on Average Tangible Equity of more than 9 % for the Core Bank
- Adjusted costs excluding transformation charges of € 16.7 billion
- Cost income ratio of 70 %
- Common Equity Tier 1 capital ratio of above 12.5 %
- Leverage ratio (fully loaded) of ~4.5 %

The COVID-19 pandemic and its impact on the global economy may affect our ability to meet our financial targets, as its ultimate impact remains difficult to predict.

Adjusted costs, Adjusted costs excluding transformation charges, Adjusted costs excluding transformation charges and expenses eligible for reimbursement related to Prime Finance, Post-tax Return on Average Tangible Equity as well as Leverage ratio (fully loaded) are non-GAAP financial measures. Please refer to "Supplementary Information (Unaudited): Non-GAAP Financial Measures" of this report for the definitions of such measures and reconciliations to the IFRS measures on which they are based.

Our Businesses

This section should be read in conjunction with the section Deutsche Bank: Our Organization in the Operating and Financial Review in the Annual Report 2020.

Corporate Bank

Corporate banking is at the core of our business. Firstly, our capabilities in Cash Management, Trade Finance and Lending, as well as Foreign Exchange, the latter delivered in close collaboration with the Investment Bank, enable us to serve core needs of our corporate clients. As a leading bank serving German corporates domestically and abroad, we help clients in optimizing their working capital and liquidity, securing global supply chains and distribution channels and managing their risks. Secondly, we act as a specialized provider of services to Financial Institutions, offering Correspondent Banking, Trust and Agency as well as Securities Services. Finally, we provide business banking services to approximately 800,000 clients in Germany, business banking covers small corporates and entrepreneur clients and offers a largely standardized product suite.

We have defined a number of specific initiatives to capitalize on our core competencies across these different areas and grow our revenues to achieve our targets.

In 2020, we made significant progress on all of these targets despite the COVID-19 pandemic. We have re-priced more than € 40 billion of deposits in order to pass on negative interest rates, bringing the total amount of deposits under charging agreements to about € 78 billion. We continued working towards the target of doubling the fees we generate from platforms, FinTechs and eCommerce clients over the next two years. We have also grown Rates and Foreign Exchange revenues - booked in Investment Bank - with our corporate clients, in particular in the U.S. and Asia Pacific, and increased our revenues in Asia Pacific despite declining interest rates in the region. In Germany, we have materially completed the integration of our commercial and corporate banking activities, combining under one umbrella our operations for business clients with all the products and services of our Deutsche Bank, Postbank and FYRST brands.

We aim to continue working towards our target for the Post-tax Return on Average Tangible Shareholders' Equity of 11 - 12 % in 2022. Firstly, we will re-price further deposits, both in our Cash Management franchise and with domestic German corporate clients, in order to offset the impact of negative interest rates in Europe. Implementation of deposit charging agreements is materially within our control and relies on our disciplined execution. Building on 2020 achievements, our initiatives also include to further grow our business with platforms, FinTechs and eCommerce payment providers. We also aim to offer a full suite of advisory and financing solutions for corporate treasurers. In addition, we intend to continue to expand our business in Asia and finally to enhance our offering for small German businesses. Parts of corporate banking, especially

payments, are experiencing a high degree of innovation and disruption driven by high-paced technology developments and the emergence of new competitors. We intend to make targeted investments in new growth areas, including asset as a service and merchant payments, where we see market opportunity and believe to have a competitive advantage. As we grow our business with clients globally, we intend to continue to apply sound risk management principles in order to maintain the high quality of our loan portfolio and strict lending standards.

We also aim to significantly advance our provision of sustainable financing solutions for our clients. In 2020, we developed distinct sustainable finance product strategies, integrated ESG into client coverage models, rolled-out global employee trainings on ESG and started integrating Deutsche Bank’s newly defined Sustainable Finance Framework into our Corporate Bank’s core systems and processes. In our strategic measures, we want to support our clients’ ESG transformation. Building on our knowledge of the needs of corporate treasurers, strong product offerings across all our business divisions, deep understanding of EU sustainable finance regulation and standards as well our global network, we intend to help our clients become ESG-compliant around the world.

Investment Bank

In 2020, the Investment Bank (IB) continued with the implementation of the outlined strategic priorities: delivering sustainable revenue growth; client franchise improvements; limited financial resource increases; and reduction of the cost base. In each of these areas, the IB successfully delivered tangible results, all while navigating the immediate reaction following the COVID-19 pandemic in March and April 2020. The result was a significant improvement in the Return on Tangible Equity for the IB.

The IB’s strategy will continue to focus upon the core priorities, building on the franchise’s key strengths and optimizing where possible to work towards a future Return on Tangible Equity target of between 9.5 % to 10.5 %.

Within Fixed Income and Currencies (FIC), the strategic transformation of key businesses that has been underway since 2019 will continue. Our leading Financing business will focus upon maintaining disciplined risk management across the diversified portfolio, with the deployment of resources into targeted sectors, such as Asset Backed Securities. The FIC businesses excluding Financing will build upon the substantial progress made in 2020 by continuing to deliver franchise improvements and ensure the sustainability of revenue growth. In Credit trading, we continue the rebuilding of our Credit Flow franchise in Europe and U.S. by expanding our product suite, while we further develop our e-trading capabilities, with a focus upon a more targeted client set. In Foreign Exchange (FX), technology development remains a key priority to maintain competitive advantage, in addition to targeting under-penetrated client groups and further enhancing the partnership with the Corporate Bank (CB). In Rates, the franchise will continue to focus upon automation and digitalization of flow, deeper investment in e-channels and turnaround of specific EMEA businesses. The Global Emerging Markets (GEM) organizational structure and leadership of the GEM business are now in place and further product development and enhanced e-pricing and execution tools (particularly in Central and Eastern Europe Middle East and Africa and Latin America) will be aligned with increased alignment with the Corporate Bank (CB).

The strategic transformation of the FIC business will be reinforced by our FIC reengineering program, which is intended to enable us to materially improve client experience, eliminate complexity and manual processes, and as a result lower costs and enhance the control environment.

In Origination and Advisory (O&A), we intend to continue to focus on a targeted client set, increasing the level of intensity with which we cover clients. Investments will be focused upon coverage of growth sectors where the Bank has a competitive advantage in the Advisory business, such as Healthcare, Consumer, Industrials, real estate, gaming, lodging and leisure sector and Technology Media & Telecom as well as strategic growth opportunities for incremental cross-border activity. In Equity Capital Markets (ECM), we plan to continue to offer a full underwriting and distribution capability in U.S. and EMEA and targeted in APAC. Our Debt Origination business plans to continue to target areas of strength, further building the franchise, ensuring efficient risk distribution and resource optimization, in addition to future growth areas, such as ESG.

The strategy of IB is underpinned by a controlled approach to capital deployment, continued effort on reducing the cost base and a focus on control improvements. In addition, we aim to further eliminate inefficiencies in our funding costs in 2021 and beyond.

Finally, ESG remains a priority across all our business lines, as we develop market leading sustainable finance capabilities and a range of derivative solutions. Significant progress was made in 2020 in transaction volumes across Debt Origination and FIC Financing, with innovative hedging and investment product solutions also delivered. In our strategic initiatives, we are targeting continued growth, with an expansion of the client-base for both origination and distribution.

Private Bank

Private Bank (PB) covers private, wealth and commercial clients across more than 60 countries and operates through two distinct business units: Private Bank Germany (PB GY) and the International Private Bank (IPB). At the Investor Deep Dive in December 2020, we detailed that our divisional targets for 2022 are to contribute revenues of € 8.3 billion to the Group despite interest rate headwinds and to reduce our cost base by € 0.8 billion within the next two years. Higher revenues and lower cost are key drivers as we work towards a Return on Tangible Equity of around 8 to 9 % in 2022.

PB GY is Germany’s leading retail bank with two highly complementary brands, Deutsche Bank and Postbank, serving approximately 19 million clients. We target clients who are seeking advisory solutions with Deutsche Bank offerings and those looking for convenience through the Postbank offerings. In cooperation with Deutsche Post DHL AG, we also offer postal and parcel services in the Postbank branches. We renewed our insurance partnerships with Talanx and Zurich Insurance Group and will extend the offering to both Deutsche Bank and Postbank clients starting in 2023. Within PB GY, the transformation is well on track. In 2020, we successfully completed the merger of Deutsche Bank Privat- und Firmenkundenbank AG into Deutsche Bank AG, consolidating the retail business of both brands into one legal entity. Additionally, at the end of 2020, we completed the sale of Postbank Systems AG to Tata Consultancy Services to simplify the unit’s IT infrastructure. In addition, balance of interest negotiations were completed to further streamline the head office functions of the unit. The corresponding restructuring process will begin in early 2021 and is scheduled to be completed by the end of 2022.

To sustain revenues, PB GY focuses on growth in investment and lending products, on an increasing share of revenues from direct sales channels (e.g. by leveraging its market leading mobile banking app) and is continuously reviewing and adjusting its price position across relevant products. With regard to the unit’s cost optimization, PB GY is continuing to implement its consolidation and transformation program, which represents a central cornerstone of the Group’s overall strategic realignment. In particular, cost savings will be achieved through consolidating Postbank’s IT infrastructure into one joint IT system. In addition, PB GY is further optimizing its distribution network by reducing the branch network and self-service infrastructure of DB and Postbank brand. Moreover, PB GY is targeting significant headcount reduction across central functions in order to realize the overall cost target.

In 2020, we combined Wealth Management (WM) and the Private and Commercial Business International to create the International Private Bank . IPB serves the holistic needs of 3 million clients and has a unique client proposition, especially for family entrepreneurs, Ultra High Net Worth Individuals (UHNWI) and affluent customers. While IPB’s core scalable business is located in continental Europe, it also has a fast growing franchise in Asia and the Middle East, and operates a specialized UHNW franchise in the U.S. In Personal Banking, we serve our clients, primarily in Italy and Spain, acting as a source of potential clients for Private Banking and Wealth Management. We intend the combination of our internationally focused Private Bank businesses to allow us to develop our market share within and across markets, as well as to drive synergies to scale the business. The most prominent and immediate strategic opportunity was the merger of the Wealth Management and Private Banking activities, which brought a number of quick wins on cost, by combining platforms, products, operations and management. It also delivered revenue opportunities such as leveraging WM products for Private Banking clients and deploying WM capabilities in new markets such as Belgium. The next step is to unlock further growth potential by more closely aligning our WM and SME Business Banking offerings, starting in Italy and Spain. Additionally in 2020, we continued to selectively invest in our business by enhancing our product and core banking platforms as well as hiring front-office employees. As a result, we saw an increase in net inflows in our broader range of investment products as well as our newly launched Strategic Asset Allocation (SAA) solutions.

Going forward, we aim to grow business through our focus on entrepreneurial families as well as through our continued conversion of deposits and non-invested assets into investment solutions. We intend to roll out our flagship SAA solution to the whole domestic client base in Italy, Spain and Belgium and plan to launch an ESG-compliant offering. We plan to continue to focus the combined business on our target client segments and drive cost efficiencies through optimizing our branch network and head office functions. We intend to enhance our digital capabilities and increase the use of automation and agile IT solutions.

In 2020, the Private Bank further strengthened its focus on sustainability by defining ESG targets for 2025 and commenced various initiatives in this area. PB GY, for example, developed a specific taxonomy for classification of ESG-compliant mortgage lending. In IPB, we integrated ESG into our investment platform and launched ESG-enhanced wealth mandates.

Asset Management

We are a leading asset manager with over € 790 billion in assets under management. With approximately 3,930 employees operating globally, we provide a range of traditional and alternative investment capabilities to clients worldwide. Our investment offerings span all major asset classes including equity, fixed income, cash and multi asset as well as alternative and passive investments. Our product offerings are distributed through our single global distribution network, while also leveraging third-party distribution channels. We serve a diverse base of retail and institutional investors worldwide, with a strong presence in our home market in Germany. Our clients include government institutions, corporations and foundations as well as millions of individual investors.

The asset management industry is evolving, with greater competition, continued margin pressure, and technological disruption amid heightened geopolitical tensions and increased market volatility. As a result, Asset Management (AM) has implemented a number of strategic initiatives to support our medium-term targets and aim to continue delivering shareholder value through net flows, cost discipline and dividend distributions. We believe our diverse range of well-performing products and investment solutions give us a strong basis for growing assets and profitability. We responded rapidly to the COVID-19 pandemic by implementing robust business continuity management and changed the way we work without compromising our commitment to clients or shareholders. At the same time, we have continued execution on our strategic agenda during 2020, making significant progress in all areas of our business. We have simplified our global business structure to become even more client-centric, flexible, efficient and effective.

Our target is to make ESG and sustainability a key strategic focus of both our fiduciary and corporate activities. We expect sustainability and sustainable investments to become the driving force behind successful asset management over the coming years. Demand for ESG investment products has risen significantly, we have responded to this demand by launching new innovative products and offering ESG-versions of existing funds, resulting in significant inflows to these products in 2020. COVID-19 has amplified ESG as the pandemic's fallout reinforces the need to build our economy on a more responsible and sustainable basis. Our aim is to become a leading ESG-integrated asset manager, which requires ESG to be embedded in everything we do. In our strategic measures, we aim to increase our focus on smart ESG integration across the investment platform, extending our Group Sustainability Office, and to continue to embed ESG into all of our corporate activities.

Cost control continues to be fundamental to execute on our business strategy and ensure high shareholder value creation. We continue investing in our business and infrastructure functions and our plan for the future is to shift away from our complex legacy IT infrastructure towards a leading IT infrastructure that is more efficient and more appropriate for an asset management business. We aim to build a standalone operating model that delivers a sustainably low adjusted cost-income ratio, while supporting commercial success and driving agility.

A key strategic focus is to continue delivering consistent investment outperformance across strategies that align with the increasingly sophisticated demands of our clients. We are evolving our innovation process to match our solutions to client requirements. We unified our Investment Division in 2020, which now encompasses all liquid and illiquid investment strategies. Furthermore, we established a unified Systematic Investment Solutions function, which combines our Passive and Quant capabilities in a single investment unit.

Our strategy targets growth in specific product lines and regions, especially Asia. As part of our regional strategy optimization, we aim to focus on developing and nurturing strategic alliances. In Asia, we are continuing to work closely with our partners Nippon Life and Harvest Fund Management to explore new business opportunities in the region. Furthermore, we have extended our strategic partnership with Zurich Insurance Group in the unit-linked retail business in Germany until 2032. We plan to continue to invest in digital capabilities to accelerate our readiness to compete in a rapidly evolving industry. Our growth commitment into digitization and technology is further underlined by our ongoing strategic partnerships.

We will also continue working towards our target for the Post-tax Return on Average Tangible Shareholders' Equity of above 20% for 2022.

AM has prioritized execution and delivery in 2020, making significant progress in all areas of its business. We have continued our efforts to become a leading ESG-integrated asset manager. We made meaningful progress in order to reach our ambitions, including the appointment of a Group Sustainability Officer, introduced an ESG smart Integration process and formed of a new ESG Advisory Board. Product innovation has been a key focus, as reflected by the number of our new ESG-focused product launches in 2020. In 2020, we maintained a strict cost discipline, helping us to achieve an adjusted cost-income ratio of 66.6 % for AM. This was achieved through our accelerated efficiency initiatives, focusing on making our workforce more efficient, strategic vendor management and reviewing our real estate portfolio in all locations. We established a standalone Product Division in 2020, which operates globally with responsibility for the entire product life-cycle, and will enable a more agile and innovative approach to product development while retaining a clear focus on client needs, product quality, time-to-market and profitability along the product life cycle. Organic growth remains a top priority for AM, and we have continued to increase our focus on the targeted asset classes of Passive and Alternatives, as well as strengthening our strategic partnerships, resulting in net inflows of 4 % of assets under management (based on beginning of year AuM).

The Competitive Environment

2020 The Global Economy

The COVID-19 pandemic led to unprecedented GDP declines in all countries in 2020, though recovery in many regions progressed faster than expected. In spite of this, the historic economic disruptions caused by the COVID-19 pandemic will still have lingering effects in the months ahead, and this may be protracted by widespread vaccination delays. By the end of 2020, a resurgence of COVID-19 cases was observed in various regions and many countries have moved to re-impose national lockdowns. Overall, global economic growth decreased by 3.3 % in 2020 in comparison to 3.0 % growth reported in 2019. Global inflation was at 2.7 % in 2020. In the industrialized countries, GDP plunged by 5.1 % and consumer prices rose by 0.7 % while GDP of emerging market economies decreased by 2.1 % and inflation reached 3.9 %.

Following a sharp contraction in the first half of 2020, the Eurozone economy recovered strongly, but suffered another albeit much smaller GDP decline in the final quarter. Households and businesses were supported by massively expanded fiscal policy measures and the ECB's expansionary monetary policy, which provided favorable financial conditions. At the end of 2020, the ECB increased the Pandemic Emergency Purchase Program (PEPP) by another € 500 billion, expanding it to a total of € 1.85 trillion. In addition, PEPP will run nine months longer than planned, until at least the end of March 2022. At the beginning of the fourth quarter of 2020, a second wave of COVID-19 infections gained momentum and required renewed containment measures. A modest trade deal between the EU and the UK was finally agreed in December 2020. In 2020 the Eurozone economy decreased by 6.8 % and consumer prices rose by only 0.2 %. Due to the slump caused by the COVID-19 pandemic, German economic activity fell by 5.0 % in 2020.

The U.S. economy experienced a massive contraction in the second quarter of 2020, followed by a stronger than expected recovery. The unemployment rate climbed to new record highs, but the labor market improved again as the recovery progressed. A strong second wave of COVID-19 in combination with delayed additional fiscal stimulus constrained the recovery. All in all, U.S. GDP contracted by 3.5 % in 2020. Inflation decelerated to 1.2 % from 1.8 % in 2019. The Federal Reserve Bank acted quickly and aggressively to keep funds flowing freely in money and credit markets

The Japanese economy recovered faster than expected in the third quarter after contracting sharply in the first half of the year. During the second wave of COVID-19 infections in summer, the government did not declare a nationwide state of emergency and instead tried to support economic activity. GDP contracted by 4.9 % in 2020. The Bank of Japan kept an accommodative policy stance, while paying attention to policy side effects. Inflation decelerated to 0 %, after 0.5 % in 2019.

Asian economies experienced a stronger than expected rebound in economic activity from impact of COVID-19. China, Japan and other north Asian economies have been relatively successful in controlling the virus and returning to or toward pre-virus levels of activity. Emerging Asia economies contracted by only 1.0 % in 2020. Asian central banks have reached the limits of conventional stimulus through interest rate cuts. China continued its V-shaped recovery, making it the only major economy achieving a positive growth rate in 2020 of 2.3 %. The rebound was driven by a robust industrial sector and a faster-than-expected recovery in services activity. The surge in China contributed strongly to the recovery in global trade. Inflation decelerated to 2.5 % in 2020 from 2.9 % in 2019.

2021 Outlook

In 2021, the course of the COVID-19 pandemic and the progress made with regards to vaccinations will have a significant impact on the development of global economic activities. Since the beginning of 2021, a number of economies have been facing a resurgence of the pandemic. Highly effective and broadly available vaccines could drive economic recovery, as upgraded economic growth expectations indicate. However, the pace of this recovery will significantly vary across countries depending on access to vaccines and availability of government support. We expect global GDP to grow by 6.3 % in 2021. The global inflation rate is expected to rise gradually to 2.9 % from 2.7 % in 2020. For industrialized countries, we expect GDP growth to pick up to 5.0 % and consumer prices to increase by 1.6 % in 2021 from negative 5.1 % and 0.7 % respectively. Economic growth in emerging markets is projected to recover to 7.1 % in 2021, while inflation is expected to slow to 3.7 % from 3.9 % in 2020.

In the Eurozone the vaccine rollout is expected to support activity from the end of spring onwards, bringing it to pre-COVID-19 levels by the end of 2021. GDP in 2021 is expected to grow by 5.6 %. Eurozone economies are expected to benefit from an improvement in global manufacturing activity, although the EU Recovery Fund will not disburse funds until the second half of 2021. The ECB is not expected to revisit its monetary policy stance until autumn 2021, six months before the scheduled expiry for the PEPP net purchases. In 2021, Eurozone inflation is expected to increase to 1.0 %. Following a GDP contraction of 5.0 % in 2020, we expect the German economy to grow by 4.0 % in 2021. After a weak first quarter, German GDP growth is expected to pick up strongly. Exports are expected to remain robust, given the fast rebound in global trade and an expected

decline in trade policy uncertainty. A thriving export business is a catalyst for investment spending, which is expected to rebound strongly.

We expect U.S. economy to expand by 5.9 % in 2021. The new Biden administration is expected to deliver another tranche of fiscal support in 2021. A joint infrastructure plan is expected to be passed later in the year. U.S. real GDP is expected to return to its pre-pandemic level in the second half of 2021 and to converge towards the pre-pandemic growth path by the end of 2021. A meaningful upgrade to growth and the labor market would pull forward Federal Reserve Bank's Quantitative Easing tapering to the end of 2021. The Federal Reserve is expected to maintain its policy rate at 0.125 % in 2021. We expect U.S. inflation to increase to 2.4 % in 2021 from 1.2 % in 2020.

The Japanese economy is expected to recover by 1.5 % in 2021. Japan is expected to achieve a high level of vaccination by the end of the first half of 2021 given the amount of COVID-19 vaccines it has secured. Inflation could be impacted by government policy factors and remain subdued (the base year will change from 2015 to 2020). We expect the inflation to be at 0.2 % in 2021.

In the course of 2021, vaccines are expected to become more widely available in emerging markets. Economies with low activity levels and relatively high reliance on domestic demand, as in most Latin American countries, should particularly benefit. A gradual recovery of the travel industry is expected to further support economic recovery, especially in Asia. Emerging market GDP growth is expected to accelerate by 7.1 % in 2021, and in Asia by 8.8 %. Inflation in emerging markets is expected to decelerate to 3.7 % in 2021, from 3.9 % in 2020.

The positive economic momentum of the Chinese economy is likely to continue in the first half of 2021, supported by stronger external demand. In 2021 the Chinese economy is expected to expand by 10 %. This will set the stage for fiscal and monetary policy normalization by the second half of the year. The People's Bank of China policy objectives for 2021 have shifted to more structural issues. The tightening of property loans should be a strong policy signal. Borrowing of local governments is likely be constrained, which will slow infrastructure investments. We expect the People's Bank of China to raise its policy rate two times by 10 basis points each time in the second half of 2021. Chinese inflation is forecasted to decelerate to 1.5 % in 2021 from 2.5 % in 2020.

There are a number of risks to our global economic outlook. Ongoing challenges from COVID-19 and the possibility of further lockdowns in 2021 could considerably dampen economic momentum. Growing government debt burdens could also impact the broader Eurozone economy. Trade tensions including upcoming trade negotiations between the U.S. and the European Union (EU) could negatively impact the global economic outlook. Additionally, rising geopolitical tensions, particularly in the Middle East could create further uncertainty.

Competitor Landscape

Against this backdrop, Deutsche Bank competes in the financial services sector with a spectrum of competitors, who include other universal banks, commercial banks, savings banks and other public sector banks, broker dealers, investment banking firms, asset management firms, private banks, investment advisors, payments services providers, financial technology firms and insurance companies. Some of the competitors are global like Deutsche Bank, while others have a regional, product or niche client footprint. Deutsche Bank competes on a number of factors, including the quality of client relationships, transaction execution, products and services, innovation, reputation and price.

Profitability of the European banking industry tumbled in 2020 as a result of the COVID-19 pandemic-induced recession. Revenues and costs were both moderately lower compared to the prior year, while loan loss provisions surged to the highest level in a decade. Likewise, loan growth with non-financial companies in the euro area shot up to multi-year highs before stabilizing. Momentum in private-sector deposits was the strongest since the financial crisis. Even more, negative interest rates continue to keep the net interest margin under pressure. Total assets increased substantially, also due to higher liquidity holdings at central banks and purchases of government bonds. In corporate finance, European banks lost further market share to U.S. competitors.

The outlook for the European banking industry in 2021 will continue to be shaped by the COVID-19 pandemic, associated market volatility and the onset of an economic recovery. A number of trends which have dominated the banking business in 2020 are likely to go into reverse, although the markets remain supportive of our business so far this year. First, the trading boom in capital markets could slow as economies start to recover and uncertainty retreats. Stock market valuations could continue to rise, and M&A activity could pick up, as a result of extremely loose monetary policies. Second, loan loss provisions may come down somewhat from their peak. Third, loan growth particularly with corporates may slow further after the spike at the beginning of the crisis, as the sector has accumulated vast liquidity reserves.

Some of the biggest risks for banks stem from delays and other setbacks in the vaccination process against COVID-19, including more contagious and vaccine-resistant new mutations, as well as a greater than envisaged impact of renewed lockdowns on the labor market and particularly services industries which are currently suffering heavily. This could trigger a wave of corporate but also private insolvencies and thus another spike in loan loss provisions. By contrast, with a new administration taking office in the U.S., geopolitical and trade tensions are less likely to escalate.

Banks' revenue growth may be sluggish or even negative in 2021 as some of the previous tailwinds, especially in investment banking, subside. Very low interest rates may continue to eat into net interest income. However, this could be more than compensated for by lower provisions. Hence, bank profitability might recover a significant part of the 2020 plunge. Where applicable, banks in Europe are also expected to resume dividend payments, which had been suspended by supervisors last year.

In our home market, Germany, the retail banking market remains fragmented and our competitive environment is influenced by the three pillar system of private banks, public banks and cooperative banks. Competitive intensity has increased in recent years following some consolidation activity, particularly among public regional banks (Landesbanken) and private banks, and increased activity levels from foreign players.

Looking at the wider banking ecosystem, the evolution of financial technology firms remains as much an opportunity as a challenge for banks. While we see the risk of banking disruption primarily through big technology companies and in select product areas, particularly the unregulated segments, some banks have also taken the opportunity to selectively partner with financial technology firms and leverage their solutions to become more efficient and/or develop differentiated delivery channels for end clients.

Regulatory Environment

The flow of new legislative proposals under the post-crisis global regulatory reform agenda has slowed, but the focus of regulators turned to measures to support banks and the economy during COVID-19, as well as implementing and supervising previous reforms. Preparations for the implementation of further global reforms also accelerated.

While a number of regulatory reforms impacting Deutsche Bank are already in force, others continue to be developed on an international level and implemented regionally. Where primary legislation has been agreed on by lawmakers, regulators have yet to develop detailed rules, or determine their cross-border application, which might lead to a fragmented and inconsistent landscape. Moreover, certain post-crisis reforms which have already been implemented are or have been subject to reviews that might lead to additional changes in legislation in the coming years. The impact of the implementation of such final or revised standards on specific institutions remains uncertain. In some instances there remains a lack of clarity around the final rules and the impact that they might have on banks in different regions.

During 2020, a number of international developments in the area of banking regulation and supervision have been implemented and will continue to be further refined, in particular with a view to strengthening international standards to create financially resilient institutions and ensuring resolvability of banks. At the same time, authorities adopted temporary measures to provide limited regulatory relief, in view of COVID-19.

Capital, liquidity and leverage requirements – In 2020, several authorities adopted measures to provide temporary relief to banks and the economy, including on capital requirements, liquidity and reporting, as well as exemptions to the leverage exposure. These were in line with the global regulatory framework established by the Basel Committee, the so-called Basel Accords (Basel 1, 2 and 3). On December 23, 2020 the EU published a Delegated Regulation changing the capital treatment of software assets, with partial exemption form capital deduction.

On October 3, 2019, the Federal Reserve and other U.S. regulators adopted final rules that tailor the prudential standards applicable to large U.S. and foreign banking organizations based on their risk profiles. The final rules, which took effect December 31, 2019, implement section 401 of the Economic Growth, Regulatory Relief and Consumer Protection Act (EGRRCPA) of 2018. The rule tailors Enhanced Prudential Standards and U.S. Basel 3 capital and liquidity standards for banking organizations with U.S.$ 100 billion or more in total consolidated assets.

At the international level, in December 2017, the Basel Committee published its final agreement ("December 2017 Agreement") on further revisions to the Basel 3 framework that aim to increase consistency in risk-weighted asset calculations and improve the comparability of banks' capital ratios. The December 2017 Agreement includes, among other things, changes to the standardized and internal ratings-based approaches for determining credit risk, revisions to the operational risk framework, and an "output floor", set at 72.5 %. The "output floor" limits the amount of capital benefit a bank can obtain from its use of internal models relative to using the standardized approach. This package of reforms is intended to finalize the Basel 3 framework and would reduce the ability of banks to apply internal models, while making the standardized approaches more risk-sensitive and granular. In addition, the December 2017 Agreement introduces a leverage ratio buffer for global systemically important banks ("G-SIBs"), such as Deutsche Bank, to be met with Tier 1 capital and sets it at 50 % of the

applicable risk-based G-SIB buffer requirement, which was included in the adopted banking reform package. Due to COVID-19, the Basel Committee deferred the implementation date for the changes in the December 2017 Agreement to January 1, 2023, with a phase-in period of five years through January 1, 2028 for the output floor. The EU is planning to implement this reform with a legislative proposal package, expected to be issued in mid-2021 (revision of the Capital Requirements Regulation or CRR III). In addition, the U.S. Federal Reserve Board is planning to release a proposal to implement this reform as well, which is expected to be released in mid-2021 as well.

In addition, on January 14, 2019 the Basel Committee also reached an agreement ("January 2019 Agreement") on reforms to the market risk framework, known as the Fundamental Review of the Trading Book (FRTB). The main features of the final standard include an internal models approach to determine the risk weight of exposures that relies on the use of expected shortfall models. The standard sets out separate capital requirements for risks that are deemed non-modellable and includes a more risk-sensitive standardized approach as a fallback to the internal models approach. CRR II (as part of the banking reform package) has introduced specific reporting requirements for market risk based on the revised framework as the first step in the application of the FRTB by EU institutions, and empowers the European Commission to propose further regulations to establish own funds requirements for market risk based on the FRTB.

The CRR III reform package will likely affect our business by raising our regulatory capital and liquidity requirements and by leading to increased costs. The December 2017 Agreement and the January 2019 Agreement could also affect our business by imposing higher capital charges when adopted into law.

Capital planning and stress testing – Although on January 31, 2020 the European Banking Authority ("EBA") and the European Central Bank ("ECB", our principal supervisor) launched the 2020 EU-wide stress test, this was later postponed to 2021, due to COVID-19. This test was designed to provide supervisors, banks and other market participants with a common analytical framework to compare and assess the resilience of EU banks to economic shocks, while at the same time releasing the macroeconomic scenarios for the test. In November 2020, the EBA published its revised stress test methodology for 2021.

The stress test will be conducted on a sample of 49 EU banks, including Deutsche Bank. In line with the previous exercises, this exercise does not include a pass-fail threshold as the results of the exercise are designed to serve as an input to the SREP. The EBA expects to publish the results of the exercise by end-July, 2021. We are subject to SREP for an ongoing assessment of risks, governance arrangements and the capital and liquidity situation, which is a review of the arrangements, strategies, processes and mechanisms of supervised banks on a regular basis, in order to evaluate risks to which these banks are or might be exposed, risks they could pose to the financial system, and risks revealed by stress testing. The SREP can result in Pillar 2 capital requirements or guidance and liquidity requirements for the relevant institution.

Both DB USA Corporation and DWS USA Corporation, our U.S. intermediate holding companies, were subject to the Federal Reserve Board's Comprehensive Capital Analysis and Review ("CCAR") for 2020. On June 25, 2020, the Federal Reserve Board publicly indicated that it did not object to the 2020 capital plans submitted by DB USA Corporation and DWS USA Corporation. DB USA Corporation and DWS USA Corporation will make their next capital plan submissions to the Federal Reserve Board in April 2021. Due to the material uncertainty of the trajectory of the economic recovery and its effects on the health of the banking organizations, a second round of supervisory stress tests were run during the second half of 2020. The Federal Reserve released results on December 18, 2020 which showed post stress capital well above regulatory minimums for DB USA Corporation and DWS USA Corporation. On March 4, 2020, the Federal Reserve Board issued a rule to amend its CCAR process to combine the CCAR quantitative assessment and the buffer requirements in the Federal Reserve Board's capital rules to create an integrated capital buffer requirement – the Stress Capital Buffer (SCB). The Fed's SCB went into effect for the first time on October 1, 2020 and will be re-calculated annually, with the revised assessment taking effect each year on October 1st.

Recovery and resolution – The major jurisdictions where we have significant group operations have now finalized the implementation of the Financial Stability Board's (FSB) Key Attributes for Effective Resolution Regimes. Under the EU's Bank Recovery and Resolution Directive (BRRD) and Single Resolution Mechanism (SRM), to which we are subject, competent supervisory and resolution authorities have far-reaching powers to impose resolution measures upon banks that are deemed to be failing or likely to fail. Resolution measures, in particular, include the power to reduce, including to zero, the nominal value of shares, or to cancel shares outright, and to write down certain eligible subordinated and unsubordinated unsecured liabilities, including to zero, or convert them into equity (commonly referred to as "bail in"). To ensure sufficient availability of liabilities with loss-absorbing capacity that could be bailed in, banks in the European Union must meet, or will have to meet, certain minimum requirements such as the Total Loss Absorption Capacity (TLAC) or the Minimum Requirements for Own Funds and Eligible Liabilities (MREL) (as further explained below).

For a bank directly supervised by the ECB, such as Deutsche Bank, the Single Resolution Board ("SRB") draws up the resolution plan, assesses the bank's resolvability and may require legal and operational changes to the bank's structure to ensure its resolvability.

In the United States, Deutsche Bank AG is required under Title I of the Dodd-Frank Act, as amended, to prepare and submit periodically to U.S. regulators a plan for the orderly resolution of its U.S. subsidiaries and operations in the event of future material financial distress or failure (the "U.S. Resolution Plan"). Deutsche Bank AG filed its most recent U.S. Resolution Plan in September 2020 and received written regulatory feedback in December 2020. The Federal Reserve Board and Federal Deposit Insurance Corporation (FDIC) found that Deutsche Bank's U.S. Resolution Plan had no deficiencies and concluded that the previously identified shortcoming, associated with governance mechanisms and related escalation triggers, was satisfactorily addressed. Following this submission, Deutsche Bank's next targeted U.S. Resolution Plan is due on or before December 17, 2021.

Loss-absorbing capacity – Following the FSB's final term sheet on TLAC in November 2015, several jurisdictions (including Germany) have started to implement the TLAC standard in their regulatory frameworks. The TLAC standard is designed to ensure that G-SIBs, such as Deutsche Bank, maintain enough capital and long-term debt instruments that can be effectively bailed-in to absorb losses and recapitalize the bank. The EU banking reform package implemented the FSB's TLAC standard for G-SIBs by introducing a new "Pillar 1" minimum requirement for eligible liabilities (or "MREL") for G-SIIs (the European equivalent term for G-SIBs). This new requirement is based on both risk-based and non-risk-based denominators and is set at the higher of 18 % of total risk exposure and 6.75 % of the leverage ratio exposure measure following a transition period (until December 31, 2021, 16% of total risk exposure and 6% of the leverage ratio exposure measure). It can be met with Tier 1 or Tier 2 capital or debt that meets specific eligibility criteria. In addition, the competent authorities will have the ability to impose a TLAC add-on requirement on G-SIIs. We also are subject to TLAC requirements in other jurisdictions. For example, the Federal Reserve Board's rules implementing the TLAC standard in the United States are effective as of January 2019, with TLAC requirements that apply to U.S. intermediate holding companies (such as ours) of non-U.S. G-SIBs. These rules include a minimum TLAC requirement and TLAC buffer, a minimum long-term debt requirement and clean holding company requirements.

Completion of the Banking Union and reduction of non-performing exposures – A European Deposit Insurance Scheme (EDIS) is intended to complete the Banking Union but the corresponding proposal is still under negotiation. Discussions have centered on EDIS, while in 2020 Member States agreed in principle to set up a backstop to the Single Resolution Fund (SRF) through the European Stability Mechanism (ESM). As some voices have requested more progress on risk reduction as a prerequisite for the implementation of any risk sharing arrangement, the recent focus has been to reduce non-performing loans (NPL) of banks in the EU, and prevent further build-up as a result of the COVID-19 pandemic. To that end, in December 2020 the European Commission issued a new NPL Action plan, but did not propose any legislative changes to prudential regulation.

Development of the Capital Markets Union and related regulation – In 2020, the European Commission proposed amendments to the Markets in Financial Instruments Directive (MiFID II) as part of its Capital Markets Recovery Package following the outbreak of COVID-19, in order to provide regulatory relief to banks and corporates, and support economic recovery. The amendments largely relate to investor protection provisions, such as the reduction in requirements for costs and charges disclosures, as well as a temporary suspension of best execution reports for a period of two years. The amendments will enter into force in the first quarter of 2021. Against the background of the COVID-19 pandemic, in 2020 the European Commission also issued a notice of information on the postponement of entry into application of the open access provisions with regard to exchange-traded derivatives in the Markets in Financial Instruments Regulation (MiFIR). A more fundamental review of the MiFID/R covering market structure provisions will take place in the third quarter of 2021.

The European Commission also published its new Capital Markets Union (CMU) Action Plan on September 24, 2020, as it aims to strengthen the CMU and post-COVID-19 recovery in the coming years. The key proposed actions focus on scaling up European securitization markets, supporting European banks' ability for market making, simplifying listing rules for public markets, and developing a European single access point (ESAP) so that investors can access financial and sustainability-related information.

Benchmarks – Ahead of the expected cessation of LIBOR production at the end of 2021, regulators have concentrated efforts on speeding up transition from interbank offered rates (IBORs) to risk-free rates, developing tough legacy solutions, and finalizing proposals and authorities' powers to implement replacement rates in their respective jurisdictions. In the EU, amendments to the Benchmarks Regulation to support the European Commission's powers on the statutory replacement rate, and extend the transition period for the third country benchmark regime until the end of 2023, will enter into force in the first quarter of 2021.

On October 21, 2020, the UK government introduced a Financial Service Bill which amends the UK Benchmark Regulation to facilitate the orderly wind-down of critical benchmarks by providing new powers to the UK Financial Conduct Authority (FCA) to mandate a statutory replacement rate for tough legacy contracts referencing LIBOR. The FCA will consult on its benchmark powers through 2021. In the U.S., the Alternative Reference Rate Committee (ARRC) issued its recommendation on March 6, 2020 for a legislative solution to minimize legal uncertainty and adverse economic impacts associated with LIBOR transition for certain contracts. Legislative solutions based on the ARRC recommendation are expected to progress in 2021 at both the federal and New York state level.

Digital Transformation – Several jurisdictions progressed initiatives in 2020 to both address risks and capitalize on the benefits associated with the digitalization of financial services. Work in this area is expected to continue in 2021 with a focus on data protection, cybersecurity, and operational resilience.

On September 24, 2020, the European Commission published its Digital Finance Strategy, which outlined regulatory priorities and policy actions through 2024. The strategy was published alongside legislative proposals to strengthen and harmonize financial sector operational resilience requirements (proposal for a Regulation of Digital Operational Resilience Act for the Financial Sector (DORA)) and establish a regulatory framework for crypto-assets (proposals for a Regulation on Markets in Crypto-assets (MiCA) and a Regulation on a Pilot Regime for Market Infrastructures Based on Distributed Ledger Technology (DLT Pilot Regime)). The Digital Services Act and Digital Markets Act proposals followed on December 15, 2020, which focus on protecting fundamental rights of all users of digital services and establishing a level playing field for businesses and consumers with regards to online platforms. On December 16, 2020, the EU published a new Cybersecurity Strategy which was accompanied by a new draft Directive on the resilience of critical entities (CER Directive) and a proposal for a revised Directive on measures for high common level of cybersecurity across the Union (NIS 2). The proposals aim at adapting online and offline security requirements in response to growing interconnectedness and digitalization.

Work by UK and U.S. authorities focused primarily on putting in place a stronger regulatory framework to promote operational resilience of firms and financial market infrastructures. In the UK, the Bank of England, Prudential Regulatory Authority, and Financial Conduct Authority (FCA) progressed with their December 2019 policy proposals which update requirements for the financial sector and embeds operational resilience into the UK prudential framework. The final UK policy is expected in the first half of 2021. In the U.S., the Federal Reserve Board, FDIC, and Office of the Comptroller of the Currency ("OCC") released a paper on October 30, 2020 applicable to certain large U.S. domestic banks, which provides guidance on sound practices designed to help banks increase operational resilience for their critical operations and core business lines. At the international level, the Basel Committee published on August 6, 2020 two linked principles documents related to operational resilience and the management of operational risk to help banks enhance their ability to withstand, adapt and recover from operational risk-related events in order to mitigate potential severe adverse impact.

Investment Firm Regulation – On November 27, 2019, the European Parliament and the Council adopted the Investment Firm Regulation and the Investment Firm Directive, which will introduce substantive regulatory changes (including to the calculation of capital requirements) in respect of investment firms, such as our subsidiary DWS. The Investment Firm Regulation and the Investment Firm Directive (as implemented into German law) will apply in large part from June 26, 2021.

Climate change, environmental and social issues

The Sustainable Development Goals (SDGs) adopted by the United Nations member states in 2015 set ambitious goals for achieving a better and more sustainable future. In doing so, they address the most pressing economic, social and environmental challenges of our time, including those closely related to climate change. To effectively respond to climate change and achieve the SDGs, significant investment levels are required. In 2020, COVID-19 pandemic has put even greater emphasis on sustainable development and related investments and re-financing measures for corporates. Investors, clients and the broader public are expecting the financial sector to have a critical role to play in closing existing investment gaps by mobilizing private capital to enable the transition of economies towards low-carbon and sustainable growth.

In this context, the European Commission continued its efforts to drive its Action Plan on Sustainable Finance and its "European Green Deal". Key items included the passing of the EU Taxonomy and Disclosure Regulation, which entered into law in 2020. The work on the several respective implementation rules is ongoing. Similar activity took place amongst regulators around the world, particularly in APAC. The political and regulatory agenda in many jurisdictions delivers clear supervisory expectations for banks to manage sustainability risks with a focus on climate-related risks. Another focus is transparency, with many regulators in Europe, America and APAC publishing different initiatives on non-financial reporting, labelling of sustainable investment products and disclosure of shares of sustainable business. Deutsche Bank is engaging constructively with regulators globally on their agenda. This includes the work on many public consultations on the topic, the largest one of which regarded the EU renewed Sustainable Finance Strategy, on which Deutsche Bank submitted a substantial response.

Regulation and Supervision

Our operations throughout the world are regulated and supervised by the relevant authorities in each of the jurisdictions where we conduct business. Such regulation relates to licensing, capital adequacy, liquidity, risk concentration, conduct of business as well as organizational and reporting requirements. It affects the type and scope of the business we conduct in a country and how we structure specific operations. In reaction to the 2008 financial crisis, the regulatory environment has undergone and is still undergoing significant changes.

Highlights

On June 27, 2019, a comprehensive package of reforms designed to further strengthen the resilience of European Union banks (referred to in the following as the "banking reform package") entered into force. The banking reform package includes amendments to the existing regulation on prudential requirements for credit institutions and investment firms, also referred to as the Capital Requirements Regulation ("CRR"), the directive on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, also referred to as the Capital Requirements Directive ("CRD"), the European Union's Regulation establishing Uniform Rules and a Uniform Procedure for the Resolution of Credit Institutions and certain Investment Firms in the Framework of a Single Resolution Mechanism and a Single Resolution Fund (the "SRM Regulation"), and the Bank Resolution and Recovery Directive ("BRRD"). In Germany, the amendments introduced by the banking reform package to the BRRD and the CRD have been implemented into German law by the Risk Reduction Act (*Risikoreduzierungsgesetz*).

The adopted changes incorporate various remaining elements of the regulatory framework agreed within the Basel Committee on Banking Supervision ("Basel Committee") and the Financial Stability Board ("FSB") to refine and supplement the global regulatory framework established by the Basel Committee, the so-called Basel Accords (Basel 1, 2 and 3). This includes more risk-sensitive capital requirements, in particular in the area of counterparty credit risk and for exposures to central counterparties, methodologies that reflect more accurately the actual risks to which banks may be exposed, a binding leverage ratio, a binding net stable funding ratio, tighter regulation of large exposures, new reporting requirements for market risk that may be supplemented at a later stage by own funds requirements, and a requirement for global systemically important institutions ("G-SIIs"), such as Deutsche Bank, to hold certain minimum levels of capital and other instruments which are capable of bearing losses in resolution ("Total Loss-Absorbing Capacity" or "TLAC"). Other measures are aimed at improving banks' lending capacity to support the European Union economy and at further facilitating the role of banks in achieving deeper and more liquid European Union capital markets. While many provisions take effect in 2021, certain parts, including the TLAC requirements, have applied since June 27, 2019. The banking reform package will likely affect our business by raising our regulatory capital and liquidity requirements and by leading to increased costs.

Similarly, the implementation of the remaining outstanding proposals under Basel 3 as contained in the December 2017 Agreement and in the January 2019 Agreement (see "The Competitive Environment – Regulatory Environment" above) could also affect our business by imposing higher capital charges when adopted into law. The implementation date of Basel 3 has been deferred to January 1, 2023 due to the economic impact of Covid-19.

Furthermore, a new regulation amending the CRR entered into force on April 26, 2019 relating to minimum loss coverage for non-performing exposures, creating a statutory prudential backstop against excessive future build-up of non-performing loans without sufficient loss coverage on banks' balance sheets. Finally, in response to the COVID-19 pandemic, the European Union adopted a new regulation containing tailored adjustments to the CRR including the amendments contained in the banking reform package (the "CRR Quick Fix"). The CRR Quick Fix entered into force on June 27, 2020, and primarily aims to facilitate lending by banks as a response to the pandemic.

Also, the United Kingdom (UK) ceased to be a Member State of the European Union as from 11 pm on January 31, 2020, and entered into a 'Transition Period' pursuant to the UK/EU Withdrawal Act 2020 during which EU law continued to be applicable in the UK. On December 31, 2020, the Transition Period terminated, and EU law was no longer applicable within the UK. For the UK, this meant that all extensions of EU Member State 'privileges' were no longer available including any reliance upon the European Passport and automatic rights of access to EU market infrastructure.

As from the end of the Transition Period, new UK requirements must be complied with when conducting regulated activity in the UK, both as regards cross border business as well as Deutsche Bank AG London Branch activity. Deutsche Bank AG is planning to continue to provide banking and other financial services in the UK both from its London Branch and also on a cross-border basis in compliance with applicable law. Deutsche Bank AG is now subject to additional regulatory requirements in the United Kingdom, and its activities in the United Kingdom will be supervised and monitored by both the Prudential Regulatory Authority ("PRA") and the Financial Conduct Authority ("FCA"). Deutsche Bank AG is already in the process of applying for authorization to provide banking and other financial services in the United Kingdom. The date by which Deutsche Bank AG can expect to receive UK authorisation is currently unknown, and in the meantime, it has the benefit of 'deemed permission' pursuant to the UK's Temporary Permissions Regime (TPR). The TPR also provides Deutsche Bank AG with

some temporary relief as to needing to comply with a number of UK rules by allowing 'substituted compliance' with similar EU rules. However, certain UK rules have already come into effect and some of these conflict with the similar European rules, and this has already posed challenges for both Deutsche Bank AG and the financial services industry generally (e.g., Derivatives Trading Obligation and Share Trading Obligation under MiFID).

On November 27, 2019, the European Parliament and the Council adopted the Investment Firm Regulation and the Investment Firm Directive, which will introduce substantive regulatory changes (including to the calculation of capital requirements) in respect of investment firms, such as our subsidiary DWS. The Investment Firm Regulation and the Investment Firm Directive (as implemented into German law) will apply in large part from June 26, 2021.

The following sections present a description of the regulation and supervision of our business in our home market Germany under the European Union framework of regulation and in the United States.

Regulation in Germany under the Regulatory Framework of the European Union

We are subject to comprehensive regulation under German law and regulations promulgated by the European Union which are directly applicable law in Germany.

The amendments by the banking reform package to the BRRD and the CRD have been implemented into German law by the Risk Reduction Act (*Risikoreduzierungsgesetz*) which, in particular, amended the German Banking Act (*Kreditwesengesetz*).

The German Banking Act and the CRR are important sources of regulation for German banks with respect to prudential regulation, licensing requirements, and the business activities of financial institutions. In particular, the German Banking Act requires that an enterprise which engages in one or more of the activities categorized in the German Banking Act as "banking business" or "financial services" in Germany must be licensed as a credit institution (*Kreditinstitut*) or financial services institution (*Finanzdienstleistungsinstitut*), as the case may be. Deutsche Bank AG is licensed as a credit institution and is authorized to conduct banking business and to provide financial services.

Significant parts of the regulatory framework for banks in the European Union are governed by the CRR. The CRR includes requirements relating to regulatory capital, risk-based capital adequacy, monitoring and control of large exposures, consolidated supervision, leverage, liquidity and public disclosure, including Basel 3 standards.

Certain other requirements that apply to us, including those with respect to capital buffers, organizational and risk management requirements, are set forth in the German Banking Act and other German laws, partly implementing European Union directives such as the CRD.

Deutsche Bank AG, headquartered in Frankfurt am Main, Germany, is the parent institution of Deutsche Bank Group. Under the CRR, Deutsche Bank AG, as credit institution and parent company, is responsible for regulatory consolidation of all subsidiary credit institutions, financial institutions, asset management companies and ancillary service undertakings. Generally, the bank regulatory requirements under the CRR and the German Banking Act apply both on a stand-alone and a consolidated basis. However, banks forming part of a consolidated group may receive a waiver with respect to the application of specific regulatory requirements on an unconsolidated basis if certain conditions are met. As of December 31, 2020, Deutsche Bank AG benefited from such a waiver, according to which Deutsche Bank AG needs to apply the requirements relating to own funds, large exposures, exposures to transferred credit risks, leverage and disclosure by institutions, as well as certain risk management requirements, only on a consolidated basis.

Capital Adequacy Requirements

Minimum Capital Adequacy Requirements (Pillar 1)

The minimum capital adequacy requirements for banks are primarily set forth in the CRR. The CRR requires German banks to maintain an adequate level of regulatory capital in relation to the total of their risk positions, referred to as total exposure amount. Risk positions include credit risk positions, market risk positions and operational risk positions (including, among other things, risks related to certain external factors, as well as to technical errors and errors of employees). The most important type of capital for compliance with the capital requirements under the CRR is Common Equity Tier 1 capital. Common Equity Tier 1 capital primarily consists of share capital, retained earnings and other reserves, subject to certain regulatory adjustments. Another component of regulatory capital is Additional Tier 1 capital, which includes, for example, certain unsecured subordinated perpetual capital instruments and related share premium accounts. An important feature of Additional Tier 1 capital is that the principal amount of the instruments will be written down, or converted into Common Equity Tier 1 capital, when the Common Equity Tier 1 capital ratio of the financial institution falls below a minimum of 5.125 % (or such higher level as the issuing bank may determine). Regulators may require an earlier conversion, for example for stress-testing purposes. Common Equity Tier 1 capital and Additional Tier 1 capital together constitute Tier 1 capital. An additional

type of regulatory capital is Tier 2 capital which generally consists of long-term subordinated debt instruments. Tier 1 capital and Tier 2 capital together constitute own funds. Pursuant to the CRR, hybrid capital instruments that qualified as Tier 1 or Tier 2 capital under what is known as Basel 2.5 cease to qualify as such and will be gradually phased out through the end of 2021.

Under the CRR, banks are required to maintain a minimum ratio of Tier 1 capital to total risk exposure amount of 6 % and a minimum ratio of Common Equity Tier 1 capital to total risk exposure of 4.5 %. The minimum total capital ratio of own funds to total risk exposure is 8 %.

Capital Buffers

The German Banking Act also requires banks to build up a mandatory capital conservation buffer (Common Equity Tier 1 capital amounting to 2.5 % of total risk exposure), and authorizes the German Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht* ("BaFin")) to set a domestic counter-cyclical capital buffer for Germany (Common Equity Tier 1 capital of generally 0 % to 2.5 % of total risk exposure, or more in particular circumstances) during periods of high credit growth. Due to the impact of the current pandemic, BaFin has temporarily lowered the counter-cyclical capital buffer to 0%. In order to comply with the countercyclical capital buffer requirement, banks must calculate their institution-specific countercyclical capital buffer as the weighted average of the countercyclical capital buffers that apply to them in the jurisdictions where their relevant credit exposures are located. Accordingly, the total countercyclical buffer requirement, if any, with which we need to comply also depends on the corresponding buffer requirements in other jurisdictions. In addition, BaFin may require banks to build up a systemic risk buffer (Common Equity Tier 1 capital of a minimum of 0.5 % of the total risk exposure amount for all exposures to prevent and mitigate long term non-cyclical systemic or macro-prudential risks not otherwise covered by CRR/CRD. Any systemic risk buffer determined by BaFin in excess of 5% would require prior authorization of the European Commission. Deutsche Bank's current systemic risk buffer is 0 %. G-SIIs are subject to an additional capital buffer (Common Equity Tier 1 capital of between 1 % and 3.5 % of risk-weighted assets), which the BaFin determines for German banks based on a scoring system measuring the bank's global systemic importance. Deutsche Bank's current G-SII capital risk buffer is 1.5 %. BaFin can also determine a capital buffer of Common Equity Tier 1 capital of up to 3 % of risk-weighted assets for other systemically important banks (so-called O-SIIs) in Germany, based on criteria measuring, among others, the bank's importance for the economy in Germany and the European Economic Area. Deutsche Bank is subject to treatment both as a G-SII, as well as an O-SII (on a consolidated basis). Any risk buffer for O-SIIs that exceeds the threshold of 3 % requires prior authorization by the European Commission. Deutsche Bank's current O-SII capital buffer is 2 %. The buffers for G-SIIs and the buffer for O-SIIs are not cumulative; only the higher of these buffers applies. However, such higher buffer and the systemic risk buffer are cumulative. If the total buffer is higher than 5 %, BaFin needs to seek approval by the European Commission. If a bank fails to build up the required capital buffers, it will be subject to restrictions on the pay-out of dividends, share buybacks and discretionary compensation payments. Also, within the single supervisory mechanism ("SSM"), the European Central Bank ("ECB") may require banks to maintain higher capital buffers than those required by the BaFin.

Leverage Ratio

The banking reform package (see "Highlights" above) also introduced Tier 1 capital-based a binding minimum leverage ratio requirement of 3 %. The minimum leverage ratio requirement is calculated on a non-risk basis and complements the other risk-based capital requirements. Banks are currently only required to report and publish their leverage ratios and will become required to comply with the minimum leverage ratio requirement from June 28, 2021. The CRR Quick Fix provided competent authorities with the discretion to allow banks to exclude certain central bank exposures from the calculation of the leverage ratio. In September 2020, the ECB and the BaFin declared the existence of exceptional circumstances and allowed such an exclusion until June 27, 2021.

In addition to the minimum leverage ratio requirement, the banking reform package provides for a leverage ratio buffer requirement for G-SIIs (such as Deutsche Bank), which must be met with Tier 1 capital and is set at 50 % of the G-SII's risk-weighted capital buffer rate. The CRR Quick Fix deferred the application of the leverage ratio buffer by one year to January 1, 2023. Certain aspects relating to the leverage ratio buffer requirement as contained in the CRD (such as restrictions on the pay out of dividends etc. if the requirements are not met) must be implemented in the laws of the individual member jurisdictions.

Pillar 2 Capital Requirements and Guidance

Furthermore, the ECB may impose capital requirements on individual significant credit institutions which are more stringent than the statutory minimum requirements set forth in the CRR, the German Banking Act or the related regulations. Upon completion of the supervisory review and evaluation process ("SREP") discussed in greater detail below, the competent supervisory authority makes an SREP decision in relation to each relevant bank, which may include specific capital and liquidity requirements for each affected bank. Any such additional bank-specific capital requirements resulting from the SREP are referred to as "Pillar 2" requirements in addition to the statutory minimum capital and buffer requirements. Institutions must meet their Pillar 2 requirements with at least 75 % of Tier 1 capital and at least 56.25 % of Common Equity Tier 1 capital.

In addition, the ECB may decide following the SREP to communicate to individual banks an expectation to hold a further Pillar 2 Common Equity Tier 1 capital add-on, the so-called Pillar 2 guidance. The ECB has stated that it generally expects banks to meet the Pillar 2 guidance although it is not legally binding and failure to meet the Pillar 2 guidance does not automatically have legal consequences. The competent supervisory authority may take a range of other measures based on the SREP outcome to address shortcomings in a bank's governance and risk management processes or its capital or liquidity position, such as prohibiting dividend payments to shareholders or distributions to holders of regulatory capital instruments. In light of the COVID-19 pandemic, the ECB allows banks to operate temporarily below the level of capital defined by the Pillar 2 guidance until at least the end of 2022.

For details of Deutsche Bank's regulatory capital, see "Management Report: Risk Report: Risk and Capital Performance" in our Annual Report 2020.

MREL Requirements

As discussed below under "Recovery and Resolution", to ensure that European banks have a sufficient amount of liabilities with loss-absorbing capacity, they are required to meet minimum requirements for own funds and eligible liabilities ("MREL") determined for each institution individually on a case-by-case basis. As part of the banking reform package (see "Highlights" above), the European Union implemented the FSB's TLAC standard for G-SIBs (such as us) by introducing a new Pillar 1 MREL requirement for G-SIIs (the European equivalent term for G-SIBs). This new requirement is based on both risk-based and non-risk-based denominators and will be set at the higher of 18 % of total risk exposure and 6.75 % of the leverage ratio exposure measure following a transition period (until December 31, 2021, 16 % of total risk exposure and 6 % of the leverage ratio exposure measure). It can be met with Tier 1 or Tier 2 capital or debt that meets specific eligibility criteria. Deduction rules apply for holdings by G-SIIs of TLAC instruments of other G-SIIs. In addition, the competent authorities have the ability to impose on G-SIIs individual MREL requirements that exceed the statutory minimum requirements.

Limitations on Large Exposures

The CRR also contains the primary restrictions on large exposures, which limit a bank's concentration of credit risks. The German Banking Act and the Large Exposure Regulation (*Großkredit- und Millionenkreditverordnung*) supplement the CRR. Under the CRR, our exposure to a customer and any customers affiliated with such customer is deemed to be a "large exposure" when the value of such exposure is equal to or exceeds 10 % of our eligible regulatory capital. All exposures to a single customer and any customers affiliated with such customer are aggregated for these purposes. In general, no large exposure may exceed 25 % of our eligible regulatory capital. "Eligible regulatory capital" for this purpose means the sum of Tier 1 capital and Tier 2 capital where the latter may not exceed one third of Tier 1 capital. If the customer is a credit institution or investment firm, the exposure is limited to the higher of 25 % of our eligible regulatory capital or € 150 million. Competent authorities may set a lower limit than € 150 million. For exposures in the trading book, the large exposure regime may give greater latitude, subject to an additional own funds requirement.

The banking reform package (see "Highlights" above) will restrict a bank's exposures to a single counterparty to 25 % of its Tier 1 capital (instead of 25 % of the sum of its Tier 1 and Tier 2 capital) and will further limit exposures between banks designated as G-SIIs, such as Deutsche Bank, to 15 % of Tier 1 capital. The new rules will apply from June 28, 2021.

Liquidity Requirements

The CRR introduced a liquidity coverage requirement intended to ensure that banks have an adequate stock of unencumbered high quality liquid assets that can be easily and quickly converted into cash to meet their liquidity needs for a 30-calendar day liquidity stress scenario. The required liquidity coverage ratio ("LCR") is calculated as the ratio of a bank's liquidity buffer to its net liquidity outflows. Also, banks must regularly report the composition of the liquid assets in their liquidity buffer to their competent authorities.

In addition, the banking reform package (see “Highlights” above) introduced a net stable funding ratio (“NSFR”) to reduce medium- to long-term funding risks by requiring banks to fund their activities with sufficiently stable sources of funding over a one-year period. The NSFR, which will apply from June 28, 2021 onwards, is defined as the ratio of a bank’s available stable funding relative to the amount of required stable funding over a one-year period. Banks must maintain an NSFR of at least 100 %.The NSFR will apply to both the Group as a whole and to individual SSM regulated entities, including the parent entity Deutsche Bank AG. Upon the introduction of the ratio as a binding minimum requirement, we expect both the Group and its subsidiaries for which it applies to be above the regulatory minimum. To achieve this for Deutsche Bank AG, the company is actively working on a number of structural initiatives to improve the standalone NSFR position. In the event these initiatives are not successfully completed by June 2021, Deutsche Bank AG may incur additional costs.

The ECB may impose on individual banks liquidity requirements which are more stringent than the general statutory requirements if the bank’s continuous liquidity would otherwise not be ensured.

Separation of Proprietary Trading Activities by Universal Banks

The German Separation Act provides that deposit-taking banks and their affiliates are prohibited from engaging in proprietary trading that does not constitute a service for others, high-frequency trading, and credit or guarantee transactions with hedge funds and comparable enterprises that are substantially leveraged, unless such activities are exempt or excluded, or in the case no such exemption or exclusion is available, is transferred to a separate legal entity, referred to as a financial trading institution (*Finanzhandelsinstitut*). The separation requirement applies if certain thresholds are exceeded, which is the case for us. In addition, the German Separation Act authorizes the BaFin to prohibit the deposit-taking bank and its affiliates, on a case-by-case basis, from engaging in market-making and other activities that are comparable to the activities prohibited by law, if these activities may put the solvency of the deposit-taking bank or any of its affiliates at risk. In the event that the BaFin orders such a prohibition, the respective activities must be discontinued or transferred to a separate financial trading institution. The financial trading institution may be established in the form of an investment firm or a bank and may be part of the same group as the deposit-taking bank. However, it must be economically and organizationally independent from the deposit-taking bank and its other affiliates, and it has to comply with enhanced risk management requirements. We have established a compliance and control framework to ensure that no prohibited activities are conducted. Deutsche Bank has not established a financial trading institution.

Anti-Financial Crime, Sanctions, Fraud, Bribery and Corruption

Financial sector participants are required to take steps to prevent the abuse of the financial system through money laundering and other financial crime. The European Union has continually sought to strengthen its framework for anti-money laundering and combating the financing of terrorism, in line with international standards set by the Financial Action Task Force. Recent developments include the implementation into German law as of January 2020 of the European Union’s Fifth Anti-Money Laundering Directive. It aims to enhance transparency on beneficial ownership and reinforce the framework for the assessment of high-risk third countries, address other risk and further the cooperation between anti-money-laundering and prudential supervisors. In addition, the Sixth Anti-Money Laundering Directive will now be implemented into German law even though this should already have been done by December 3, 2020. Generally, the requirements (such as know-your-customer requirements) set out in the German AML Act (*Geldwäschegesetz*) and German Banking Act apply to all business lines and infrastructure units as well as all subsidiaries and affiliates that undertake AML-relevant business and in which Deutsche Bank AG has a dominating influence.

We are required to comply with international sanctions, which are measures to protect national security interests or international law by countries, multilateral or regional organizations against certain countries, organizations or individuals restricting economic activity. In 2020, various sanctions laws and regulations were issued or changed requiring us to update policies and processes such as name list screening and transaction filtering.

We are subject to fraud, bribery and corruption laws and regulations under the German Criminal Code and in the other countries in which we conduct business. The UK Bribery Act 2010 has extraterritorial impact and requires us to design and develop appropriate measures to mitigate bribery and corruption risk and to administer controls and safeguards to mitigate such risks.

Data Protection and Cyber Risk

We have to comply with all applicable data protection laws in the countries in which we operate. The regulation on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, also referred to as the General Data Protection Regulation (“GDPR”), became applicable in the European Union on May 25, 2018. It relates to data protection and privacy rights of individuals within the European Union and addresses the export of personal data to other jurisdictions. The GDPR primarily aims at giving individuals control over their personal data and to unifying the regulatory environment for cross-border business. Superseding the 1995 Data Protection Directive, the GDPR contains

provisions and requirements pertaining to the processing of personal data of individuals and also applies to businesses inside the European Union that are processing personal data. The regulation furthermore applies to businesses outside of the European Union if goods or services are offered to data subjects in the European Union, or if the behavior of data subjects in the European Union is being monitored. The GDPR imposes compliance obligations and grants broad enforcement powers to supervisory authorities, including the potential to levy significant fines for non-compliance.

Under the German Banking Act and the BaFin's Minimum Requirements for Risk Management for Banks (*Mindestanforderungen an das Risikomanagement*) information security needs to be an integral part of a financial institution's IT strategy and risk management. The BaFin requires that financial institutions establish a comprehensive information and cyber security program, define standards, implement controls and adhere to their resulting security policies and standards in accordance with evolving business requirements, regulatory guidance, and an emerging threat landscape. Information security risk management is part of vendor risk management for any procurement if information technology or outsourcing activity include the use of new technologies like cloud services. Information security risk (also referred to as cyber risk) is a component of operational risk assessed in the context of the SREP under Guidelines on Information and Communication Technology Risk Assessment issued by the European Banking Authority, which expects financial institutions to protect the confidentiality, integrity, and availability of customer data and information assets. Such guidelines are complemented by the European Banking Authority's Guidelines on ICT and Security Risk Management.

Remuneration Rules

Under the German Banking Act and the German Credit Institution Remuneration Regulation (*Institutsvergütungsverordnung*), we are subject to certain restrictions on the remuneration we pay our management board members and employees. These remuneration rules implement requirements of the CRD and impose a cap on bonuses. Pursuant to this cap, the variable remuneration for management board members and employees must not exceed the fixed remuneration. The variable remuneration may be increased to twice the management board member's or employee's fixed remuneration if expressly approved by the shareholders' meeting with the required majority. In addition, we are obliged to identify individuals who have a material impact on our risk profile ("material risk takers"). Such material risk takers are subject to additional rules, such as the requirement that at least 40 % or, as the case may be, at least 60 % of the variable remuneration granted to them must be on a deferred basis. Following the revision of the German Credit Institution Remuneration Regulation, the minimum deferral period will be extended from three to four years and may increase to five years depending on certain factors. For certain material risk takers the minimum deferral period is set to five years. Also at least 50 % of the variable remuneration for material risk takers must be paid in shares of the bank or instruments linked to shares of the bank. Variable compensation of material risk takers has to be subject to an ex post risk adjustment mechanism and from the 2018 measurement period onwards to a claw back provision in case of personal wrongdoing. Finally, we are required to comply with certain disclosure requirements relating to the remuneration we pay to, and our remuneration principles in respect of, our material risk takers and other affected employees.

For details of Deutsche Bank's remuneration system, see "Management Report: Compensation Report" in our Annual Report 2020.

Deposit Protection and Investor Compensation in Germany

The Deposit Protection Act and the Investor Compensation Act

The German Deposit Protection Act (*Einlagensicherungsgesetz*) and the German Investor Compensation Act (*Anlegerentschädigungsgesetz*) provide for a mandatory deposit protection and investor compensation system in Germany, based on a European Union directive on deposit guarantee schemes ("DGS Directive") and a European Union directive on investor compensation schemes.

The German Deposit Protection Act requires that each German bank participates in one of the statutory government-controlled deposit protection schemes (*Entschädigungseinrichtungen*). The Entschädigungseinrichtung deutscher Banken GmbH acts as the deposit protection scheme for private sector banks such as Deutsche Bank, collects and administers the contributions of the member banks, and settles any compensation claims of depositors in accordance with the German Deposit Protection Act. The Federal Ministry of Finance intends to have the Entschädigungseinrichtung deutscher Banken GmbH as the sole German deposit protection scheme for all German banks as from October 2021.

Under the German Deposit Protection Act, deposit protection schemes are generally liable for obligations resulting from deposits denominated in any currency in an amount of up to € 100,000 per depositor and bank. Certain depositors, such as banks, insurance companies, investment funds and governmental bodies, are excluded from coverage.

Deposit protection schemes are financed by annual contributions of the participating banks proportionate to their potential liabilities, depending on the amount of its covered deposits and the degree of risk the bank is exposed to. A target level of 0.8 % of the total covered deposits of the participating banks is supposed to be reached by July 3, 2024. Deposit protection schemes may also levy special contributions if required to settle compensation claims. Where the available funds of the deposit protection scheme fall below the target level, it must raise the level of contributions until the target level is reached.

Deposit protection schemes will be required to contribute to bank resolution costs where resolution tools are used. The contribution made by the deposit protection scheme is limited to the compensation it would have to pay if the affected bank had become subject to insolvency proceedings. Furthermore, deposit protection schemes may provide funding to its participating banks to avoid their failure under certain circumstances.

Under the German Investor Compensation Act, in the event that the BaFin ascertains a compensation case, Entschädigungseinrichtung deutscher Banken GmbH as Deutsche Bank AG's deposit protection scheme is also required to compensate 90 % of the aggregate claims of each covered creditor arising from securities transactions denominated in euro or in a currency of any other European Union Member State up to an amount of the equivalent of € 20,000. Many financial sector participants such as banks, insurance companies, investment funds, governmental bodies or medium-sized and large corporations do not benefit from this coverage.

European Deposit Insurance Scheme

The European Union is still aiming for a common European Deposit Insurance Scheme ("EDIS") based upon a proposal of the European Commission originally published in 2015. EDIS is still under discussion at the European Union level and the ultimate impact on us is uncertain.

Voluntary Deposit Protection System

Liabilities to creditors that are not covered by a statutory compensation scheme may be covered by the Deposit Protection Fund (*Einlagensicherungsfonds*) set up by the Association of German Banks (Bundesverband deutscher Banken e.V.) of which Deutsche Bank AG is a member. The Deposit Protection Fund protects deposits, i.e., generally credit balances credited to an account or resulting from interim positions which the bank is required to repay, subject to certain exclusions, up to an amount equal to 15 % of the bank's own funds (*Eigenmittel*) as further specified in the Deposit Protection Fund's by-laws. This limit will be reduced to 8.75 % from January 1, 2025 onwards.

The financial resources of the Deposit Protection Fund are funded by contributions of the participating banks. If the resources of the Fund are insufficient, banks may be required to make higher or special contributions.

Market Conduct, Investor Protection and Infrastructure Regulation

Under the German Securities Trading Act (*Wertpapierhandelsgesetz*), the BaFin regulates and supervises securities trading, including the provision of investment services, in Germany. The German Securities Trading Act contains, among other things, disclosure and transparency rules for issuers of securities that are listed on a German exchange and organizational requirements as well as rules of conduct which apply to all businesses that provide investment services. Investment services include, in particular, the purchase and sale of securities or derivatives for others and the intermediation of transactions in securities or derivatives as well as investment advice. The BaFin has broad powers to investigate businesses providing investment services to monitor their compliance with the organizational requirements, rules of conduct and reporting requirements. In addition, the German Securities Trading Act requires an independent auditor to perform an annual audit of the investment services provider's compliance with its obligations under the German Securities Trading Act.

A related area is the Market Abuse Regulation ("MAR") which establishes a common European Union framework for, inter alia, insider dealing, the public disclosure of inside information, market manipulation, and managers' transactions. The German Securities Trading Act, which had contained rules on market abuse prior to the entering into force of the MAR, continues to supplement the MAR in this respect, for example by providing for sanctions in case of violations of the MAR.

In addition, the revised Markets in Financial Instruments Directive ("MiFID 2"), implemented primarily through amendments to the German Securities Trading Act, and the new Markets in Financial Instruments Regulation ("MiFIR") became applicable on January 3, 2018. Their objectives are greater regulation and oversight of financial firms providing investment services or activities in the European Union by covering additional markets and instruments, the extension of pre- and post-trade transparency rules from equities to all financial instruments, greater restrictions on operating trading platforms, and greater sanctioning powers. The trading venues under supervision now also include organized trading facilities. In addition, MiFID 2/MiFIR, introduced a trading obligation for those OTC derivatives which are subject to mandatory clearing and which are sufficiently standardized, and new investor protection rules that significantly impact the way investment firms distribute products. The Regulation on Key Information Documents or Packaged Retail and Insurance-based Investment Products

(PRIIPs) applies since January 1, 2018. It focuses on disclosure and transparency requirements when advising on or selling retail structured products and other complex and packaged investment products and aims at increasing investor protection.

Beyond the infrastructure-related provisions of MiFID 2 and MiFIR, market infrastructure has been the focus of other regulatory initiatives of the European Union that are relevant for Deutsche Bank. The Regulation on Transparency of Securities Financing Transaction aims at increasing transparency and reducing risks associated with such transactions. The regulation requires that repos, securities lending transactions and transactions with equivalent effect and margin lending transactions be reported to trade repositories and requires risk disclosures and consent before assets are reused or re-hypothecated. For the OTC derivatives markets, the European Regulation on OTC Derivatives, Central Counterparties and Trade Repositories, also referred to as European Market Infrastructure Regulation ("EMIR"), pursues the goals of reducing system, counterparty and operational risk and increase transparency in the OTC derivatives markets. The regulation introduced requirements for standardized over-the-counter derivatives, such as central clearing, margining, portfolio reconciliation or reporting to trade repositories.

In addition, the European Union's Regulation on Financial Benchmarks seeks to ensure the integrity and accuracy of indices used as benchmarks for financial instruments and contracts, and prevent their manipulation. European Union-regulated banks, investment firms, fund managers and certain other supervised entities are only permitted to use benchmarks provided in accordance with the regulation. Benchmark administrators in the European Union are required to obtain authorization or registration, and are subject to rules and oversight regarding their organization, governance and conduct. Benchmarks provided by non-EU administrators are permissible under certain conditions.

Legal Requirements relating to Financial Statements and Audits

As required by the German Commercial Code (*Handelsgesetzbuch*), Deutsche Bank AG prepares its non-consolidated financial statements in accordance with German GAAP. Deutsche Bank Group's consolidated financial statements are prepared in accordance with International Financial Reporting Standards ("IFRS"), and our compliance with capital adequacy requirements and large exposure limits is determined solely based upon such consolidated financial statements.

Under German law, Deutsche Bank AG is required to be audited annually by a certified public accountant (*Wirtschaftsprüfer*). Deutsche Bank AG's auditor is appointed each year at the annual shareholders' meeting. However, the supervisory board mandates the auditor and supervises the audit. The BaFin and the Deutsche Bundesbank ("Bundesbank"), the German central bank, must be informed of the appointment and the BaFin may reject the auditor's appointment. The German Banking Act requires that a bank's auditor inform the BaFin and the Bundesbank of any facts that come to the auditor's attention which would lead it to refuse to certify or to limit its certification of the bank's annual financial statements or which would adversely affect the bank's financial position. The auditor is also required to notify the BaFin and the Bundesbank in the event of a material breach by management of the articles of association or of any other applicable law. The auditor is required to prepare a detailed and comprehensive annual audit report (*Prüfungsbericht*) for submission to the bank's supervisory board, the BaFin and the Bundesbank. The BaFin and the Bundesbank share their information with the ECB. In addition to the statutory audit directive and its amendment that has been implemented into national law, Deutsche Bank is also subject to the European Union's Regulation on Specific Requirements regarding Statutory Audit of Public-Interest Entities which includes requirements for mandatory audit firm rotation and restrictions on non-audit services.

Banking Supervision under the Single Supervisory Mechanism

Under the European Union's system of financial supervision referred to as the single supervisory mechanism ("SSM"), the ECB is the primary supervisor of all systemically important or significant credit institutions (such as Deutsche Bank AG) and their banking affiliates in the relevant Member States. The competent national authorities supervise the remaining, less significant banks under the oversight of the ECB. As a result, Deutsche Bank AG is supervised by the ECB, the BaFin and the Bundesbank.

With respect to us and other significant credit institutions, the ECB is the primary supervisor and is responsible for most tasks of prudential supervision, such as compliance with regulatory requirements concerning own funds, large exposure limits, leverage, liquidity, securitizations, corporate governance, business organization and risk management requirements. The ECB carries out its day-to-day supervisory functions through a joint supervisory team ("JST") established for Deutsche Bank Group. The JST is led by the ECB and comprises staff from the ECB and national supervisory authorities, including the BaFin and the Bundesbank. In addition, and regardless of whether an institution is significant or not, the ECB is responsible for issuing new licenses to credit institutions and for assessing the acquisition and increase of significant participations (also referred to as qualifying holdings) in credit institutions established in those Member States of the European Union that participate in the SSM and where notification of such changes must be filed.

The BaFin is our principal supervisor for regulatory matters with respect to which we are not supervised by the ECB. These include business conduct in the securities markets, in particular when providing investment services to clients, payment services and implementing measures against money laundering and terrorist financing, and they also include certain special areas of bank regulation, such as those related to the issuance of covered bonds (Pfandbriefe) and the supervision of German home loan banks (*Bausparkassen*) with regard to certain regulatory requirements specifically applicable to such home loan banks Generally, the BaFin also supervises us with respect to those requirements under the German Banking Act that are not based upon European law. The Bundesbank supports the BaFin and the ECB and closely cooperates with them. The cooperation includes the ongoing review and evaluation of reports submitted by us and of our audit reports as well as assessments of the adequacy of our capital base and risk management systems. The ECB, the BaFin and the Bundesbank receive comprehensive information from us in order to monitor our compliance with applicable legal requirements and to obtain information on our financial condition.

Supervisory Review and Evaluation Process

For significant institutions such as Deutsche Bank, the JST conducts the SREP for an ongoing assessment of risks, governance arrangements and the capital and liquidity situation. The SREP requires that the JSTs review the arrangements, strategies, processes and mechanisms of supervised banks on a regular basis, in order to evaluate risks to which these banks are or might be exposed, risks they could pose to the financial system, and risks revealed by stress testing.

The SREP framework consists of a business model analysis, an assessment of internal governance and institution-wide control arrangements, an assessment of risks to capital and adequacy of capital to cover these risks; and an assessment of risks to liquidity and adequacy of liquidity resources to cover these risks. The SREP can result in Pillar 2 capital and liquidity requirements or guidance for the relevant institution (see above “Pillar 2 Capital Requirements and Guidance”).

Audits, Investigations and Enforcement

Investigations and Supervisory Audits

The ECB and the BaFin may conduct audits of banks on a discretionary basis, as well as for cause. In particular, the ECB may audit our compliance with requirements with respect to which it supervises us, such as those set forth in the CRR/CRD. The BaFin may also decide to audit our compliance with requirements with respect to which it supervises us, such as those relating to business conduct in the securities markets and the regulation of anti-money laundering, to counter terrorist financing and payment services, as well as certain special areas of bank regulation, such as those related to the issuance of covered bonds and the supervision of German home loan banks.

The ECB as well as the BaFin may require a bank to furnish information and documents in order to ensure that the bank is complying with applicable bank supervisory laws. The ECB and the BaFin may conduct investigations without having to state a reason therefor. Such investigations may also take place at a foreign entity that is part of a bank’s group for regulatory purposes. Investigations of foreign entities are limited to the extent that the law of the jurisdiction where the entity is located restricts such investigations.

The ECB and the BaFin may attend meetings of a bank’s supervisory board and shareholders meetings. They also have the authority to require that such meetings be convened.

Supervisory and Enforcement Powers

The ECB has a wide range of enforcement powers in the event it discovers any irregularities concerning adherence to requirements with respect to which it supervises us.

It may, for example,

- impose additional own funds or liquidity requirements in excess of statutory minimum requirements;
- restrict or limit a bank’s business;
- require the cessation of activities to reduce risk;
- require a bank to use net profits to strengthen its own funds;
- restrict or prohibit dividend payments to shareholders or distributions to holders of Additional Tier 1 instruments; or
- remove the members of the bank’s management or supervisory board members from office.

To the extent necessary to carry out the tasks granted to it, the ECB may also require national supervisory authorities to make use of their powers under national law. If these measures are inadequate, the ECB may revoke the bank’s license. Furthermore, the ECB has the power to impose administrative penalties in case of breaches of directly applicable European Union laws, such as the CRR, or of applicable ECB regulations and decisions. Penalties imposed by the ECB may amount to

up to twice the amount of profits gained or losses avoided because of the violation, or up to 10 % of the total annual turnover of the relevant entity in the preceding business year or such other amounts as may be provided for in relevant European Union law. In addition, where necessary to carry out the tasks granted to it, the ECB may also require that the BaFin initiate proceedings to ensure that appropriate penalties are imposed on the affected bank.

The BaFin also retains a wide range of enforcement powers. As discussed above, it may take action if instructed by the ECB in connection with supervisory tasks granted to the ECB. With respect to supervisory tasks remaining with the BaFin, the BaFin may take action upon its own initiative. In particular, if a bank is in danger of defaulting on its obligations to creditors, the BaFin may take emergency measures to avert default. These emergency measures may include:

- issuing instructions relating to the management of the bank;
- prohibiting the acceptance of deposits and the extension of credit;
- prohibiting or restricting the bank's managers from carrying on their functions;
- prohibiting payments and disposals of assets;
- closing the bank's customer services; and
- prohibiting the bank from accepting any payments other than payments of debts owed to the bank.

The BaFin may also impose administrative pecuniary penalties under the German Banking Act and other German laws. Penalties under the German Banking Act may amount to generally up to € 5 million or, in certain cases, € 20 million, depending of the type of offense. If the economic benefit derived from the offense is higher, the BaFin may impose penalties of up to 10 % of the net turnover of the preceding business year or twice the amount of the economic benefit derived from the violation.

Finally, violations of the German Banking Act may result in criminal penalties against the members of the Management Board or senior management.

Recovery and Resolution

Germany participates in the European Union's single resolution mechanism ("SRM"), which centralizes at a European level the key competences and resources for managing the failure of banks in Member States of the European Union participating in the banking union. The SRM is based on the SRM Regulation and the BRRD, which in Germany are mainly implemented through the German Recovery and Resolution Act (*Sanierungs- und Abwicklungsgesetz*).

Under the SRM, broad resolution powers with respect to banks domiciled in the participating Member States are granted to the Single Resolution Board ("SRB") as the central European resolution authority and to the competent national resolution authorities. Resolution powers in particular include the power to reduce, including to zero, the nominal value of shares, or to cancel shares outright, and to write down certain eligible subordinated and unsubordinated unsecured liabilities, including to zero, or convert them into equity (commonly referred to as "bail-in").

For a bank directly supervised by the ECB, such as Deutsche Bank, the SRB draws up the resolution plan, assesses the bank's resolvability and may require legal and operational changes to the bank's structure to ensure its resolvability. In the event that a bank is failing or likely to fail and certain other conditions are met, in particular where there is no reasonable prospect that any alternative private sector measures would prevent the failure and resolution measures are necessary in the public interest, the SRB is responsible for adopting a resolution scheme for resolving the bank pursuant to the SRM Regulation. The European Commission and, to a lesser extent, the Council of the European Union, have a role in endorsing or objecting to the resolution scheme proposed by the SRB. The resolution scheme would be addressed to and implemented by the competent national resolution authorities (the BaFin in Germany).

Resolution measures that could be imposed upon a failing bank may include a range of measures including the transfer of shares, assets or liabilities of the bank to another legal entity, the reduction, including to zero, of the nominal value of shares, the dilution of shareholders of a failing bank or the cancellation of shares outright, or the amendment, modification or variation of the terms of the bank's outstanding debt instruments, for example by way of deferral of payments or a reduction of the applicable interest rate. Furthermore, by way of a "bail-in", certain liabilities may be written down, including to zero, or converted into equity after the bank's regulatory capital has been exhausted.

To ensure that resolution measures can be effectively taken, contractual obligations governed by the laws of a non-EU country or that are subject to jurisdiction outside the European Union are required to include contractual provisions that ensure that the relevant obligation can be bailed in. In the case of financial contracts governed by the laws of a non-EU country or that are subject to jurisdiction outside the European Union, stay acceptance clauses need to be included.

To ensure sufficient availability of liabilities with loss-absorbing capacity that could be bailed in, the SRM Regulation and the German Recovery and Resolution Act introduced a requirement for banks to meet minimum requirements for own funds and eligible liabilities ("MREL"). The required level of MREL is determined by the competent resolution authorities for each

supervised bank individually on a case-by-case basis, depending on the preferred resolution strategy. In the case of Deutsche Bank AG, MREL is determined by the SRB.

In addition, the banking reform package entered into force on June 27, 2019 (see “Highlights” above) implemented the FSB’s TLAC standard for G-SIBs by introducing a new Pillar 1 MREL requirement for G-SIIs (see “MREL Requirements” above).

G-SIIs will need to predominantly rely on capital instruments or eligible subordinated debt for this purpose. Effective January 1, 2017, the German Banking Acts provided for a new class of statutorily subordinated debt securities that rank as senior non-preferred below the bank’s other senior liabilities (but in priority to the bank’s contractually subordinated liabilities, such as those qualifying as Tier 2 instruments). Following a harmonization effort by the European Union implemented in Germany effective July 21, 2018, banks are permitted to decide if a specific issuance of eligible senior debt will rank as senior non-preferred debt or as senior preferred debt.

The SRB is charged with administering the Single Resolution Fund, a pool of money which is financed by bank levies raised at national level and intended to reach a target level of 1 % of insured deposits of all banks in Member States participating in the SRM by the end of 2023. It will be used for resolving failing banks after other options, such as the bail-in tool, have been exhausted. In line with the German Recovery and Resolution Act, public financial support for a failing bank should only be used as a last resort, after having assessed and exploited, to the maximum extent possible, resolution measures set forth in the SRM Regulation and the German Recovery and Resolution Act, including the bail-in tool.

Regulation in the European Economic Area and Brexit

The European Union pursues common standards of laws and regulations to create consistency across the internal market and reduce compliance and regulatory burdens for businesses operating on a cross-border basis. The Agreement on the European Economic Area (EEA) extends this objective to Iceland, Liechtenstein and Norway. Members of the EEA have agreed to enact legislation similar to that passed in the European Union in many areas. Within the EEA, Deutsche Bank AG generally operates under the so-called “European Passport”. Deutsche Bank AG is subject to regulation and supervision primarily by the ECB and the BaFin. Deutsche Bank AG provides services in the European Economic Area under the “European Passport” both through local branches established in many of the Member States, but also on a cross border basis from its headquarters in Frankfurt. To the extent that activities are carried out within a Member State’s jurisdiction, the authorities of that host Member State supervise the conduct of such activities. This includes, for example, rules on treating clients fairly and rules governing a bank’s conduct in the securities market.

The United Kingdom (UK) ceased to be a Member State of the European Union as from 11 pm on January 31, 2020, and entered into a ‘Transition Period’ pursuant to UK/EU Withdrawal Act 2020 during which EU law continued to be applicable in the UK. On December 31, 2020, the Transition Period terminated, and EU law was no longer applicable within the UK. For the UK, this meant that all extensions of EU Member State ‘privileges’ were no longer available including any reliance upon the European Passport and automatic rights of access to EU market infrastructure.

As from the end of the Transition Period, new UK requirements must be complied with when conducting regulated activity in the UK, both as regards cross border business as well as Deutsche Bank AG London Branch activity. Deutsche Bank AG is planning to continue to provide banking and other financial services in the UK both from its London Branch and also on a cross-border basis in compliance with applicable law. Deutsche Bank AG is now subject to additional regulatory requirements in the United Kingdom, and its activities in the United Kingdom will be supervised and monitored by both the Prudential Regulatory Authority (“PRA”) and the Financial Conduct Authority (“FCA”). Deutsche Bank AG is already in the process of applying for authorization to provide banking and other financial services in the United Kingdom. The date by which Deutsche Bank AG can expect to receive UK authorisation is currently unknown, and in the meantime, it has the benefit of ‘deemed permission’ pursuant to the UK’s Temporary Permissions Regime (TPR). The TPR also provides Deutsche Bank AG with some temporary relief as to needing to comply with a number of UK rules by allowing ‘substituted compliance’ with similar EU rules. However, certain UK rules have already come into effect and some of these conflict with the similar European rules, and this has already posed challenges for both Deutsche Bank AG and the financial services industry generally (e.g., Derivatives Trading Obligation and Share Trading Obligation under MiFID).

Subsidiaries of the Deutsche Bank Group established in the EEA which were previously benefitting from the European Passport will also need to seek authorisation in the UK if any plan to continue to service UK clients or conduct UK regulated activity in the UK. Certain other Deutsche Bank Group subsidiaries have had to assess whether they conduct regulated activity in the UK (e.g. by providing UK regulated services to UK based clients), and where necessary, make plans to run off that activity within the UK’s Financial Services Contracts Regime (FSCR) or otherwise ensure such activity can be conducted pursuant to a UK licensing exemption (i.e., an overseas persons exclusion). Deutsche Bank subsidiaries expected to conduct contractual run-off operations within the FSCR include BHM (FFT), Norisbank (FFT), DB Spa (Milan), DB SAE (Madrid), DB Polska (Warsaw), DB Luxembourg (Brussels) and all with respect to retail client activity only (largely as a result of clients having moved to the UK since first availing of the services).

Regulation and Supervision in the United States

Our operations are subject to extensive federal and state banking, securities and derivatives regulation and supervision in the United States. We engage in U.S. banking activities directly through our New York branch. We also control U.S. banking organization subsidiaries, including DB USA Corporation and Deutsche Bank Trust Company Americas ("DBTCA"), and U.S. broker-dealers, such as Deutsche Bank Securities Inc., U.S. non-depository trust companies and nonbanking subsidiaries. We hold our U.S. subsidiaries through two intermediate holding companies, DB USA Corporation, through which our U.S. banking subsidiaries and the large majority of our other U.S. subsidiaries are held, and DWS USA Corporation, through which our U.S. asset management subsidiaries are held.

In 2010, the United States enacted the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), which provides a broad framework for significant regulatory changes that extend to almost every area of U.S. financial regulation. While rulemaking in respect of many of the provisions of the Dodd-Frank Act has already taken place, full implementation of the Dodd-Frank Act will require further detailed rulemaking and uncertainty remains about the final details, timing and impact of some rules. Some existing regulations implementing the Dodd-Frank Act are undergoing tailoring as part of the implementation process. In addition, the substance and impact of the Dodd-Frank Act may be affected by subsequent legislation and changes in the U.S. political landscape.

The Dodd-Frank Act provisions known as the "Volcker Rule" limit the ability of banking entities and their affiliates to engage as principal in certain types of proprietary trading and to sponsor or invest in private equity or hedge funds or similar funds ("covered funds"), subject to certain exclusions and exemptions. In the case of non-U.S. banking entities such as Deutsche Bank AG, these exemptions permit certain activities conducted outside the United States, provided that certain criteria are satisfied. The Volcker Rule also limits the ability of banking entities and their affiliates to enter into certain transactions with covered funds with which they or their affiliates have certain relationships. The Volcker Rule also requires banking entities to establish comprehensive compliance programs designed to help ensure and monitor compliance with restrictions under the Volcker Rule. In September and October 2019, the U.S. federal agencies responsible for administration of the Volcker Rule finalized amendments to simplify and tailor compliance requirements related to the proprietary trading provisions of the Volcker Rule. These amendments to the Volcker Rule became effective January 1, 2020, with compliance required by January 1, 2021. On July 31, 2020, the agencies adopted further amendments to the Volcker Rule's covered funds provisions, which became effective on October 1, 2020. While the recent amendments are intended to streamline the existing requirements and result in a more simplified revised final rule, these changes to the Volcker Rule may result in increased compliance and operational costs.

The Dodd-Frank Act also provides regulators with tools to provide greater capital, leverage and liquidity requirements and other prudential standards, particularly for financial institutions that pose significant systemic risk. U.S. regulators are also able to restrict the size and growth of systemically significant non-bank financial companies and large interconnected bank holding companies. U.S. regulators are also required to impose bright-line debt-to-equity ratio limits on financial companies that the Financial Stability Oversight Council determines pose a grave threat to financial stability if it determines that the imposition of such limits is necessary to minimize the risk.

With respect to prudential standards, in February 2014, the Federal Reserve Board adopted rules that set forth how the U.S. operations of certain foreign banking organizations ("FBOs"), such as Deutsche Bank, are required to be structured, as well as the enhanced prudential standards that apply to our U.S. operations. Under these rules, as of July 1, 2016, a large FBO with U.S.$ 50 billion or more in U.S. non-branch assets, such as Deutsche Bank, was required to establish or designate a separately capitalized top-tier U.S. intermediate holding company (an "IHC") that would hold substantially all of the FBO's ownership interests in its U.S. subsidiaries. The Federal Reserve Board may permit an FBO subject to the U.S. IHC requirement to establish or designate multiple U.S. IHCs upon written request. On July 1, 2016, we designated DB USA Corporation as our IHC. In March 2018, we completed the partial initial public offering of our Asset Management division, consolidating these activities in DWS Group GmbH & Co. KGaA, in which we retain approximately 80 % of the shares. In April 2018, DWS USA Corporation was formed as a subsidiary of DWS Group GmbH & Co. KGaA, and, following receipt of Federal Reserve Board approval, we designated it as our second IHC, through which our U.S. asset management subsidiaries are held. As of the date of their designation or formation, they each became subject, on a consolidated basis, to the risk-based and leverage capital requirements under the U.S. Basel 3 capital framework, capital planning and stress testing requirements (on a phased-in basis), U.S. liquidity buffer requirements and other enhanced prudential standards comparable to those applicable to top-tier U.S. bank holding companies of a similar size as DB USA Corporation. Supplementary leverage ratio requirements applicable to DB USA Corporation took effect beginning in January 2018 and were applicable to DWS USA Corporation upon its formation.

On October 10, 2019, the Federal Reserve Board finalized rules to categorize the U.S. operations of large FBOs based on size, complexity and risk for purposes of tailoring the application of the U.S. enhanced prudential standards (the "Tailoring Rules"). The Tailoring Rules do not significantly change the capital requirements that apply to DB USA Corporation or DWS USA Corporation, although they provide the option to comply with certain simplifications to the capital requirements. However,

the Tailoring Rules provide modest relief for our U.S. IHCs with respect to applicable liquidity requirements so long as the IHCs' combined weighted short term wholesale funding remains below U.S.$ 75 billion.

The Federal Reserve Board has the authority to examine an IHC, such as DB USA Corporation and DWS USA Corporation, and its subsidiaries, as well as U.S. branches and agencies of FBOs, such as our New York branch. An FBO's U.S. branches and agencies are not held beneath an IHC; however, the U.S. branches and agencies of the FBO are subject to certain liquidity requirements, as well as other specific enhanced prudential standards, such as risk management and, under certain circumstances, asset maintenance requirements. Additionally, the Tailoring Rules also placed requirements on the FBO itself related to the adequacy and reporting of the FBO's home country capital and stress testing regime.

In June 2018 and October 2019, the Federal Reserve Board finalized rules relating to single counterparty credit limits that apply to an FBO's combined U.S. operations and its IHCs. Our IHCs are prohibited from having net credit exposure to a single unaffiliated counterparty in excess of 25 percent of each IHC's tier 1 capital. Our combined U.S. operations (including our IHCs and our New York branch) would become separately subject to similar restrictions beginning July 1, 2021 unless Deutsche Bank AG certifies compliance with a home country large exposure regime that is consistent with the Basel large exposure framework. In May 2020, the Federal Reserve Board announced a final rule to extend the initial compliance date for FBOs' combined U.S. operations to July 1, 2021 for FBOs that have the characteristics of a G-SIB. Deutsche Bank AG may avail itself of substituted compliance through certification for its combined U.S. operations, as the European Union's framework becomes effective on June 28, 2021.

In addition, the Federal Reserve Board proposed but has not adopted an "early remediation" framework under which it would implement prescribed restrictions and penalties against the FBO and its U.S. operations, such as restrictions on the ability of the FBO and its U.S. operations to make discretionary compensation payments to certain of its officers and directors, if the FBO and/or its U.S. operations do not meet certain risk-based capital, leverage, liquidity, stress testing or other risk management requirements, and would authorize the termination of U.S. operations under certain circumstances.

As a bank holding company with assets of U.S.$ 250 billion or more, Deutsche Bank AG is required under Title I of the Dodd-Frank Act to prepare and submit to the Federal Reserve Board and the Federal Deposit Insurance Corporation ("FDIC") either a full or targeted resolution plan (the "U.S. Resolution Plan") on a timeline prescribed by such agencies. The U.S. Resolution Plan must demonstrate that Deutsche Bank AG has the ability to execute a strategy for the orderly resolution of its designated U.S. material entities and operations. For foreign-based companies subject to these resolution planning requirements such as Deutsche Bank AG, the U.S. Resolution Plan relates only to subsidiaries, branches, agencies and businesses that are domiciled in or whose activities are carried out in whole or in material part in the United States. Deutsche Bank AG filed its U.S. Resolution Plan by July 1, 2018. The 2018 U.S. Resolution Plan describes the single point of entry strategy for Deutsche Bank's U.S. material entities and operations and prescribes that DB USA Corporation, our single U.S. IHC as of December 31, 2017, would provide liquidity and capital support to its U.S. material entity subsidiaries and ensure their solvent wind-down outside of applicable resolution proceedings. Deutsche Bank received feedback from the Federal Reserve and FDIC in December 2018. The Federal Reserve Board and FDIC found that Deutsche Bank's U.S. Resolution Plan had no deficiencies but identified one shortcoming in the plan, associated with governance mechanisms and related escalation triggers. Deutsche Bank submitted a response to its December 2018 feedback letter on April 1, 2019. Deutsche Bank's response discussed its proposed remediation of the shortcoming as well as enhancements of its resolution capabilities.

Deutsche Bank submitted its 2020 U.S. Resolution Plan on September 29, 2020. The 2020 U.S. Resolution Plan, like the 2018 U.S. Resolution Plan, described a single point of entry strategy for DB USA Corporation. It also explained how Deutsche Bank remediated the shortcoming and provided an update on the enhancement of its resolutions capabilities. On December 9, 2020, the Federal Reserve Board and FDIC confirmed that the shortcoming previously identified in Deutsche Bank AG's 2018 U.S. Resolution Plan had been remediated. Also on December 9, 2020, the agencies finalized guidance for the resolution plans of certain large foreign banks, including Deutsche Bank AG. In that guidance, the agencies tailored their expectations around resolution capital and liquidity, derivatives and trading activity, as well as payment, clearing, and settlement activities. The agencies also provided information for large banks, including Deutsche Bank AG, which will inform the content of their next U.S. Resolution Plans, which now are due December 17, 2021. In particular, these 'targeted' plans (which are subsets of a full resolution plans) will be required to include core elements of a firm's resolution strategy — such as capital, liquidity, and recapitalization strategies — as well as how each firm has integrated changes to and lessons learned from its response to the COVID-19 pandemic into its resolution planning process.

Both DB USA Corporation and DWS USA Corporation were subject to the Federal Reserve Board's Comprehensive Capital Analysis and Review ("CCAR") for 2020. On June 25, 2020, the Federal Reserve Board publicly indicated that it did not object to the 2019 capital plans submitted by DB USA Corporation and DWS USA Corporation. DB USA Corporation and DWS USA Corporation will make their next capital plan submissions to the Federal Reserve Board in April 2021. On March 4, 2020, the Federal Reserve Board issued a rule to amend its CCAR process to combine the CCAR quantitative assessment and the buffer requirements in the Federal Reserve Board's capital rules to create an integrated capital buffer requirement. This final rule has eliminated the quantitative and qualitative 'pass/fail' assessments from CCAR and modifies the static capital conservation buffer to incorporate an institution-specific stress capital buffer (SCB), which is floored at 2.5%. The stress capital

buffer equals (i) a bank holding company's projected peak-to-trough decline in common equity tier 1 under the annual CCAR supervisory severely adverse stress testing scenario prior to any planned capital actions, plus (ii) one year of planned common stock dividends. The stress capital buffer will be reset each year. On August 10, 2020, the Federal Reserve Board announced an SCB for each CCAR firm based on 2020 supervisory stress testing results conducted as part of CCAR, which for DB USA Corporation was 7.8% and for DWS USA Corporation was 2.5%. The first SCB became effective October 1, 2020 and would generally remain in effect until September 30, 2021, at which point the size of the SCB for each bank will be recalibrated based on the results of the 2021 stress tests. On December 18, 2020, the Federal Reserve Board released certain information related to this second round of bank stress tests, and indicated that it is extending, through March 31, 2021, the time period for notifying CCAR firms whether the Federal Reserve Board will recalculate a firm’s SCB. The Federal Reserve Board also announced it is limiting CCAR firms’ distributions in the first quarter of 2021. Under these restrictions, IHCs, such as DB USA Corporation and DWS USA Corporation, may make certain capital distributions in the first quarter of 2021, provided that the distributions paid in the final three quarters of 2020 and the first quarter of 2021, in the aggregate, do not exceed the amount of net income the IHC has earned in the preceding four calendar quarters.

The U.S. federal bank regulators in 2013 issued final rules implementing elements of the Basel 3 capital adequacy framework that are applicable to U.S. banking organizations.

In September 2014, the Federal Reserve Board and other U.S. regulators approved a final rule implementing liquidity coverage ratio (“LCR”) requirements for large U.S. banking holding companies and certain of their subsidiary depositary institutions that are generally consistent with the Basel Committee’s revised Basel 3 liquidity standards. DB USA Corporation and DBTCA became subject to the full LCR requirements on April 1, 2017 and DWS USA Corporation became subject to LCR requirements on a phased-in basis following its formation in April 2018. The Tailoring Rules reduced the LCR requirements applicable to DB USA Corporation, DWS USA Corporation and DBTCA from 100 to 85 percent beginning on January 1, 2020.

On October 20, 2020, the Federal Reserve Board and other U.S. regulators finalized rules implementing the second element of the Basel 3 liquidity framework, the net stable funding ratio (“NSFR”). Under the Tailoring Rules, DB USA Corporation, DWS USA Corporation and DBTCA would be subject to an 85 percent NSFR so long as our IHCs’ combined weighted short term wholesale funding remains below U.S.$ 75 billion. Firms will be required to calculate the NSFR and meet the minimum required ratios by July 1, 2021 with public reporting beginning in 2023.

On December 15, 2016, the Federal Reserve Board adopted final rules that implement a U.S. version of the FSB’s TLAC standard in the United States. The final rules require, among other things, the U.S. IHCs of non-U.S. G-SIBs, including DB USA Corporation and DWS USA Corporation, to maintain a minimum TLAC amount, and separately require them to maintain a minimum amount of eligible long-term debt. Under the final rules, the required TLAC amount and the ability or inability of the IHC to count long-term debt issued externally towards the requirements varies depending on the G-SIB’s planned resolution strategy. DB USA Corporation and DWS USA Corporation are each considered a “non-resolution covered IHC”, which means that they are intended, under the planned resolution strategy of their G-SIB parent (Deutsche Bank AG), to continue to operate outside of resolution proceedings while the G-SIB parent is subject to a bail-in under the applicable European resolution regime. The final rules require a “non-resolution covered IHC” to maintain (i) internal minimum TLAC of at least 16 % of its risk-weighted assets, 6 % of its Basel 3 leverage ratio denominator and 8 % of its average total consolidated assets, and (ii) internal eligible long-term debt of at least 6 % of its risk-weighted assets, 2.5 % of its Basel 3 leverage ratio denominator and 3.5 % of its average total consolidated assets. Eligible long-term debt instruments for non-resolution covered IHCs are required to meet certain criteria, including issuance to a foreign company that controls directly or indirectly the covered IHC or a foreign affiliate (a non-U.S. entity that is wholly owned, directly or indirectly, by the non-U.S. G-SIB) and the inclusion of a contractual trigger allowing for, in limited circumstances, the immediate conversion or exchange of some or all of the instrument into Common Equity Tier 1 instruments upon an order by the Federal Reserve Board. Internal TLAC requirements may be satisfied with a combination of eligible long-term debt instruments and Tier 1 capital. Each of DB USA Corporation and DWS USA Corporation would also face restrictions on its discretionary bonus payments and capital distributions if it fails to maintain a TLAC buffer consisting of Common Equity Tier 1 capital above the minimum TLAC requirement equal to 2.5 % of risk-weighted assets. The final rules also prohibit or limit the ability of DB USA Corporation and DWS USA Corporation to engage in certain types of financial transactions. In October 2020, the Federal Reserve Board finalized a proposal to align the calculation of TLAC buffer for U.S. IHCs of non-U.S. G-SIBs with the calculation methodology used by U.S. G-SIBs which will take effect on April 1, 2021.

Furthermore, the Dodd-Frank Act provides for an extensive framework for the regulation of over-the-counter (“OTC”) derivatives, including mandatory clearing, exchange trading and transaction reporting of certain OTC derivatives, as well as rules regarding the registration of, and capital, margin and business conduct standards for, swap dealers, security-based swap dealers, major swap participants and major security-based swap participants. The Commodity Futures Trading Commission (“CFTC”) adopted final rules in 2016 that require additional interest rate swaps to be cleared. In November 2018 the CFTC proposed amendments to rules that would significantly expand the types of swaps that must be executed on an approved platform. More recently, in October 2020, also pursuant to the Dodd-Frank Act, the CFTC finalized regulations to impose position limits on certain commodities and economically equivalent swaps, futures and options. In July 2020, the CFTC announced a finalized rule on the cross-border application of U.S. swap rules, building on the CFTC’s cross-border guidance

from 2013 and related no-action relief letters. The Securities and Exchange Commission ("SEC") has also finalized rules regarding registration, capital, risk-mitigation techniques, reporting, business conduct standards, trade acknowledgement and verification requirements, and cross-border requirements for security-based swap dealers and major security-based swap participants. These rules will generally come into effect in November 2021, the latest compliance date for registration of security-based swap dealers and major security-based swap participants. Finally, the U.S. prudential regulators (the Federal Reserve Board, the FDIC, the Office of the Comptroller of the Currency, the Farm Credit Administration and the Federal Housing Finance Agency) have adopted final rules establishing margin requirements for non-cleared swaps and security-based swaps, the CFTC has adopted final rules establishing margin requirements for non-cleared swaps, and the SEC has adopted final rules establishing margin requirements for non-cleared security-based swaps. The final margin rules follow a phased implementation schedule, with certain initial margin and variation margin requirements in effect as of September 2016, additional variation margin requirements in effect as of March 2017, and additional initial margin requirements phased in from September 2017 through September 2022, with the relevant compliance dates depending in each case on the transactional volume of the parties and their affiliates. Compliance with SEC margin requirements will not be required prior to the compliance date for registration of security-based swap dealers in November 2021 at the latest.

The Dodd-Frank Act, as amended, also established a regulatory framework and enhanced regulation for several other areas, including but not limited to the following. The Dodd-Frank Act established a new regime for the orderly liquidation of failing financial companies through the appointment of the FDIC as receiver that is available only if the U.S. Secretary of the Treasury determines in consultation with the U.S. President that certain criteria are met, including that the failure of the company and its resolution under otherwise applicable federal or state law would have serious adverse effects on U.S. financial stability. In addition, the Dodd-Frank Act requires U.S. regulatory agencies to prescribe regulations with respect to incentive-based compensation at financial institutions in order to prevent inappropriate behavior that could lead to a material financial loss. Other provisions require issuers with securities listed on U.S. stock exchanges, which may include foreign private issuers such as Deutsche Bank, to establish a "clawback" policy to recoup previously awarded executive compensation in the event of an accounting restatement; in May 2016, the SEC re-proposed rules to implement this provision of the Dodd-Frank Act that would cover foreign private issuers, but such rules have not yet been adopted. The Dodd-Frank Act also grants the SEC discretionary rule-making authority to impose a new fiduciary standard on brokers, dealers and investment advisers; pursuant to this authority, on June 5, 2019, the SEC adopted rules and interpretations applicable to the relationships between such entities and their retail customers, and full compliance was required on June 30, 2020. The Dodd-Frank Act also expands the extraterritorial jurisdiction of U.S. courts over actions brought by the SEC or the United States with respect to violations of the antifraud provisions of the Securities Act of 1933, the Securities Exchange Act of 1934 and the Investment Advisers Act of 1940.

Implementation of the Dodd-Frank Act and related final regulations will result in additional costs and could limit or restrict the way we conduct our business.

Regulatory Authorities

We, as well as our wholly owned subsidiary DB USA Corporation are bank holding companies under the U.S. Bank Holding Company Act of 1956, as amended (the "Bank Holding Company Act"), by virtue of, among other things, our and its ownership of DBTCA. We and DB USA Corporation have elected to be financial holding companies pursuant to the provisions of the Gramm-Leach-Bliley Act (the "GLB Act") and, accordingly, may affiliate with securities firms and engage in other activities that are financial in nature or incidental or complementary to activities that are financial in nature. As a bank holding company and financial holding company, Deutsche Bank's U.S. operations are subject to regulation, supervision and examination by the Federal Reserve Board as our U.S. "umbrella supervisor".

DBTCA is a New York state-chartered bank whose deposits are insured by the FDIC to the extent permitted by law. DBTCA is subject to regulation, supervision and examination by the Federal Reserve Board and the New York State Department of Financial Services and to applicable FDIC rules. In addition, DBTCA is also subject to regulation by the Consumer Financial Protection Bureau in relation to retail products and services offered to its customers. Deutsche Bank Trust Company Delaware is a Delaware state-chartered bank which is subject to regulation, supervision and examination by the FDIC and the Office of the State Bank Commissioner of Delaware. Deutsche Bank AG's New York branch is supervised by the Federal Reserve Board and the New York State Department of Financial Services. Deutsche Bank's federally chartered non-depository trust companies are subject to regulation, supervision and examination by the Office of the Comptroller of the Currency. We and our subsidiaries are also subject to regulation, supervision and examination by state banking regulators of certain states in which we and they conduct banking operations.

Restrictions on Activities

As described below, federal and state banking laws and regulations restrict our ability to engage, directly or indirectly through subsidiaries, in activities in the United States. Among others, we are required to obtain the prior approval of the Federal Reserve Board before directly or indirectly acquiring the ownership or control of more than 5 % of any class of voting shares of U.S. banks, certain other depository institutions, and bank or depository institution holding companies. Under applicable U.S. federal banking law, our U.S. banking operations are also restricted from engaging in certain "tying" arrangements involving products and services.

Our two U.S. FDIC-insured bank subsidiaries, as well as our New York branch, are subject to requirements and restrictions under federal and state law, including requirements to maintain reserves against deposits, restrictions on the types and amounts of loans that may be made and the interest that may be charged thereon, and limitations on the types of investments that may be made and the types of services that may be offered.

In addition to the business of banking, and managing or controlling banks, so long as we are a financial holding company under U.S. law, we may also engage in nonbanking activities in the United States that are financial in nature, or incidental or complementary to such financial activity, including certain securities, merchant banking, insurance and other financial activities, subject to certain limitations on the conduct of such activities and to notice or prior regulatory approval in some cases. As a non-U.S. bank, Deutsche Bank AG and our non-U.S. subsidiaries are generally authorized under U.S. law and regulations to acquire a non-U.S. company engaged in nonfinancial activities as long as that company's U.S. operations do not exceed certain thresholds and certain other conditions are met.

In November 2018, the Federal Reserve Board adopted a revised supervisory rating system for bank holding companies with U.S.$ 100 billion or more in total consolidated assets and for IHCs with U.S.$ 50 billion or more in total consolidated assets, such as DB USA Corporation. The revised system will also generally apply to DWS USA Corporation. Under the revised system, covered companies receive separate ratings from the Federal Reserve Board for (i) capital planning and positions, (ii) liquidity risk management and positions and (iii) governance and controls. Each of these component areas will receive one of the following four ratings: (i) Broadly Meets Expectations, (ii) Conditionally Meets Expectations, (iii) Deficient-1, and (iv) Deficient-2. A covered company must maintain a rating of Broadly Meets Expectations or Conditionally Meets Expectations for each of the three components to be considered "well managed."

In August 2017, the Federal Reserve Board issued proposed guidance intended to enhance the effectiveness of boards of directors and refocus the Federal Reserve Board's supervisory expectations for boards of directors on their core responsibilities, and also to delineate between roles and responsibilities for boards of directors and for senior management. Although the proposed guidance does not directly apply to DB USA Corporation or DWS USA Corporation, the Federal Reserve Board indicated that it expects to issue a separate proposal on governance specific to IHCs.

Our status as a financial holding company, and our resulting ability to engage in a broader range of nonbanking activities, are dependent on Deutsche Bank AG, DB USA Corporation and our two insured U.S. depository institutions qualifying as "well capitalized" and "well managed" under applicable regulations and upon our insured U.S. depository institutions meeting certain requirements under the Community Reinvestment Act. The Federal Reserve Board's and other U.S. regulators' "well capitalized" standards are generally based on specified quantitative thresholds set at levels above the minimum requirements to be considered "adequately capitalized." For our two insured depository institution subsidiaries, DBTCA and Deutsche Bank Trust Company Delaware, the well-capitalized thresholds under the U.S. Basel 3 framework are a Common Equity Tier 1 capital ratio of 6.5 %, a Tier 1 capital ratio of 8 %, a Total capital ratio of 10 %, and a U.S. leverage ratio of 5 %. For bank holding companies, including Deutsche Bank AG and DB USA Corporation, the well-capitalized thresholds are a Tier 1 capital ratio of 6 % and a Total capital ratio of 10 %, both of which in the case of Deutsche Bank AG are calculated for Deutsche Bank AG under its home country standards.

State-chartered banks (such as DBTCA) and state-licensed branches and agencies of foreign banks (such as our New York branch) may not, with certain exceptions that require prior regulatory approval, engage as a principal in any type of activity not permissible for their federally chartered or licensed counterparts. In addition, DBTCA and Deutsche Bank Trust Company Delaware are subject to their respective state banking laws pertaining to legal lending limits and permissible investments and activities. Likewise, the United States federal banking laws also subject state branches and agencies to the single-borrower lending limits that apply to federal branches or agencies, which are substantially similar to the lending limits applicable to national banks. The single-borrower lending limits applicable to branches and agencies are calculated based on the dollar equivalent of the capital of the foreign bank (i.e., Deutsche Bank AG in the case of the New York branch).

The Federal Reserve Board may terminate the activities of any U.S. office of a foreign bank if it determines that the foreign bank is not subject to comprehensive supervision on a consolidated basis in its home country or that there is reasonable cause to believe that such foreign bank or its affiliate has violated the law or engaged in an unsafe or unsound banking practice in the United States or, for a foreign bank that presents a risk to the stability of the United States financial system, the home country of the foreign bank has not adopted, or made demonstrable progress toward adopting, an appropriate system of financial regulation to mitigate such risk.

Also, under the so-called swaps “push-out” provisions of the Dodd-Frank Act, certain structured finance derivatives activities of FDIC-insured banks and U.S. branch offices of foreign banks (including our New York branch) are restricted.

There are various qualitative and quantitative restrictions on the extent to which we and our nonbank subsidiaries can borrow or otherwise obtain credit from our U.S. banking subsidiaries or engage in certain other transactions involving those subsidiaries, including derivative transactions and securities borrowing or lending transactions. In general, these transactions must be on terms that would ordinarily be offered to unaffiliated entities, must be secured by designated amounts of specified collateral and are subject to volume limitations. These restrictions also apply to certain transactions of our New York branch with our U.S. broker-dealers and certain of our other U.S. affiliates.

A major focus of U.S. governmental policy relating to financial institutions is aimed at preventing money laundering and terrorist financing and compliance with economic sanctions in respect of designated countries or activities. Failure of an institution to have policies and procedures and controls in place to prevent, detect and report money laundering and terrorist financing could in some cases have serious legal, financial and reputational consequences for the institution.

New York Branch

The New York branch of Deutsche Bank AG is licensed by the Superintendent of the New York State Department of Financial Services to conduct a commercial banking business and is required to maintain and pledge eligible high-quality assets with banks in the State of New York (up to a maximum of U.S.$ 100 million of assets pledged so long as the foreign bank remains designated as “well-rated” by the Superintendent of Financial Services). Should we cease to be designated as “well-rated” by the Superintendent of Financial Services, we may need to maintain and pledge substantial additional amounts of eligible assets. The Superintendent of Financial Services may also impose asset maintenance requirements on foreign banks with branch offices in New York. In addition, the Federal Reserve Board is authorized to impose institution-specific asset maintenance requirements under certain conditions, pursuant to the Tailoring Rules. Currently, no such requirements have been imposed upon our New York branch.

The New York State Banking Law authorizes the Superintendent of Financial Services to take possession of the business and property of a New York branch of a foreign bank under certain circumstances, generally involving violation of law, conduct of business in an unsafe manner, impairment of capital, suspension of payment of obligations, or initiation of liquidation proceedings against the foreign bank at its domicile or elsewhere. In liquidating or dealing with a branch’s business after taking possession of a branch, only the claims of depositors and other creditors which arose out of transactions with a branch are to be accepted by the Superintendent of Financial Services for payment out of the business and property of the foreign bank in the State of New York or in the U.S. and reflected on the books of the New York branch, without prejudice to the rights of the holders of such claims to be satisfied out of other assets of the foreign bank. After such claims are paid, the Superintendent of Financial Services will turn over the remaining assets, if any, first to the liquidators of other offices of the foreign bank that are being liquidated in the United States and then, if any assets remain, to the foreign bank or its duly appointed liquidator or receiver.

The New York branch’s deposits and other note obligations are not permitted to be, and are not, insured by the FDIC. In general, under the International Banking Act, the New York branch is not permitted to accept or maintain domestic retail deposits or their note equivalent having a balance of less than U.S.$ 250,000. The New York branch may not engage as principal in any type of activity that is not permissible for a federally licensed branch of a foreign bank unless the Federal Reserve Board has determined that such activity is consistent with sound banking practice. The New York branch must also comply with the same single borrower (or issuer) lending and investment limits applicable to national banks. The lending limits applicable to the New York branch take into account credit exposures from derivative transactions, securities borrowing and lending transactions, and repurchase and reverse repurchase agreements. These limits are based on the foreign bank’s worldwide capital. In addition, regulations that the U.S. Financial Stability Oversight Council or other regulators may adopt could affect the nature of the activities which the New York branch may conduct, and may impose restrictions and limitations on the conduct of such activities.

Deutsche Bank Trust Company Americas

The Federal Deposit Insurance Corporation Improvement Act of 1991 (“FDICIA”) provides for extensive regulation of depository institutions (such as DBTCA and its direct and indirect parent companies), including requiring federal banking regulators to take “prompt corrective action” with respect to FDIC-insured banks that do not meet minimum capital requirements. As an insured bank’s capital level declines and the bank falls into lower categories (or if it is placed in a lower category by the discretionary action of its supervisor), greater limits are placed on its activities and federal banking regulators are authorized (and, in many cases, required) to take increasingly more stringent supervisory actions, which could ultimately include the appointment of a conservator or receiver for the bank (even if it is solvent). In addition, FDICIA generally prohibits an FDIC-insured bank from making any capital distribution (including payment of a dividend) or payment of a management fee to its holding company if the bank would thereafter be undercapitalized. If an insured bank becomes “undercapitalized”, it is required to submit to federal regulators a capital restoration plan guaranteed by the bank’s holding company. Since the enactment of FDICIA, both of our U.S. insured banks have maintained capital above the “well capitalized” standards, the highest capital category under applicable regulations.

DBTCA, like other FDIC-insured banks, is required to pay assessments to the FDIC for deposit insurance under the FDIC’s Deposit Insurance Fund (calculated using the FDIC’s risk-based assessment system). The minimum reserve ratio for the Deposit Insurance Fund was increased under the Dodd-Frank Act from 1.15 % to 1.35 %, which was reached as of September 30, 2018 following the imposition from July 1, 2016 through that date of a surcharge on the quarterly assessments of large insured depository institutions, including DBTCA. In addition, the FDIC has set the designated reserve ratio at 2 % as a long-term goal. The FDIC’s standard maximum deposit insurance amount per depositor at an insured depository institution is U.S.$ 250,000.

Other

In the United States, our U.S.-registered broker-dealers are regulated by the SEC. Broker-dealers are subject to regulations that cover all aspects of the securities business, including sales methods, trade practices among broker-dealers, use and safekeeping of customers’ funds and securities, capital structure, recordkeeping, the financing of customers’ purchases and the conduct of directors, officers and employees.

Our principal U.S. SEC-registered broker-dealer subsidiary, Deutsche Bank Securities Inc., is a member of the New York Stock Exchange (and other securities exchanges) and is regulated by the Financial Industry Regulatory Authority, Inc. (“FINRA”) and the individual state securities authorities in the states in which it operates. The U.S. government agencies and self-regulatory organizations, as well as state securities authorities in the United States having jurisdiction over our U.S. broker-dealer affiliates, are empowered to conduct administrative proceedings that can result in censure, fine, the issuance of cease-and-desist orders or the suspension or expulsion of a broker-dealer or its directors, officers or employees. Deutsche Bank Securities Inc. is also registered with and regulated by the SEC as an investment adviser, and by the CFTC and the National Futures Association as a futures commission merchant and commodity pool operator.

Under the Dodd-Frank Act, with certain exceptions, our entities that are swap dealers, security-based swap dealers, major swap participants or major security-based swap participants are registered or will be required to register with the SEC or CFTC, or both. Currently, Deutsche Bank AG is provisionally registered as a swap dealer. Deutsche Bank AG will be required in November 2021 to register with the SEC as a security based swap dealer. Registration, including provisional registration, as a swap dealer or security-based swap dealer subjects us to requirements as to capital, margin, business conduct and recordkeeping, among other requirements.

Organizational Structure

We operate our business along the structure of our four corporate divisions and the Capital Release Unit. Deutsche Bank AG is the direct or indirect holding company for our subsidiaries. The following table sets forth the significant subsidiaries we own, directly or indirectly, as of December 31, 2020. We used the three-part test set out in Section 1-02 (w) of Regulation S-X under the U.S. Securities Exchange Act of 1934 to determine significance. We do not have any other subsidiaries we believe are material based on other, less quantifiable, factors.

We own 100 % of the equity and voting interests in these subsidiaries except for DWS Group GmbH & Co. KGaA, of which we own 79.49 % of equity and voting interests. These subsidiaries are included in our consolidated financial statements and prepare standalone financial statements as of December 31, 2020. Their principal countries of operation are the same as their countries of incorporation.

Subsidiary	Place of Incorporation
DB USA Corporation[1]	Delaware, United States
Deutsche Bank Americas Holding Corporation[2]	Delaware, United States
DB U.S. Financial Markets Holding Corporation[3]	Delaware, United States
Deutsche Bank Securities Inc.[4]	Delaware, United States
Deutsche Bank Trust Corporation[5]	New York, United States
Deutsche Bank Trust Company Americas[6]	New York, United States
Deutsche Bank Luxembourg S.A.[7]	Luxembourg
DB Beteiligungs-Holding GmbH[8]	Frankfurt am Main, Germany
DWS Group GmbH & Co. KGaA[9]	Frankfurt am Main, Germany

[1] DB USA Corporation is the top-level holding company for our subsidiaries in the United States.
[2] Deutsche Bank Americas Holding Corporation is a second tier holding company for subsidiaries in the United States.
[3] DB U.S. Financial Markets Holding Corporation is a second tier holding company for subsidiaries in the United States.
[4] Deutsche Bank Securities Inc. is a U.S. company registered as a broker dealer and investment advisor with the Securities and Exchange Commission and as a futures commission merchant with the Commodities Futures Trading Commission.
[5] Deutsche Bank Trust Corporation is a bank holding company under Federal Reserve Board regulations.
[6] Deutsche Bank Trust Company Americas is a New York State-chartered bank and member of the Federal Reserve System. It originates loans and other forms of credit, accepts deposits, arranges financings and provides numerous other commercial banking and financial services.
[7] The company's primary business model comprises loan business with international clients (Corporate Bank & Investment Bank), where the bank acts globally as lending office and as risk transfer hub for the Strategic Corporate Lending of Deutsche Bank, as well as structured finance activities covering long-term infrastructure projects and high quality investment goods. Furthermore, the bank offers tailor-made solutions with a wide range of products and services to their ultra-high-net-worth (UHNW) clients.
[8] The company holds the majority stake in DWS Group GmbH & Co. KGaA.
[9] The company is a partnership limited by shares (Kommanditgesellschaft auf Aktien) with a German limited liability company (Gesellschaft mit beschränkter Haftung) as a general partner. The business purpose of the company is the holding of participations in as well as the management and support of a group of financial services providers. Following the public listing on March 23, 2018 on the Frankfurt Stock Exchange Deutsche Bank Group owns 79.49 % of equity and voting interests in the entity.

Property and Equipment

As of December 31, 2020, we operated in 59 countries out of 1,891 branches around the world, of which 68 % were in Germany. We lease a majority of our offices and branches under long-term agreements.

We continue to review our property requirements worldwide taking into account cost containment measures as well as growth initiatives in selected businesses. Please see Note 21 “Property and Equipment” to the consolidated financial statements for further information.

Information Required by Industry Guide 3

Please see pages S-1 through S-18 of the Supplemental Financial Information, which pages are incorporated by reference herein, for information required by SEC Industry Guide 3.

Item 4A: Unresolved Staff Comments

We have not received written comments from the Securities and Exchange Commission regarding our periodic reports under the Exchange Act, as of any day 180 days or more before the end of the fiscal year to which this annual report relates, which remain unresolved.

Item 5: Operating and Financial Review and Prospects

Overview

The following discussion and analysis should be read in conjunction with the consolidated financial statements and the related notes to them included in “Item 18: Financial Statements” of this document, on which we have based this discussion and analysis.

We have prepared our consolidated financial statements in accordance with IFRS as issued by the International Accounting Standards Board (“IASB”).

Significant Accounting Policies and Critical Accounting Estimates

Our significant accounting policies are essential to understanding our reported results of operations and financial condition. Certain of these accounting policies require critical accounting estimates that involve complex and subjective judgments and the use of assumptions, some of which may be for matters that are inherently uncertain and susceptible to change. Such critical accounting estimates could change from period to period and have a material impact on our financial condition, changes in financial condition or results of operations. Critical accounting estimates could also involve estimates where management could have reasonably used another estimate in the current accounting period. Actual results may differ from these estimates if conditions or underlying circumstances were to change. See Note 1 “Significant Accounting Policies and Critical Accounting Estimates” to the consolidated financial statements for a discussion on our significant accounting policies and critical accounting estimates.

We have identified the following significant accounting policies that involve critical accounting estimates:

- the impairment of associates
- the impairment of financial assets at fair value through other comprehensive income
- the determination of fair value
- the recognition of trade date profit
- the impairment of loans and provisions for off-balance sheet positions
- the impairment of goodwill and other intangibles
- the recognition and measurement of deferred tax assets
- the accounting for legal and regulatory contingencies and uncertain tax positions

Recently Adopted Accounting Pronouncements and New Accounting Pronouncements

See Note 2 “Recently Adopted and New Accounting Pronouncements” to the consolidated financial statements for a discussion on our recently adopted and new accounting pronouncements.

Operating Results

You should read the following discussion and analysis in conjunction with our consolidated financial statements.

Executive Summary

Please see “Management Report: Operating and Financial Review: Executive Summary” in the Annual Report 2020.

Trends and Uncertainties

For insight into the trends impacting our performance please see the “Management Report: Operating and Financial Review” section of the Annual Report 2020. Key risks and uncertainties for the Bank are discussed in “Item 3: Key Information – Risk Factors”.

The Bank’s future performance and the implementation of our strategic goals could be influenced by a number of uncertainties. Challenges may arise from sustained market volatility, increasing competitive pressures, potential deterioration of international trade relations, weakness of global, regional and national economic conditions, in particular in light of the COVID-19 pandemic, and political instability in key markets.

In addition, regulatory, tax and supervisory requirements continue to evolve. Although regulatory reforms have been selectively delayed in order to support banks’ efforts to more easily manage the impacts from COVID-19 and provide financing to the real economy, regulatory changes including to contributions to the SRB and to deposit guarantee schemes have and may continue to increase our costs, restrict our operations, or require structural change, which could put pressure on our capital position. In addition, we are involved in litigation, tax examinations, arbitration and regulatory proceedings and investigations. Such matters are subject to many uncertainties.

While we seek to achieve efficiencies in our operations, the realization of planned savings will be dependent on the successful and timely implementation of our updated strategy measures. The benefits, costs and timeframe of the implementation of our strategy could be adversely affected by unforeseen difficulties in the implementation process as well as factors beyond our control, such as negative market developments.

Risks to our Corporate Bank (CB) outlook include potential impacts on our business model from macroeconomic and global geopolitical uncertainty including uncertainty around duration of and recovery from the COVID-19 pandemic. In addition, uncertainty around central bank policies (e.g. the interest rate environment), ongoing regulatory developments (e.g. the finalization of the Basel III framework), event risks and levels of client activity may also have an adverse impact.

There are several risks to our Investment Bank (IB) outlook in 2021, with the biggest likely to be the uncertainty caused by the ongoing COVID-19 pandemic. The relative success of the various vaccination roll outs across the globe could well have positive or adverse impacts. Increasing levels of default risks, a continued Euro exchange rate appreciation and a soft U.S. dollar could also slow economic recovery. Central bank policies and ongoing regulatory developments also pose risks, while challenges such as event risks and levels of client activity may also have an adverse impact.

Risks to our Private Bank (PB) outlook include potential impacts on our business model from macroeconomic uncertainties, including uncertainty around duration of and recovery from COVID-19 pandemic, increasing pressure on interest rates in the Eurozone, slower economic growth in our major operating countries and lower client activity. Client activity could be impacted by market uncertainties including higher than expected volatility in equity and credit markets. The implementation of regulatory requirements including consumer protection measures and delays in the implementation of our strategic projects could also have a negative impact on our revenues and costs.

Risks to our Asset Management (AM) outlook include macro-economic and market conditions, growth prospects and continued economic impact from COVID-19 pandemic, which could adversely affect our business, results of operations or strategic plans. Elevated levels of economic and political uncertainty worldwide, and protectionist and anti-trade policies, could have unpredictable consequences in the economy, market volatility and investors' confidence, which may lead to declines in business and could affect our revenues and profits. In addition, the evolving regulatory framework could lead to unforeseen regulatory compliance costs and possible delays in the implementation of our efficiency measures, which could adversely impact our cost base.

Risks to our Capital Release Unit (CRU) outlook include that the speed and cost of our asset reductions could be affected by adverse developments or market uncertainties, including from COVID-19, higher than expected volatility in equity and credit markets and lack of counterparty appetite. Delays to the implementation of our expense management initiatives could have an adverse impact on our cost base. The transition of Prime Finance and Electronic Equities is dependent upon the readiness of the acquirer, which therefore represents a risk to our client/staff transition timeline. We continue to carefully monitor the legal and regulatory environment as it relates to the foreign currency denominated mortgage portfolio in Poland. Adverse judicial or regulatory developments could have a negative impact on the portfolio.

Performance in Corporate & Other will continue to be impacted by valuation and timing differences on positions that are economically hedged but do not meet the accounting requirements for hedge accounting. It will also include infrastructure expenses associated with shareholder activities as defined in the OECD Transfer Pricing Guidelines, which are not business specific. There will be certain transitional costs held centrally in Corporate & Other relating to changes in our internal funds transfer pricing ('FTP') framework, as well as costs linked to legacy activities relating to the merger of the DB Privat- und Firmenkundenbank AG into Deutsche Bank AG. We expect to retain around € 250 million in total related to these funding costs in Corporate & Other in 2021. Additionally, Corporate & Other will continue to be impacted by any difference between planned and actual allocations as Infrastructure expenses are allocated to the corporate divisions based on our expense plan, with the exception of technology development costs which will be charged based on actual expenditures. Corporate & Other also includes the reversal of non-controlling interests, mainly related to DWS, which are deducted from profit or loss before tax of the divisions.

The effective tax rate in future periods may be influenced by changes in tax laws or interpretative guidance, the occurrence of non-tax deductible litigation and other charges, changes in the measurement of deferred tax assets, or the resolution of tax examinations and investigations.

Results of Operations

Please see "Management Report: Operating and Financial Review: Results of Operations" in the Annual Report 2020 and our discussion of Non-GAAP financial measures in the "Supplementary Financial Information".

Financial Position

Please see "Management Report: Operating and Financial Review: Financial Position" in the Annual Report 2020.

Liquidity and Capital Resources

For a detailed discussion of our liquidity risk management, see "Management Report: Risk Report: Liquidity Risk" in the Annual Report 2020.

For a detailed discussion of our capital management, see "Management Report: Risk Report: Capital Management" in the Annual Report 2020.

Post-Employment Benefit Plans

Please see “Management Report: Employees: Post-Employment Benefit Plans” in the Annual Report 2020.

Off-Balance Sheet Arrangements

For information on the nature, purpose and extent of our off-balance sheet arrangements, please see Note 38 “Structured Entities” to the consolidated financial statements. For further information on off-balance sheet arrangements, including allowances for off-balance sheet positions, please refer to “Management Report: Risk Report: Asset Quality: Allowance for Credit Losses” in the Annual Report 2020 and Note 19 “Allowance for Credit Losses” to the consolidated financial statements. For information on irrevocable lending commitments and contingent liabilities with respect to third parties, please see Note 28 “Credit related Commitments” to the consolidated financial statements.

Tabular Disclosure of Contractual Obligations

Please see “Management Report: Operating and Financial Review: Tabular Disclosure of Contractual Obligations” in the Annual Report 2020.

Research and Development, Patents and Licenses

Not applicable.

Item 6: Directors, Senior Management and Employees

Directors and Senior Management

In accordance with the German Stock Corporation Act (Aktiengesetz), we have a Management Board (Vorstand) and a Supervisory Board (Aufsichtsrat). The German Stock Corporation Act prohibits simultaneous membership on both the Management Board and the Supervisory Board. The members of the Management Board are the executive officers of our company. The Management Board is responsible for managing our company and representing us in dealings with third parties. The Supervisory Board oversees the Management Board, appoints and removes its members and determines their remuneration and other compensation components, including pension benefits. According to German law, our Supervisory Board represents us in dealings with members of the Management Board. Therefore, no members of the Management Board may enter into any agreement with us without the prior consent of our Supervisory Board.

German law does not require the members of the Management Board nor the members of the Supervisory Board to own any of our shares to be qualified. In addition, German law has no requirement that members of the Management Board retire based on an age limit. However, age limits for members of the Management Board are defined contractually. Accordingly, a Management Board member should not be older at the end of his or her appointment period than the regular retirement age according to the rules of the statutory pension insurance scheme applicable in Germany for the long-term insured to claim an early retirement pension, which is currently 65 years of age. Age limits also exist for the members of the Supervisory Board according to the Terms of Reference (Geschäftsordnung) for our Supervisory Board. There is a maximum age limit of 70 years for members of the Supervisory Board. In exceptional cases, a Supervisory Board member can be elected or appointed for a period that extends no longer than until the end of the fourth Ordinary General Meeting that takes place after he/she has reached the age of 70.

The Supervisory Board may not make management decisions. However, German law and our Articles of Association (Satzung) require the Management Board to obtain the approval of the Supervisory Board for certain actions. The most important of these actions are:

- granting of general powers of attorney (Generalvollmachten). A general power of attorney authorizes its holder to represent the company in substantially all legal matters without limitation to the affairs of a specific office;
- acquisitions and disposals (including transactions carried out by a dependent company) of real estate in so far as the object involves more than € 500,000,000;
- granting of credits, including the acquisition of participations in other companies, where the German Banking Act (Kreditwesengesetz) requires approval by the Supervisory Board. In particular, pursuant to the German Banking Act, it requires of the Supervisory Board inter alia the approval if we grant a loan (to the extent legally permissible) to a member of the Management Board or the Supervisory Board or one of our employees who holds a procuration (Prokura) or general power of attorney; and
- acquisitions and disposals (including transactions carried out by a dependent company) of other participations, insofar as the object involves more than € 1 billion. The Supervisory Board must be informed without delay of any acquisition or disposal of such participations involving more than € 500,000,000.

The Management Board must submit regular reports or ad-hoc reports, as the case may be, to the Supervisory Board on our current operations and future business planning as well as on our risk situation. The Supervisory Board may also request special reports from the Management Board at any time.

With respect to voting powers, a member of the Supervisory Board or the Management Board may not vote on resolutions open to a vote at a board meeting if the proposed resolution concerns:

- a legal transaction between us and the respective member; or
- commencement, settlement or completion of legal proceedings between us and the respective member.

A member of the Supervisory Board or the Management Board may not directly or indirectly exercise voting rights on resolutions open to a vote at a shareholders' meeting (Hauptversammlung, which we refer to as the General Meeting) if the proposed resolution concerns:

- ratification of the member's acts;
- a discharge of liability of the member; or
- enforcement of a claim against the member by us.

Supervisory Board and Management Board

In carrying out their duties, members of both the Management Board and Supervisory Board must exercise the standard of care of a prudent and diligent business person, and they are liable to us for damages if they fail to do so.

The liability of the members of the Management Board or the Supervisory Board under the German Stock Corporation Act for breach of their fiduciary duties is to the company rather than individual shareholders. However, individual shareholders that hold at least 1 % or € 100,000 of the subscribed capital and are granted standing by the court may also invoke such liability to the company. The underlying concept is that all shareholders should benefit equally from amounts received under this liability by adding such amounts to the company's assets rather than disbursing them to plaintiff shareholders. We may waive the right to claim damages or settle these claims if at least three years have passed since the alleged breach and if the shareholders approve the waiver or settlement at the General Meeting with a simple majority of the votes cast, and provided that opposing shareholders do not hold, in the aggregate, one tenth or more of our share capital and do not have their opposition formally noted in the minutes maintained by a German notary.

Supervisory Board

The German Co-Determination Act of 1976 (Mitbestimmungsgesetz) requires our Supervisory Board to have twenty members, which is also reflected in the Articles of Association. In the event that the number of members of our Supervisory Board falls below twenty, upon application to a competent court, the court must appoint replacement members to serve on the board until official appointments are made by the general meeting of shareholders (with respect to shareholder representatives) or the employees and their representatives (with respect to employee representatives).

The German Co-Determination Act of 1976 (Mitbestimmungsgesetz) requires that the shareholders elect half of the members of the supervisory board of large German companies, such as Deutsche Bank, and that employees in Germany elect the other half. None of the current members of either of our boards were selected pursuant to any arrangement or understandings with major shareholders, customers or others.

Each member of the Supervisory Board generally serves for a fixed term of approximately five years. For the election of shareholder representatives, the General Meeting may establish that the terms of office of up to five members may begin or end on differing dates. Pursuant to German law, the term expires at the latest at the end of the Annual General Meeting that approves and ratifies such member's actions in the fourth fiscal year after the year in which the Supervisory Board member was elected. Supervisory Board members may also be re-elected. The shareholders may, by a majority of the votes cast in a General Meeting, remove any member of the Supervisory Board they have elected in a General Meeting. The employees may remove any member they have elected by a vote of three-quarters of the employee votes cast.

The members of the Supervisory Board elect the chairperson and the deputy chairperson of the Supervisory Board. Traditionally, the chairperson is a representative of the shareholders, and the deputy chairperson is a representative of the employees. At least half of the members of the Supervisory Board must be present at a meeting or must have submitted their vote in writing to constitute a quorum. In general, approval by a simple majority of the members of the Supervisory Board present and voting is required to pass a resolution. In the case of a deadlock, the resolution is put to a second vote. In the case of a second deadlock, the chairperson has the deciding vote.

For additional information on our Supervisory Board, including a table providing the names of and biographical information for the current members, see "Corporate Governance Statement: Management Board and Supervisory Board: Supervisory Board" in the Annual Report 2020.

Standing Committees

For information on the standing committees of our Supervisory Board, please see "Corporate Governance Statement: Management Board and Supervisory Board: Standing Committees" in the Annual Report 2020.

The business address of the members of the Supervisory Board is the same as our business address, Taunusanlage 12, 60325 Frankfurt am Main, Germany.

Management Board

Our Articles of Association require the Management Board to have at least three members. Our Management Board currently has ten members. The Supervisory Board has also appointed a Chairman (CEO) and one Deputy Chairman (President) of the Management Board.

The Supervisory Board appoints the members of the Management Board for a maximum term of five years and oversees them. They may be re-appointed or have their term extended for one or more terms of up to a maximum of five years each. The Supervisory Board may remove a member of the Management Board prior to the expiration of his or her term for good cause.

Pursuant to our Articles of Association, two members of the Management Board, or one member of the Management Board together with a holder of procuration, may represent us for legal purposes. A holder of procuration is an attorney-in-fact who holds a legally defined power under German law, which cannot be restricted with respect to third parties. However, pursuant to German law, the Management Board itself must resolve on certain matters as a whole and may not delegate the decision to one or more individual members. In particular, it may not delegate the determination of our business and risk strategies, and the coordinating or controlling responsibilities. The Management Board is required to ensure that shareholders are treated on an equal basis and receive equal information. The Management Board is also responsible for ensuring our proper business organization, which includes appropriate and effective risk management as well as compliance with legal requirements and internal guidelines, and for taking the necessary measures to ensure that adequate internal guidelines are developed and implemented.

Other selected responsibilities of the Management Board in accordance with the Terms of Reference for the Management Board and/or German law are:

- appointing key personnel at the level directly below the Management Board, in particular, appointing the Global Key Function Holders employed by us;
- making decisions regarding significant credit exposures or other risks which have not been delegated to individual risk management units;
- acquisition and disposal of equity investments, including capital measures in all cases in which (i) the law or our Articles of Association require approval by the Supervisory Board, or (ii) the equivalent of € 100 million is exceeded;
- acquisition and disposal of real estate – directly or by separate legal entities – in all cases in which: (i) the law or our Articles of Association require approval by the Supervisory Board, or (ii) the real estate's equivalent exceeds € 100 million;

- individual vendor or intra Group-outsourcings (or material changes to those outsourcings) in all cases in which the equivalent of € 100 million is exceeded on an annual basis or include the delegation of core organizational duties of the Management Board;
- calling shareholders' meetings;
- filing petitions to set aside shareholders' resolutions;
- preparing and executing shareholders' resolutions; and
- reporting to the Supervisory Board.

For additional information on our Management Board, including the names of and biographical information for the current members, see "Corporate Governance Statement: Management Board and Supervisory Board: Management Board" in the Annual Report 2020. The Terms of Reference of the Management Board are published on our website www.db.com/ir/en/documents.htm.

Board Practices of the Management Board

The Terms of Reference for the Management Board are in accordance with the Supervisory Board resolution of July 7, 2019. These Terms of Reference provide that the members of the Management Board have the collective responsibility for managing Deutsche Bank. Notwithstanding this principle, the allocation of functional responsibilities to the individual members of the Management Board and their substitution (in case of temporary absence) are set out in the Business Allocation Plan for the Management Board in accordance with the Supervisory Board resolution of December 17, 2020. The allocation of functional responsibilities does not exempt any member of the Management Board from collective responsibility for the management of the business. The members of the Management Board are responsible for the proper performance and/or delegation of their duties and the clear allocation of accountabilities and responsibilities within the area of own functional responsibility (so-called "*Ressort*") in accordance with the Business Allocation Plan.

Members of the Management Board are bound to the corporate interest of Deutsche Bank. No member of the Management Board may pursue personal interests in his/her decisions or use business opportunities intended for the company for himself/herself. To the extent permitted by German law, individual members of the Management Board may assume Deutsche Bank Group-external mandates, honorary offices or special assignments. In order to effectively prevent any conflicts of interest, the members of the Management Board may accept such positions only upon the approval of the other members of the Management Board and the Chairman's Committee of the Supervisory Board. Management Board members generally do not accept the role of chair of supervisory boards of Group-external companies.

Section 161 of the German Stock Corporation Act requires that the management board and supervisory board of any German stock exchange-listed company declare annually that the company complies with the recommendations of the German Corporate Governance Code or, if not, which recommendations the company does not comply with and why it does not comply with these recommendations (so-called "comply or explain"-principle). On some points, these recommendations go beyond the requirements of the German Stock Corporation Act. The Management Board and Supervisory Board issued a new Declaration of Conformity in accordance with Section 161 of the German Stock Corporation Act in October 2020, which is available on our internet website at www.db.com/ir/en/documents.htm under the heading "Declaration of Conformity pursuant to Section 161 German Stock Corporation Act (AktG), Oct 2020".

For information on the Management Board's terms of office, please see "Corporate Governance Statement: Management Board and Supervisory Board: Management Board" in the Annual Report 2020. For details of the Management Board's service contracts providing benefits upon termination, please see "Compensation Report: Pension Benefits" and "Compensation Report: Other Benefits upon Early Termination" in the Management Report of the Annual Report 2020.

The allocation of functional responsibilities to the individual members of the Management Board is described in the Business Allocation Plan for the Management Board, which sets the framework for the delegation of responsibilities to senior management below the Management Board. The Management Board endorses individual accountability of senior position holders as opposed to joint decision-taking in committees. At the same time, the Management Board recognizes the importance of having comprehensive and robust information across all businesses in order to take well informed decisions and established, in addition to Infrastructure Committees, Business Executive Committees and Regional Committees, the "Group Management Committee" which aims to improve the information flow across the Corporate Divisions and between the Corporate Divisions and the Management Board. The Group Management Committee as a senior platform, which is not required by the German Stock Corporation Act, is composed of all Management Board members as well as most senior business representatives to exchange information and discuss business, growth and profitability.

Compensation

For information on the compensation of the members of our Management Board, see “Management Report: Compensation Report: Management Board Compensation Report” in the Annual Report 2020.

For information on the compensation of the members of our Employees, see “Management Report: Compensation Report: Employee Compensation Report” in the Annual Report 2020.

For information on the compensation of the members of our Supervisory Board, see “Management Report: Compensation Report: Compensation System for Supervisory Board Members” in the Annual Report 2020.

Employees

Labor Relations

In Germany, labor unions and employers’ associations generally negotiate collective bargaining agreements on salaries and benefits for employees below the management level. Many companies in Germany, including ourselves and our material German subsidiaries, are members of employers’ associations and are bound by collective bargaining agreements.

Accordingly, our employers’ association, the “Arbeitgeberverband des privaten Bankgewerbes e.V.”, regularly renegotiates the collective bargaining agreements that cover many of our employees. The current agreement was reached in July 2019. As part of the final package, salaries were increased in two stages by a total of 4.0 %: 2.0 % from September 2019 and a further 2.0 % from November 2020. In addition to salary increases, the final result also includes mutual negotiation obligations regarding new collective bargaining agreements on qualification, working hours, training and prevention as well as the start of a further modernization of the collective bargaining agreements. The existing collective wage agreement lasts until end of June 2021, negotiations on a renewal are likely to begin in autumn 2021.

Our employers’ association negotiates with the following unions:

- ver.di (Vereinigte Dienstleistungsgewerkschaft);
- Deutscher Bankangestellten Verband (DBV – Gewerkschaft der Finanzdienstleister);
- Deutscher Handels- und Industrieangestellten Verband (DHV – Die Berufsgewerkschaft).

As German law prohibits us from asking our employees whether they are members of labor unions, there is no record of how many of the bank’s employees are union members.

On the basis of the agreement on cross-border information and consultation of Deutsche Bank employees in the EU concluded on September 10, 1996, all employees in the EU are represented by the European Works Council. This adds up to around two thirds of the Group's total workforce.

For further information on our employees, see “Management Report: Employees” in the Annual Report 2020.

Share Ownership

For the share ownership of the Management Board, see “Management Report: Compensation Report: Management Board Share Ownership” in the Annual Report 2020.

For the share ownership of the members of the Supervisory Board, see “Corporate Governance Statement/ Corporate Governance Report: Reporting and Transparency: Directors’ Share Ownership” in the Annual Report 2020.

For a description of our employee share programs, please see Note 33 “Employee Benefits” to the consolidated financial statements.

Item 7: Major Shareholders and Related Party Transactions

Major Shareholders

On December 31, 2020, our issued share capital amounted to € 5,290,939,215.36 divided into 2,066,773,131 no par value ordinary registered shares.

On December 31, 2020, we had 604,997 registered shareholders 946,450,284 of our shares were registered in the names of 594,082 shareholders resident in Germany, representing 45.79 % of our share capital. 363,580,475 of our shares were registered in the names of 573 shareholders resident in the United States, representing 17.59 % of our share capital.

The German Securities Trading Act (Wertpapierhandelsgesetz) requires investors in publicly-traded corporations whose investments reach certain thresholds to notify both the corporation and the BaFin of such change within four trading days. The minimum disclosure threshold is 3 % of the corporation's issued voting share capital.

BlackRock, Inc., Wilmington, DE, has notified us that as of December 31, 2020 it held 5.23 % of our shares. We have received no further notification by BlackRock, Inc., Wilmington, DE, through February 2, 2021.

The Capital Group Companies, Inc., Los Angeles, California, has notified us that as of March 31, 2020 it held 3.74 % of our shares. We have received no further notification by The Capital Group Companies, Inc., Los Angeles, California, through February 2, 2021.

Euro Pacific Growth Fund, Boston, Massachusetts (part of the Capital Group shareholding), has notified us that as of October 6, 2020 it held 3.61 % of our shares. We have received no further notification by Euro Pacific Growth Fund, Boston, Massachusetts (part of the Capital Group shareholding), through February 2, 2021.

Douglas L. Braunstein (Hudson Executive Capital LP), has notified us that as of November 20, 2020 he held 3.18 % of our shares. We have received no further notification by Douglas L. Braunstein (Hudson Executive Capital LP), through February 2, 2021.

Paramount Services Holdings Ltd., British Virgin Islands, has notified us that as of August 20, 2015 it held 3.05 % of our shares. We have received no further notification by Paramount Services Holdings Ltd., British Virgin Islands, through February 2, 2021.

Supreme Universal Holdings Ltd., Cayman Islands, has notified us that as of August 20, 2015 it held 3.05 % of our shares. We have received no further notification by Supreme Universal Holdings Ltd., Cayman Islands, through February 2, 2021.

Stephen A. Feinberg (Cerberus), has notified us that as of November 14, 2017 he held 3.001 % of our shares. We have received no further notification by Stephen A. Feinberg (Cerberus), through February 2, 2021.

We are neither directly nor indirectly owned nor controlled by any other corporation, by any government or by any other natural or legal person severally or jointly.

Pursuant to German law and our Articles of Association, to the extent that we may have major shareholders at any time, we may not give them different voting rights from any of our other shareholders.

We are aware of no arrangements which may at a subsequent date result in a change in control of our company.

Related Party Transactions

We have business relationships with a number of the companies in which we own significant equity interests. We also have business relationships with a number of companies where members of our Management Board also hold positions on boards of directors. Our business relationships with these companies cover many of the financial services we provide to our clients generally. For more detailed information, refer to Note 36 “Related Party Transactions” to the consolidated financial statements.

We conduct our business with these companies on terms equivalent to those that would prevail if we did not have equity holdings in them or management members in common, and we have conducted business with these companies on that basis in 2020 and prior years. None of these transactions is or was material to us.

Among our business with related party companies in 2020, there have been and currently are loans, guarantees and commitments, which totaled € 212 million (including loans amounting to € 169 million) as of December 31, 2020, compared to € 199 million (including loans amounting to € 187 million) as of December 31, 2019.

All these credit exposures

- were made in the ordinary course of business,
- were made on substantially the same terms, including interest rates and collateral, as those prevailing at the time for comparable transactions with other persons, and
- did not involve more than the normal risk of collectability or present other unfavorable features compared to loans to nonrelated parties at their initiation.

Related Party Impaired Loans

In addition to our other shareholdings, we hold acquired equity interests in some of our clients arising from our efforts to protect our then-outstanding lending exposures to them.

Impaired loans to related parties which may exhibit more than normal risk of collectability or present other unfavorable features compared to performing loans to related parties decreased by € 11 million to € 0 million, from December 31, 2019. The following table presents an overview of the impaired loans we hold of our related parties as of December 31, 2020.

in € m.	Amount outstanding as of December 31, 2020	Largest amount outstanding January 1, to December 31, 2020	Provision for loan losses in 2020[1]	Allowance for loan losses as of December 31, 2020[1]	Nature of the loan and transaction in which incurred
Customer A	0	11	0	0	Company was put into a court-supervised debt moratorium process in 2016. This triggered a debt to equity swap for 70 % of our loans and a € 25 million write-off in 2017. The company has informed lenders of inability to service the debt. No recoveries expected. DB sold exposure in April 2020 sales price € 0.3 million triggered additional € 9.8 million final write off.
Total	0	11	0	0	

[1] The allowance for loan losses is calculated by subtracting the net present value of future expected cash flows from the current outstanding. The year-end balance of the loan loss allowance is in most cases lower than the amount of provision for credit losses required for the recognition due to unwinding effects based upon passage of time which are recognized in interest income.
[2] Provision of € 0.5 million in 2020 driven by FX effect of € 0.5 million.

In the above table, customer A is a company in which we held a minority share and which is not consolidated at equity.

We have not disclosed the name of the related party customer described above because we have concluded that such disclosure would violate applicable privacy laws, such as customer confidentiality and data protection laws, and this customer has not waived application of these privacy laws. A legal opinion regarding the applicable privacy laws is filed as Exhibit 14.1 hereto.

Interests of Experts and Counsel

Not required because this document is filed as an annual report.

Item 8: Financial Information

Consolidated Statements and Other Financial Information

Consolidated Financial Statements

The Financial Statements of this Annual Report on Form 20-F consist of the Consolidated Financial Statements including Notes 1 to 43 thereto, which are set forth as Part 2 of the Annual Report 2020, and, as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates" thereto under "Basis of accounting – IFRS 7 disclosures", certain parts of the Management Report set forth as Part 1 of the Annual Report 2020.

The Consolidated Financial Statements as of and for the year ended December 31, 2020 have been audited by Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, as described in their "Report of Independent Registered Public Accounting Firm" included in the Annual Report 2020.

The Consolidated Financial Statements as of December 31, 2019 and for the years ended December 31, 2019 and 2018 have been audited by KPMG AG Wirtschaftsprüfungsgesellschaft, as described in their "Report of Independent Registered Public Accounting Firm" included in the Annual Report 2020.

Legal Proceedings

General. We and our subsidiaries operate in a legal and regulatory environment that exposes us to significant litigation risks. As a result, we are involved in litigation, arbitration and regulatory proceedings and investigations in Germany and in a number of jurisdictions outside Germany, including the United States. Please refer to Note 27 "Provisions" to the Consolidated Financial Statements for descriptions of certain significant legal proceedings. Additional legal proceedings that may have, or have had in the recent past, significant effects on our financial position or profitability are described below.

Australian Antitrust Proceedings. In June 2018, the Australian Commonwealth Director of Public Prosecutions (CDPP) filed charges against Deutsche Bank for alleged criminal cartel offenses following a referral by the Australian Competition and Consumer Commission. CDPP alleges that the cartel conduct took place in connection with an institutional share placement by Australia and New Zealand Banking Group Limited in August 2015, on which Deutsche Bank acted as joint underwriter with other banks. CDPP has also charged other banks and individuals, including two former Deutsche Bank employees. Deutsche Bank AG and its former employees have been charged with six offences of making, and giving effect to, anti-competitive arrangements. Deutsche Bank AG and its former employees are defending these charges. The criminal trial in this matter has been scheduled to commence on April 4, 2022 before the Federal Court of Australia.

Bank Bill Swap Rate Claims. On August 16, 2016, a putative class action was filed in the U.S. District Court for the Southern District of New York against Deutsche Bank and other defendants, bringing claims based on alleged collusion and manipulation in connection with the Australian Bank Bill Swap Rate ("BBSW") on behalf of persons and entities that engaged in U.S.-based transactions in BBSW-linked financial instruments from 2003 through the date on which the effects of the alleged unlawful conduct ceased. The complaint alleged that the defendants, among other things, engaged in money market transactions intended to influence the BBSW fixing, made false BBSW submissions, and used their control over BBSW rules to further the alleged misconduct. An amended complaint was filed on December 16, 2016. On November 26, 2018, the court partially granted defendants' motions to dismiss the amended complaint, dismissing all claims against Deutsche Bank. On April 3, 2019, the plaintiffs filed a second amended complaint, which the defendants moved to dismiss. On February 13, 2020, the court partially granted the motion to dismiss the second amended complaint, with certain claims against Deutsche Bank remaining. On June 16, 2020, Deutsche Bank served an answer denying all allegations of misconduct. Discovery is ongoing.

Central Bank of the Republic of China (Taiwan) Foreign Exchange Sanction. On February 5, 2021, the Central Bank of the Republic of China (Taiwan) (CBC) sanctioned Deutsche Bank AG, Taipei Branch (DBTP) and three other banks for engaging in foreign exchange forward transactions with international commodities trading clients in violation of the CBC's Regulations Governing Foreign Exchange Business of Banking Enterprises. While no fine was imposed on DBTP, CBC revoked DBTP's business permission to conduct Taiwan dollar deliverable forward and Taiwan dollar non-deliverable forward business and suspended DBTP's business permission for all foreign exchange related derivatives business for two years. The sanction does not affect performance and settlement of existing trades, nor does it affect DBTP's interbank swap funding transactions. The sanctions take effect from February 8, 2021. DBTP may apply to CBC to reinstate the affected business upon demonstrating concrete remediation measures.

Challenge of the General Meeting's Resolution Not to Pay a Dividend for the 2015 Fiscal Year. In May 2016, Deutsche Bank AG's General Meeting resolved that no dividend was to be paid to Deutsche Bank's shareholders for the 2015 fiscal year. Some shareholders filed a lawsuit with the Regional Court Frankfurt am Main (Landgericht), challenging (among other things) the resolution on the grounds that Deutsche Bank was required by law to pay a minimum dividend in an amount equal to 4 % of Deutsche Bank's share capital. In December 2016, the Regional Court ruled in favor of the plaintiffs. Deutsche Bank initially appealed the court's decision. However, Deutsche Bank withdrew its appeal prior to Deutsche Bank's 2017 General Meeting, as a result of which the challenged resolution became void. Deutsche Bank's General Meeting in May 2017 resolved the payment of a dividend of approximately € 400 million from Deutsche Bank's distributable profit for 2016 which amount contained a component reflecting the distributable profit carried forward from 2015 of approximately € 165 million. Such dividend was paid to the shareholders shortly after the annual General Meeting. The resolution was also challenged in court based on the allegation that the way the decision was taken was not correct. On January 18, 2018, the Regional Court Frankfurt am Main dismissed the shareholder actions as regards the dividend resolution taken in May 2017. The plaintiffs appealed to the Higher Regional Court Frankfurt am Main. On March 26, 2019, the Higher Regional Court Frankfurt am Main confirmed the decision of the Regional Court and dismissed the appeal. The plaintiffs filed an appeal against the denial of leave to appeal with the Federal Court of Justice. On May 5, 2020 the Federal Court of Justice dismissed the appeal of the plaintiff against the denial of leave to appeal. This decision is final.

FX derivatives products investigations and litigation. Deutsche Bank has received requests for information from certain regulators in connection with its internal investigation into the historical sales of certain FX derivatives products with a limited number of clients. Deutsche Bank is providing information to and otherwise cooperating with these regulators. Separately, a related claim has been filed in the High Courts of England and Wales by one of the Bank's clients but proceedings have yet to formally commence.

KOSPI Index Unwind Matters. Following the decline of the Korea Composite Stock Price Index 200 (the "KOSPI 200") in the closing auction on November 11, 2010 by approximately 2.7 %, the Korean Financial Supervisory Service ("FSS") commenced an investigation and expressed concerns that the fall in the KOSPI 200 was attributable to a sale by Deutsche Bank of a basket of stocks, worth approximately € 1.6 billion, that was held as part of an index arbitrage position on the KOSPI 200. On February 23, 2011, the Korean Financial Services Commission, which oversees the work of the FSS, reviewed the FSS' findings and recommendations and resolved to take the following actions: (i) to file a criminal complaint to the Korean Prosecutor's Office for alleged market manipulation against five employees of Deutsche Bank group and Deutsche Bank's subsidiary Deutsche Securities Korea Co. (DSK) for vicarious corporate criminal liability; and (ii) to impose a suspension of six months, commencing April 1, 2011 and ending September 30, 2011, of DSK's business for proprietary trading of cash equities and listed derivatives and DMA (direct market access) cash equities trading, and the requirement that DSK suspend the employment of one named employee for six months. On August 19, 2011, the Korean Prosecutor's Office announced its decision to indict DSK and four employees of Deutsche Bank group on charges of spot/futures-linked market manipulation. The criminal trial commenced in January 2012. On January 25, 2016, the Seoul Central District Court rendered guilty verdicts against a DSK trader and DSK. A criminal fine of KRW 1.5 billion (less than € 2.0 million) was imposed on DSK. The Court also ordered forfeiture of the profits generated on the underlying trading activity. The Group disgorged the profits on the underlying trading activity in 2011. The criminal trial verdicts against both the DSK trader and against DSK were overturned on appeal in a decision rendered by the Seoul High Court on December 12, 2018. The Korean Prosecutor's Office has appealed the Seoul High Court decision.

In addition, a number of civil actions have been filed in Korean courts against Deutsche Bank and DSK by certain parties who allege they incurred losses as a consequence of the fall in the KOSPI 200 on November 11, 2010. First instance court decisions were rendered against the Bank and DSK in some of these cases starting in the fourth quarter of 2015. The outstanding claims known to Deutsche Bank have an aggregate claim amount of less than € 60 million (at present exchange rates).

Monte Dei Paschi. In March 2013, Banca Monte dei Paschi di Siena ("MPS") initiated civil proceedings in Italy against Deutsche Bank alleging that Deutsche Bank assisted former MPS senior management in an accounting fraud on MPS, by undertaking repo transactions with MPS and "Santorini", a wholly owned special-purpose vehicle of MPS, which helped MPS defer losses on a previous transaction undertaken with Deutsche Bank. Subsequently, in July 2013, the Fondazione Monte dei Paschi di Siena ("FMPS"), MPS' largest shareholder, also commenced civil proceedings in Italy for damages based on substantially the same facts. In December 2013, Deutsche Bank reached an agreement with MPS to settle the civil proceedings and the transactions were unwound. The civil proceedings initiated by FMPS, in which damages of between € 220 million and € 381 million were claimed, were also settled in December 2018 upon payment by Deutsche Bank of € 17.5 million. FMPS's separate claim filed in July 2014 against FMPS's former administrators and a syndicate of 12 banks including Deutsche Bank S.p.A. for € 286 million continues to be pending before the first instance Florence courts.

A criminal investigation was launched by the Siena Public Prosecutor into the transactions entered into by MPS with Deutsche Bank and certain unrelated transactions entered into by MPS with other parties. Such investigation was moved in summer 2014 from Siena to the Milan Public Prosecutors as a result of a change in the alleged charges being investigated. On February 16, 2016, the Milan Public Prosecutors issued a request of committal to trial against Deutsche Bank and six current

and former employees. The committal process concluded with a hearing on October 1, 2016, during which the Milan court committed all defendants in the criminal proceedings to trial. Deutsche Bank's potential exposure was for administrative liability under Italian Legislative Decree n. 231/2001 and for civil vicarious liability as an employer of current and former Deutsche Bank employees who are being criminally prosecuted.

On November 8, 2019, the Milan court issued its verdicts, finding five former employees and one current employee of Deutsche Bank guilty and sentencing them to either 3 years and 6 months or 4 years and 8 months. Deutsche Bank was found liable under Italian Legislative Decree n. 231/2001 and the court ordered the seizure of alleged profits of € 64.9 million and a fine of € 3 million. The Court also found Deutsche Bank has civil vicarious liability for damages (to be quantified by the civil court) as an employer of the current and former employees who were convicted. The sentences and fines are not due until the conclusion of any appeal process. The final judgment was issued by the Court on May 13, 2020. Deutsche Bank and the six former or current employees filed an appeal to the Milan Court of Appeal on September 22, 2020.

On May 22, 2018, CONSOB, the authority responsible for regulating the Italian financial markets, issued fines of € 100,000 each against the six current and former employees of Deutsche Bank who are defendants in the criminal proceedings. The six individuals were also banned from performing management functions in Italy and for Italian based institutions for three to six months each. No separate fine or sanction was imposed on Deutsche Bank but it is jointly and severally liable for the six current/former Deutsche Bank employees' fines. On June 14, 2018, Deutsche Bank and the six individuals filed an appeal in the Milan Court of Appeal challenging CONSOB's decision and one of the individuals sought a stay of enforcement of the fine against that individual. On December 17, 2020, the Milan Court of Appeal allowed the appeals filed by Deutsche Bank and the six current and former employees and annulled the resolution sanctioning them. CONSOB may appeal the decision.

Pension Plan Assets. The Group sponsors a number of post-employment benefit plans on behalf of its employees. In Germany, the pension assets that fund the obligations under these pension plans are held by Benefit Trust GmbH. The German tax authorities are challenging the tax treatment of certain income received by Benefit Trust GmbH in the years 2010 to 2013 with respect to its pension plan assets. For the year 2010 Benefit Trust GmbH paid the amount of tax and interest assessed of € 160 million to the tax authorities and is seeking a refund of the amounts paid in litigation. For 2011 to 2013 the matter is stayed pending the outcome of the 2010 tax litigation. The amount of tax and interest under dispute for years 2011 to 2013, which also has been paid to the tax authorities, amounts to € 456 million. In March 2017, the lower fiscal court ruled in favor of Benefit Trust GmbH and in September 2017 the tax authorities appealed the decision to the German supreme fiscal court (*Bundesfinanzhof*). A court hearing is scheduled for March 15, 2021.

Precious Metals Investigations and Litigations. Deutsche Bank received inquiries from certain regulatory and law enforcement authorities, including requests for information and documents, pertaining to investigations of precious metals trading and related conduct. Deutsche Bank has cooperated with these investigations. On January 29, 2018, Deutsche Bank entered into a U.S.$ 30 million settlement with the U.S. Commodity Futures Trading Commission ("CFTC") concerning spoofing, and manipulation and attempted manipulation in precious metals futures and of stop loss orders. On January 8, 2021, Deutsche Bank entered into a deferred prosecution agreement with the U.S. Department of Justice concerning spoofing and the Foreign Corrupt Practices Act conduct as mentioned in the Note 27 "Provisions" to the Consolidated Financial Statements. As part of its obligations in the deferred prosecution agreement, Deutsche Bank agreed to pay approximately U.S.$ 8 million, of which approximately U.S.$ 6 million would be credited by virtue of the aforementioned CFTC resolution.

Deutsche Bank is a defendant in two consolidated class action lawsuits pending in the U.S. District Court for the Southern District of New York. The suits allege violations of U.S. antitrust law, the U.S. Commodity Exchange Act and related state law arising out of the alleged manipulation of gold and silver prices through participation in the Gold and Silver Fixes. Deutsche Bank has reached agreements to settle the Gold action for U.S.$ 60 million and the Silver action for U.S.$ 38 million, which remain subject to final court approval.

Pre-Release ADRs. Deutsche Bank and certain affiliates have received inquiries from certain European regulatory, tax and law enforcement authorities, including requests for documents and information, with respect to American Depositary Receipts (ADRs), including ADRs that have been issued on a "pre-release" basis ("pre-release ADRs"). Deutsche Bank is cooperating with these inquiries.

Transfer of Lease Assets. In December 2017, a claim for damages was filed with the Regional Court Frankfurt am Main against Deutsche Bank AG in the amount of approximately € 155 million (excluding interest). In 2006, Deutsche Bank AG (indirectly, through a special-purpose vehicle) entered into transactions according to which the plaintiff transferred certain lease assets to the special-purpose vehicle against, among others things, receipt of a preference dividend. The plaintiff alleges that Deutsche Bank had entered into an agreement with it under which Deutsche Bank provided flawed contractual documentation as a result of which the German tax authorities have disallowed the plaintiff's expected tax savings. The Regional Court Frankfurt am Main fully dismissed the claim on July 26, 2019. The plaintiff has appealed this decision to the Higher Regional Court Frankfurt am Main. A date for an oral hearing has not yet been set.

Dividend Policy

For 2020, the Management Board will propose to the General Meeting that we do not pay a dividend. For 2019, we also did not pay a dividend. For 2018, we paid a dividend of € 0.11 per share. Historically, we have paid dividends at higher levels, and we aim to free up capital for distribution from 2022 with the goal of returning € 5 billion of capital to shareholders over time. However, we cannot assure investors that we will pay dividends as we did in previous years, nor at any other level, or at all, in any future period. If the company is not profitable, we may not pay dividends at all.

Furthermore, if Deutsche Bank AG fails to meet the regulatory capital adequacy requirements under CRR/CRD (including individually imposed capital requirements (so-called "Pillar 2" requirements) and the combined buffer requirement), it may be prohibited from making, and the ECB or the BaFin may suspend or limit, the payment of dividends. In addition, the ECB expects banks to meet "Pillar 2" guidance. If Deutsche Bank AG operates or expects to operate below "Pillar 2" guidance, the ECB will review the reasons why the Bank's capital level has fallen or is expected to fall and may take appropriate and proportionate measures in connection with such shortfall. Any such measures might have an impact on Deutsche Bank AG's willingness or ability to pay dividends. For further information on regulatory capital adequacy requirements and the powers of Deutsche Bank AG's regulators to suspend dividend payments, see "Item 4: Information on the Company – Regulation and Supervision – Capital Adequacy Requirements" and "– Investigative and Enforcement Powers."

Under German law, Deutsche Bank AG's dividends are based on the unconsolidated results of Deutsche Bank AG as prepared in accordance with German accounting rules. Deutsche Bank AG's Management Board, which prepares the annual financial statements of Deutsche Bank AG on an unconsolidated basis, and its Supervisory Board, which reviews them, first allocate part of Deutsche Bank AG's annual surplus (if any) to Deutsche Bank AG's statutory reserves and to any losses carried forward, as it is legally required to do. They then allocate the remainder between other revenue reserves (or retained earnings) and balance sheet profit. They may allocate up to one-half of this remainder to other revenue reserves, and must allocate at least one-half to balance sheet profit. A profit distribution from balance sheet profit is only permitted to the extent that the balance sheet profit plus distributable earnings exceeds potential dividend blocking items, which consist primarily of deferred tax assets, self-developed software and unrealized gains on plan assets, all net of respective deferred tax liabilities.

Deutsche Bank AG then distributes up to the full amount of the balance sheet profit not subject to dividend blocking of Deutsche Bank AG if the annual General Meeting so resolves. The annual General Meeting may resolve a non-cash distribution instead of, or in addition to, a cash dividend. However, Deutsche Bank AG is not legally required to distribute its balance sheet profit to its shareholders to the extent that it has issued participatory rights (*Genussrechte*) or granted a silent participation (stille Beteiligung) that accord their holders the right to a portion of Deutsche Bank AG's distributable profit.

Deutsche Bank AG declares dividends by resolution of the annual General Meeting and pays them (if any) once a year. Dividends approved at a General Meeting are payable on the third business day after that meeting, unless a later date has been determined at that meeting or by the Articles of Association. In accordance with the German Stock Corporation Act, the record date for determining which holders of Deutsche Bank AG's ordinary shares are entitled to the payment of dividends, if any, or other distributions whether cash, stock or property, is the date of the General Meeting at which such dividends or other distributions are declared.

Significant Changes

Except as otherwise stated in this document, there have been no significant changes subsequent to December 31, 2020.

Item 9: The Offer and Listing

Offer and Listing Details and Markets

Our share capital consists of ordinary shares issued in registered form without par value. Under German law, shares without par value are deemed to have a "nominal" value equal to the total amount of share capital divided by the number of shares. Our shares have a nominal value in this sense of € 2.56 per share.

The principal trading market for our shares is the Frankfurt Stock Exchange, where it trades under the symbol DBK. Our shares are also traded on the six other German stock exchanges (Berlin, Duesseldorf, Hamburg, Hanover, Munich and Stuttgart, where on each exchange it also trades under the symbol DBK), on the Eurex and the New York Stock Exchange, where it trades under the symbol DB.

We maintain a share register in Frankfurt am Main and, for the purposes of trading our shares on the New York Stock Exchange, a share register in New York.

All shares on German stock exchanges trade in euros, and all shares on the New York Stock Exchange trade in U.S. dollars.

You should not rely on our past share performance as a guide to our future share performance.

Plan of Distribution

Not required because this document is filed as an annual report.

Selling Shareholders

Not required because this document is filed as an annual report.

Dilution

Not required because this document is filed as an annual report.

Expenses of the Issue

Not required because this document is filed as an annual report.

Item 10: Additional Information

Share Capital

Not required because this document is filed as an annual report.

Memorandum and Articles of Association

The following is a summary of certain information relating to certain provisions of our Articles of Association, our share capital and German law. This summary is not complete and is qualified by reference to our Articles of Association and German law in effect at the date of this filing. Copies of our Articles of Association are publicly available at the Commercial Register (*Handelsregister*) in Frankfurt am Main, and an English translation is filed as Exhibit 1.1 to this Annual Report.

Our Business Objectives

Section 2 of our Articles of Association sets out the objectives of our business:

- to transact all aspects of banking business;
- to provide financial and other services; and
- to promote international economic relations.

Our Articles of Association permit us to pursue these objectives directly or through subsidiaries and affiliated companies.

Our Articles of Association also provide that, to the extent permitted by law, we may transact all business and take all steps that appear likely to promote our business objectives. In particular, we may:

- acquire and dispose of real estate;
- establish branches in Germany and abroad;
- acquire, administer and dispose of participations in other enterprises; and
- conclude intercompany agreements (*Unternehmensverträge*).

Supervisory Board and Management Board

For more information on our Supervisory Board and Management Board, see “Item 6: Directors, Senior Management and Employees.”

Voting Rights and Shareholders' Meetings

Each of our shares entitles its registered holder to one vote at our General Meeting. Our Annual General Meeting takes place within the first eight months of our fiscal year. Pursuant to our Articles of Association, we may hold the meeting in Frankfurt am Main, Düsseldorf or any other German city with over 250,000 inhabitants. Unless a shorter period is permitted by law, we must give the notice convening the General Meeting at least 30 days before the last day on which shareholders can register their attendance of the General Meeting (which is the fifth day immediately preceding that General Meeting). Shorter periods apply if the General Meeting is called to adopt a resolution on a capital increase in the context of early intervention measures pursuant to the Act on the Recovery and Resolution of Institutions and Financial Groups (Gesetz zur Sanierung und Abwicklung von Instituten und Finanzgruppen). We are required to include details regarding the shareholder attendance registration process and the issuance of admission cards in our invitation to the General Meeting.

The Management Board or the Supervisory Board may also call an extraordinary General Meeting. Shareholders holding in the aggregate at least 5 % of the nominal value of our share capital may also request that such a meeting be called.

According to our Articles of Association our shares are issued in the form of registered shares. For purposes of registration in the share register, all shareholders are required to notify us of the number of shares they hold and, in the case of natural persons, of their name, address and date of birth and, in the case of legal persons, of their registered name, business address and registered domicile. Both being registered in our share register and the timely registration for attendance of the General Meeting constitute prerequisite conditions for any shareholder's attendance and exercise of voting rights at the General Meeting. Shareholders may register their attendance of a General Meeting with the Management Board (or as otherwise designated in the invitation) by written notice or electronically, no later than the fifth day immediately preceding the date of that General Meeting. Any shareholders who have failed to comply with certain notification requirements summarized under "Notification Requirements" below are precluded from exercising any rights attached to their shares, including voting rights.

Under German law, upon our request a registered shareholder must inform us whether that shareholder owns the shares registered in its name or whether that shareholder holds the shares for any other person as a nominee shareholder. Both the nominee shareholder and the person for whom the shares are held have an obligation to provide the same personal data as required for registration in the share register with respect to the person for whom the shares are held. For so long as a registered shareholder does not provide the requested information as to its holding of the shares or, in the case of nominee shareholding, the required information about the person for whom the shares are held has not been provided, the shares held by the registered shareholder carry no voting rights.

Shareholders may appoint proxies to represent them at General Meetings. As a matter of German law, a proxy relating to voting rights granted by shares may be revoked at any time.

As a foreign private issuer, we are not required to file a proxy statement under U.S. securities law. The proxy voting process for our shareholders in the United States is substantially similar to the process for publicly held companies incorporated in the United States.

The Annual General Meeting normally adopts resolutions on the following matters:

- appropriation of distributable balance sheet profits (*Bilanzgewinn*) from the preceding fiscal year;
- formal ratification of the acts (*Entlastung*) of the members of the Management Board and the members of the Supervisory Board in the preceding fiscal year; and
- appointment of independent auditors for the current fiscal year.

A simple majority of votes cast is generally sufficient to approve a measure, except in cases where a greater majority is otherwise required by our Articles of Association or by law. Under the German Stock Corporation Act and the German Transformation Act (*Umwandlungsgesetz*), certain resolutions of fundamental importance require a majority of at least 75 % of the share capital represented at the General Meeting adopting the resolution, in addition to a majority of the votes cast. Such resolutions include the following matters, among others:

- amendments to our Articles of Association changing our business objectives;
- capital increases that exclude subscription rights;
- capital reductions;
- creation of authorized or conditional capital;
- our dissolution;
- "transformations" under the German Transformation Act such as mergers, spin-offs and changes in our legal form;
- transfer of all our assets;
- integration of another company; and
- intercompany agreements (in particular, domination and profit-transfer agreements).

Under certain circumstances, such as when a resolution violates our Articles of Association or the German Stock Corporation Act, shareholders may file a shareholder action with the appropriate Regional Court (*Landgericht*) in Germany to set aside resolutions adopted at the General Meeting.

Under German law, the rights of shareholders as a group can be changed by amendment of the company's articles of association. Any amendment of our Articles of Association requires a resolution of the General Meeting. The authority to amend our Articles of Association, insofar as such amendments merely relate to the wording, such as changes of the share capital as a result of the issuance of shares from authorized capital, has been assigned to our Supervisory Board by our Articles of Association. Pursuant to our Articles of Association, the resolutions of the General Meeting are taken by a simple majority of votes and, insofar as a majority of capital stock is required, by a simple majority of capital stock, except where law or our Articles of Association determine otherwise. The rights of individual shareholders can only be changed with their consent. Amendments to the Articles of Association become effective upon their registration in the Commercial Register.

Share Register

We maintain a share register with Link Market Services GmbH and our New York transfer agent, pursuant to an agency agreement between us and Link Market Services GmbH and a sub-agency agreement between Link Market Services GmbH and the New York transfer agent.

Our share register will be open for inspection by shareholders during normal business hours at our offices at Taunusanlage 12, 60325 Frankfurt am Main, Germany. The share register generally contains each shareholder's surname, first name, date of birth, address and the number or the quantity of our shares held. Shareholders may prevent their personal information from appearing in the share register by holding their securities through a bank or custodian. Although the shareholder would remain the beneficial owner of the securities, only the bank's or custodian's name would appear in the share register.

Dividend Rights

For a summary of our dividend policy and legal basis for dividends under German law, see "Item 8: Financial Information – Dividend Policy."

Increases in Share Capital

German law and our Articles of Association permit us to increase our share capital in any of three ways:

- Resolution by our General Meeting authorizing the issuance of new shares.
- Resolution by our General Meeting authorizing the Management Board, subject to the approval of the Supervisory Board, to issue new shares up to a specified amount (no more than 50 % of existing share capital) within a specified period, which may not exceed five years. This is referred to as authorized capital (*genehmigtes Kapital*).
- Resolution by our General Meeting authorizing the issuance of new shares up to a specified amount (no more than 50 % of existing share capital) for specific purposes, such as for employee stock options, for use as consideration in a merger or to issue to holders of convertible bonds or other convertible securities. This is referred to as conditional capital (*bedingtes Kapital*).

The issuance of new ordinary shares by resolution of the General Meeting requires the simple majority of the votes cast and of the share capital represented at the General Meeting. Resolutions of the General Meeting concerning the creation of authorized or conditional capital require the simple majority of the votes cast and a majority of at least 75 % of the share capital represented at the General Meeting.

Liquidation Rights

The German Stock Corporation Act requires that if we are liquidated, any liquidation proceeds remaining after the payment of all our liabilities will be distributed to our shareholders in proportion to their shareholdings.

Preemptive Rights

In principle, holders of our shares have preemptive rights allowing them to subscribe any shares, bonds convertible into, or attached warrants to subscribe for, our shares or participatory certificates we issue. Such preemptive rights exist in proportion to the number of shares currently held by the shareholder. Preemptive rights of shareholders may be excluded with respect to any capital increase, however, as part of the resolution by the General Meeting on such capital increase. Such a resolution by the General Meeting on a capital increase that excludes the shareholders' preemptive rights with respect thereto requires both a majority of the votes cast and a majority of at least 75 % of the share capital represented at the General Meeting. A resolution to exclude preemptive rights requires that the proposed exclusion is expressly disclosed in the agenda to the General Meeting and that the Management Board presents the reasons for the exclusion to the shareholders in a written report. Under the German Stock Corporation Act, preemptive rights may in particular be excluded with respect to capital increases not exceeding 10 % of the existing share capital with an issue price payable in cash not significantly below the stock exchange price at the time of issuance. In addition, shareholders may, in a resolution by the General Meeting on authorized capital, authorize the Management Board to exclude the preemptive rights with respect to newly issued shares from authorized capital in specific circumstances set forth in the resolution.

Shareholders are generally permitted to transfer their preemptive rights. Preemptive rights may be traded on one or more German stock exchanges for a limited number of days prior to the final day the preemptive rights can be exercised.

Notices and Reports

We publish notices pertaining to our shares and the General Meeting in the electronic German Federal Gazette (Bundesanzeiger) and, when so required, in at least one national newspaper designated for exchange notices.

We send our New York transfer agent, through publication or otherwise, a copy of each of our notices pertaining to any General Meeting, any adjourned General Meeting or our actions with respect to any cash or other distributions or the offering of any rights. We provide such notices in the form given or to be given to our shareholders. Our New York transfer agent is requested to arrange for the mailing of such notices to all shareholders registered in the New York registry.

We will make all notices we send to shareholders available at our principal office for inspection by shareholders. Link Market Services GmbH and our New York transfer agent will send copies of all notices pertaining to General Meetings to all registered shareholders. Link Market Services GmbH and our New York transfer agent will send copies of other notices or information material, such as quarterly reports or shareholder letters, to those registered shareholders who have requested to receive such notices or information material.

Charges of Transfer Agents

We pay Link Market Services GmbH and our New York transfer agent customary fees for their services as transfer agents and registrars. Our shareholders will not be required to pay Link Market Services GmbH or our New York transfer agent any fees or charges in connection with their transfers of shares in the share register. Our shareholders will also not be required to pay any fees in connection with the conversion of dividends from euros to U.S. dollars.

Liability of Transfer Agents

Neither Link Market Services GmbH nor our New York transfer agent will be liable to shareholders if prevented or delayed by law, or any circumstances beyond their control, from performing their obligations as transfer agents and registrars.

Notification Requirements

Disclosure of Interests in a Listed Stock Corporation

Disclosure Obligations under the German Securities Trading Act

Deutsche Bank AG, as a listed company, and its shareholders are subject to the shareholding disclosure obligations under the German Securities Trading Act (*Wertpapierhandelsgesetz*). Pursuant to the German Securities Trading Act, any shareholder whose voting interest in a listed company like Deutsche Bank AG, through acquisition, sale or by other means, reaches, exceeds or falls below a 3 %, 5 %, 10 %, 15 %, 20 %, 25 %, 30 %, 50 % or 75 % threshold must notify us and the BaFin of its current aggregate voting interest in writing and without undue delay, but at the latest within four trading days. In connection with this requirement, the German Securities Trading Act contains various provisions regarding the attribution of voting rights to the person who actually controls the voting rights attached to the shares.

Furthermore, the voting rights attached to a third party's shares are attributed to a shareholder if the shareholder coordinates its conduct concerning the listed company with the third party (so-called "acting in concert") either through an agreement or other means. Acting in concert is deemed to exist if the parties coordinate their voting at the listed company's general meeting or, outside the general meeting, coordinate their actions with the goal of significantly and permanently modifying the listed company's corporate strategy. Each party's voting rights are attributed to each of the other parties acting in concert.

Shareholders failing to comply with their notification obligations are prevented from exercising any rights attached to their shares (including voting rights and the right to receive dividends) until they have complied with the notification requirements. If the failure to comply with the notification obligations specifically relates to the size of the voting interest in the Deutsche Bank AG and is the result of willful or grossly negligent conduct, the suspension of shareholder rights is – subject to certain exceptions in case of an incorrect notification deviating no more than 10 % from the actual percentage of voting rights – extended by a six-month period commencing upon the submission of the required notification.

Except for the 3 % threshold, similar notification obligations exist for reaching, exceeding or falling below the thresholds described above when a person holds, directly or indirectly, certain instruments other than shares. This applies to instruments which grant upon maturity an unconditional right to acquire existing voting shares of Deutsche Bank AG, a discretionary right to acquire such shares, as well as to instruments that refer to such shares and have an economic effect similar to that of the aforementioned instruments, irrespective of whether such instruments are physically or cash-settled. These instruments include, for example, transferable securities, options, futures contracts and swaps. Voting rights to be attributed to a person based on any such instrument will generally be aggregated with the person's other voting rights deriving from shares or other instruments.

Notice must be given without undue delay, but within four trading days at the latest. The notice period commences as soon as the person obliged to notify knows, or, under the circumstances should know, that his or her voting rights reach, exceed or fall below any of the abovementioned relevant thresholds, but in any event no later than two trading days after reaching, exceeding or falling below the threshold. Only in case that the voting rights reach, exceed or fall below any of the thresholds as a result of an event affecting all voting rights, the notice period might commence at a later stage. Deutsche Bank AG must publish the foregoing notifications without undue delay, but no later than within three trading days after their receipt, and report such publication to the BaFin. Furthermore, the Deutsche Bank AG must publish a notification in case of any increase or decrease of the total number of voting rights without undue delay, but within two trading days at the latest, and such notification must be reported to the BaFin and forwarded to the German Company Register (*Unternehmensregister*). An exception applies where the increase of the total number of voting rights is due to the issue of new shares from conditional capital. In this case, Deutsche Bank AG must publish the increase at the end of the month in which it occurred. However, such increase must also be notified without undue delay, but within two trading days at the latest, where any other increase or decrease of the total number of voting rights triggers the aforementioned notification requirement.

Non-compliance with the disclosure requirements regarding shareholdings and holdings of other instruments may result in a significant fine imposed by the BaFin. In addition, the BaFin publishes, on its website, sanctions imposed and measures taken indicating the person or entity responsible and the nature of the breach (so-called "naming and shaming").

Shareholders whose voting rights reach or exceed thresholds of 10 % of the voting rights in a listed company, or higher thresholds, are obliged to inform the company within 20 trading days of the purpose of their investment and the origin of the funds used for such investment, unless the articles of association of the listed company provide otherwise. Our Articles of Association do not contain such a provision.

Disclosure Obligations under the German Securities Acquisition and Takeover Act

Pursuant to the German Securities Acquisition and Takeover Act (*Wertpapiererwerbs- und Übernahmegesetz*), any person whose voting interest reaches or exceeds 30 % of the voting shares of a listed stock corporation must, within seven calendar days, publish this fact (including the percentage of its voting rights) on the Internet and by means of an electronically operated financial information dissemination system. In addition, the person must subsequently make a mandatory public tender offer within four weeks to all shareholders of the listed company unless an exemption has been granted. The German Securities Acquisition and Takeover Act contains a number of provisions intended to ensure that shareholdings are attributed to those persons who actually control the voting rights attached to the shares. The provisions regarding coordinated conduct as part of the German Securities Acquisition and Takeover Act (so-called "acting in concert") and the rules on the attribution of voting rights attached to shares of third parties are the same as the statutory securities trading provisions described above under "Disclosure Obligations under the German Securities Trading Act" except with respect to voting rights of shares underlying instruments whose holders are vested with the right to unilaterally acquire existing voting shares of the listed company or voting rights which may be acquired on the basis of instruments with similar economic effect. If a shareholder fails to provide notice on reaching or exceeding the 30 % threshold, or fails to make a public tender offer, the shareholder will be precluded from exercising any rights associated with its shares (including voting and dividend rights) until it has complied with the requirements under the German Securities Acquisition and Takeover Act. In addition, non-compliance with the disclosure requirement may result in a fine.

Disclosure of Participations in a Credit Institution

The German Banking Act (*Kreditwesengesetz*) requires any person intending to acquire, alone or acting in concert with another person, directly or indirectly, a qualifying holding (*bedeutende Beteiligung*) in a credit or financial services institution to notify the BaFin and the Bundesbank without undue delay and in writing of the intended acquisition. A qualifying holding is a direct or indirect holding in an undertaking which represents 10 % or more of the capital or voting rights or which makes it possible to exercise a significant influence over the management of such undertaking. The required notice must contain information demonstrating, among other things, the reliability of the person or, in the case of a corporation or other legal entity, the reliability of its directors and officers.

A person holding a qualifying holding shall also notify the BaFin and the Bundesbank without undue delay and in writing if he intends to increase the amount of the qualifying holding up to or beyond the thresholds of 20 %, 30 % or 50 % of the voting rights or capital or in such way that the institution comes under such person's control or if such person intends to reduce the participation below 10 % or below one of the other thresholds described above.

The BaFin will have to confirm the receipt of a complete notification within two working days in writing to the proposed acquirer. Within a period of 60 working days from the BaFin's written confirmation that a complete notification has been received (assessment period), the BaFin will review and, in accordance with Council Regulation (EU) No 1024/2013 of October 15, 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions, forward the notification and a proposal for a decision whether or not to object to the acquisition to the ECB. The ECB will decide whether or not to object to the acquisition on the basis of the applicable assessment criteria. Within the assessment period the ECB may prohibit the intended acquisition in particular if there appears to be reason to assume that the acquirer or its directors and officers are not reliable or that the acquirer is not financially sound, that the participation would impair the effective supervision of the relevant credit institution, that a prospective managing director (*Geschäftsleiter*) is not reliable or not qualified, that money laundering or financing of terrorism has occurred or been attempted in connection with the intended acquisition, or that there would be an increased risk of such illegal acts as a result of the intended acquisition. During the assessment period the BaFin may request further information necessary for its or the ECB's assessment. Generally, such a request delays the expiration of the assessment period by up to 30 business days. If the information submitted is incomplete or incorrect the ECB may prohibit the intended acquisition.

If a person acquires a qualifying holding despite such prohibition or without making the required notification, the competent authority may prohibit the person from exercising the voting rights attached to the shares. In addition, non-compliance with the disclosure requirement may result in the imposition of a fine in accordance with statutory provisions. Moreover, the competent authority may order that any disposition of the shares requires its approval and may ultimately appoint a trustee to exercise the voting rights attached to the shares or to sell the shares to the extent they constitute a qualifying holding.

Review of Acquisition of 10 % of voting rights or more by the German Federal Ministry of Economics and Energy

Pursuant to the German Foreign Trade Act (*Außenwirtschaftsgesetz*) and the German Foreign Trade Regulation (*Außenwirtschaftsverordnung*), the direct or indirect acquisition of 25 % or more of the voting rights in a German company by investors from outside the European Union and the European Free Trade Association (Iceland, Liechtenstein, Norway and Switzerland) or by entities which are owned by 25 % or more by investors from outside the aforementioned region may be reviewed by the German Federal Ministry of Economics and Energy (the "Ministry"). If the Ministry determines that the acquisition will likely affect the public policy or public security of Germany, it may impose conditions on or prohibit the acquisition or require that it is unwound. The acquirer may seek pre-clearance of a proposed acquisition from the Ministry. The Ministry must be notified in writing regarding the conclusion of a contract pertaining to the direct or indirect acquisition by an investor from outside the European Union and the European Free Trade Association of 10% or more of the voting rights in a German company which operates certain critical infrastructure or operates in other certain sensitive sectors (including inter alia certain technologies, IT, telecommunication, healthcare or the media). The Ministry must also be notified in writing regarding the conclusion of a contract pertaining to the direct or indirect acquisition by an investor from outside Germany of 10% or more of the voting rights in a German company operating in the defense or cryptology sector. If Deutsche Bank is considered to be a company which operates in any such critical infrastructure or sensitive sector, the Ministry would need to be notified of an acquisition of voting rights in Deutsche Bank that meets the abovementioned threshold. Pending clearance by the Ministry, an acquisition subject to this reporting requirement is legally void and may not be consummated. Consummating such an acquisition without clearance may result in monetary fines of up to € 500,000 or up to five years imprisonment. If the Ministry determines that the acquisition likely affects the German public order or security, or in case of an acquisition of voting rights in a German company active in the defense or cryptology sector determines that the acquisition poses a threat to essential security interests of Germany, it may impose conditions on or prohibit the acquisition or require that it is unwound in case it is implemented. The Ministry's decision to review an acquisition must be made within two months following the Ministry's knowledge of the conclusion of the acquisition contract, of the publication of the decision to launch a take-over bid or of the publication of the acquisition of control. The review must be completed within four months following

receipt of the complete acquisition documents and any additional information requested by the Ministry. The Ministry can extend its review period up to an additional four months. A review is precluded if more than five years have passed since the acquisition. On January 22, 2021 the Ministry published a draft revision of the German Foreign Trade Regulation (*Außenwirtschaftsverordnung*) may result in further restrictions.

EU Short Selling Regulation (ban on naked short selling)

Regulation (EU) No 236/2012 of the European Parliament and of the Council of March 14, 2012 on short selling and certain aspects of credit default swaps (the “EU Short Selling Regulation”) came into force on November 1, 2012. The EU Short Selling Regulation, the regulations adopted by the EU Commission implementing it, and the German act implementing the EU Short Selling Regulation replace the previously applicable German federal provisions governing the ban on naked short selling of shares and certain debt securities. (Short sales are sales of securities that the seller does not own, with the intention of buying back an identical security at a later point in time in order to be able to deliver the security. A short sale is “naked” when the seller has not borrowed the securities at the time of the short sale, or ensured they can be borrowed or obtained under a similar arrangement.) Under the EU Short Selling Regulation, except for certain exemptions, naked short sales of listed shares are not permitted. Short sales of listed shares that are covered by borrowing or similar arrangements are subject to the following transparency requirements. Significant net short positions in shares must be reported to the BaFin and, if a certain threshold is exceeded, they must also be publicly disclosed. Net short positions are calculated by netting the long and short positions held by a natural or legal person in the issued capital of the company concerned. The details are set forth in the EU Short Selling Regulation and the regulations adopted by the EU Commission implementing it. In certain situations described in greater detail in the EU Short Selling Regulation, the BaFin is permitted to limit short selling and comparable transactions.

Disclosure of Transactions of Managers

Art. 19 of Regulation (EU) No 596/2014 of the European Parliament and of the Council of April 16, 2014 on market abuse (the “EU Market Abuse Regulation”) requires persons with management responsibilities (“Managers”) in a listed company like Deutsche Bank AG to notify the company and the BaFin of their own transactions in shares or debt instruments of the company or financial instruments based thereon, in particular derivatives. Such notifications must be made promptly and no later than three business days after the date of the transaction. The notification obligation also applies to persons who are closely associated with a Manager. The obligation does not apply if the aggregate annual transactions by a Manager or persons with whom he or she is closely associated do not, individually, exceed a certain threshold amount through the end of a calendar year. The BaFin has made use of its authority to increase the threshold of € 5,000 set forth in the EU Marked Abuse Regulation to the maximum possible amount of € 20,000.

Deutsche Bank AG is required to promptly publish any notification received but in any case no later than two business days after receipt of such notification. The publication must be made in a manner which enables fast access to this information on a non-discriminatory basis in accordance with the implementing standards published by the European Securities and Markets Authority. Furthermore, Deutsche Bank AG must without undue delay notify the BaFin and forward the notification to the Company Register (Unternehmensregister). For the purposes of the EU Market Abuse Regulation, the following persons are deemed to be a Manager: members of management, administrative or supervisory bodies of Deutsche Bank AG as well as senior executives who are not such members but who have regular access to inside information relating directly or indirectly to the Company and who have power to take managerial decisions affecting the future developments and business prospects of the Company. The following persons are deemed to be closely associated with a Manager: spouses, registered civil partners (*eingetragene Lebenspartner*), dependent children and other relatives who at the time of the transaction requiring notification have lived in the same household with the Manager for at least one year. Legal entities for which the aforementioned persons have management responsibilities are also subject to the notification requirement. The aforementioned provisions also apply to legal entities, companies and institutions directly or indirectly controlled by a Manager or by a person closely associated with a Manager, which have been founded to the benefit of such a person, or whose economic interests correspond to a considerable extent to those of such a person. Non-compliance with the notification requirements may result in a fine.

Material Contracts

In the usual course of our business, we enter into numerous contracts with various other entities. We have not, however, entered into any material contracts outside the ordinary course of our business within the past two years.

Exchange Controls

As in other member states of the European Union, regulations issued by the competent European Union authorities to comply with United Nations resolutions have caused freeze orders on assets of certain legal and natural persons designated in such regulations. In addition, the European Union maintained a wide range of autonomous economic and financial sanctions on Iran. While all nuclear-related economic and financial EU sanctions against Iran were repealed on January 16, 2016, some restrictions remain in force.

With some exceptions, corporations or individuals residing in Germany are required to report to the Bundesbank any payment received from, or made to or for the account of, a nonresident corporation or individual that exceeds € 12,500 (or the equivalent in a foreign currency). This reporting requirement is for statistical purposes.

Subject to the above-mentioned exceptions, there are currently no German laws, decrees or regulations that would prevent the transfer of capital or remittance of dividends or other payments to our shareholders who are not residents or citizens of Germany.

There are also no restrictions under German law or our Articles of Association concerning the right of nonresident or foreign shareholders to hold our shares or to exercise any applicable voting rights. Where the investment reaches or exceeds certain thresholds, however, certain reporting obligations apply and the investment may become subject to review by the BaFin, the European Central Bank and other competent authorities. For more information see "Item 10: Additional Information – Notification Requirements".

Taxation

The following is a general summary of material German and United States federal income tax consequences of the ownership and disposition of shares for a resident of the United States for purposes of the income tax convention between the United States and Germany (the "Treaty") who is fully eligible for benefits under the Treaty. A U.S. resident will generally be entitled to Treaty benefits if it is:

- the beneficial owner of shares (and of the dividends paid with respect to the shares);
- an individual resident of the United States, a U.S. corporation, or a partnership, estate or trust to the extent its income is subject to taxation in the United States in its hands or in the hands of its partners or beneficiaries;
- not also a resident of Germany for German tax purposes; and
- not subject to "anti-treaty shopping" articles under German domestic law or the Treaty that apply in limited circumstances.

The Treaty benefits discussed below generally are not available to shareholders who hold shares in connection with the conduct of business through a permanent establishment in Germany. The summary does not discuss the treatment of those shareholders.

The summary does not purport to be a comprehensive description of all of the tax considerations that may be relevant to any particular shareholder, including tax considerations that arise from rules of general application or that are generally assumed to be known by shareholders. In particular, the summary deals only with shareholders that will hold shares as capital assets and does not address the tax treatment of shareholders that are subject to special rules, such as fiduciaries of pension (e.g. U.S. pension funds), profit-sharing or other employee benefit plans, banks, insurance companies, dealers in securities or currencies, persons that hold shares as a position in a straddle, conversion transaction, synthetic security or other integrated financial transaction, persons that elect mark-to-market treatment, persons that own, directly or indirectly, 10 % or more of our stock, measured by vote or value, persons that hold shares through a partnership or hybrid entity and persons whose "functional currency" is not the U.S. dollar. The summary is based on German and U.S. laws, treaties and regulatory interpretations, including in the United States current and proposed U.S. Treasury regulations as of the date hereof, all of which are subject to change (possibly with retroactive effect).

Shareholders should consult their own advisors regarding the tax consequences of the ownership and disposition of shares in light of their particular circumstances, as well as the effect of any state, local or other national laws.

Taxation of Dividends

In general, dividends that we pay are subject to German withholding tax at an aggregate rate of 26.375 % (consisting of a 25 % withholding tax and a 1.375 % surcharge). Under the Treaty, a U.S. resident will be entitled to receive a refund from the German tax authorities of 11.375 in respect of a declared dividend of 100. For example, for a declared dividend of 100, a U.S. resident initially will receive 73.625 and may claim a refund from the German tax authorities of 11.375 and, therefore, receive a total cash payment of 85 (i.e., 85 % of the declared dividend). According to an amendment of the German Investment Tax Act dividends received by a fund within the meaning of the German Investment Tax Act are generally subject to 15 % German withholding tax equal to the Treaty tax rate. U.S. residents who are entitled to a refund of more than 11.375 % (e.g. U.S. pension funds) have to fulfil further requirements according to para. 50j German Income Tax Act, in particular certain holding requirements.

For U.S. tax purposes, a U.S. resident will be deemed to have received total dividends of 100. The gross amount of dividends that a U.S. resident receives (which includes amounts withheld in respect of German withholding tax) generally will be subject to U.S. federal income taxation as foreign source dividend income, and will not be eligible for the dividends received deduction generally allowed to U.S. corporations. German withholding tax at the 15 % rate provided under the Treaty will be treated as a foreign income tax that, subject to generally applicable limitations under U.S. tax law, is eligible for credit against a U.S. resident's U.S. federal income tax liability or, at its election, may be deducted in computing taxable income. Thus, for a declared dividend of 100, a U.S. resident will be deemed to have paid German taxes of 15. A U.S. resident cannot claim credits for German taxes that would have been refunded to it if it had filed a claim for refund. Foreign tax credits will not be allowed for withholding taxes imposed in respect of certain short-term or hedged positions. The creditability of foreign withholding taxes may be limited in certain situations, including where the burden of foreign taxes is separated inappropriately from the related foreign income.

Subject to certain exceptions for short-term and hedged positions, “qualified dividends” received by certain non-corporate U.S. shareholders will generally be subject to taxation in the United States at a lower rate than other ordinary income. Dividends received will be qualified dividends if we (i) are eligible for the benefits of a comprehensive income tax treaty with the United States that the U.S. Internal Revenue Service (“IRS”) has approved for purposes of the qualified dividend rules and (ii) were not, in the year prior to the year in which the dividend was paid, and are not, in the year in which the dividend is paid, a passive foreign investment company (“PFIC”). The Treaty has been approved for purposes of the qualified dividend rules, and we believe we qualify for benefits under the Treaty. The determination of whether we are a PFIC must be made annually and is dependent on the particular facts and circumstances at the time. It requires an analysis of our income and valuation of our assets, including goodwill and other intangible assets. Based on our audited financial statements and relevant market and shareholder data, we believe that we were not a PFIC for U.S. federal income tax purposes with respect to our taxable years ended December 31, 2018 or December 31, 2019. In addition, based on our current expectations regarding the value and nature of our assets, the sources and nature of our income, and relevant market and shareholder data, we do not currently anticipate becoming a PFIC for our taxable year ending December 31, 2020, or for the foreseeable future. However, the PFIC rules are complex and their application to financial services companies is unclear. Each U.S. shareholder should consult its own tax advisor regarding the potential applicability of the PFIC regime to us and its implications for their particular circumstances.

If a U.S. resident receives a dividend paid in euros, it will recognize income in a U.S. dollar amount calculated by reference to the exchange rate in effect on the date of receipt, regardless of whether the payment is in fact converted into U.S. dollars. If dividends are converted into U.S. dollars on the date of receipt, a U.S. resident generally should not be required to recognize foreign currency gain or loss in respect of the dividend income but may be required to recognize foreign currency gain or loss on the receipt of a refund in respect of German withholding tax to the extent the U.S. dollar value of the refund differs from the U.S. dollar equivalent of that amount on the date of receipt of the underlying dividend.

Refund Procedures

To claim a refund, a U.S. resident must submit, within four years from the end of the calendar year in which the dividend is received, a claim for refund to the German tax authorities. The claim for refund must be accompanied by a withholding tax certificate (Kapitalertragsteuerbescheinigung) on an officially prescribed form and issued by the institution that withheld the tax.

Claims for refunds are made on a German claim for refund form, which must be filed with the German tax authorities: Bundeszentralamt für Steuern, An der Küppe 1, D-53225 Bonn, Germany. The German claim for refund forms can be downloaded from the homepage of the Bundeszentralamt für Steuern (www.bzst.de). A special form is available in cases para. 50j German Income Tax Act is applicable. A U.S. resident must also submit to the German tax authorities a certification (on IRS Form 6166) with respect to its last filed U.S. federal income tax return. Requests for IRS Form 6166 are made on IRS Form 8802, which requires payment of a user fee. IRS Form 8802 and its instructions can be obtained from the IRS website at www.irs.gov. Instead of the individual refund procedure described above, a U.S. resident may use an IT-supported quick-

refund procedure ("Datenträgerverfahren – DTV"/"Data Medium Procedure – DMP"). If the U.S. resident's bank or broker elects to participate in the DMP, it will perform administrative functions necessary to claim the Treaty refund for the beneficiaries. The refund beneficiaries must provide specified information to the DMP participant and confirm to the DMP participant that they meet the conditions of the Treaty provisions and that they authorize the DMP participant to file applications and receive notices and payments on their behalf.

The refund beneficiaries also must provide a "certification of filing a tax return" on IRS Form 6166 with the DMP participant. In addition, if the individual refund procedure requires a withholding tax certificate (see above), such certificate is generally also necessary under the DMP.

The German tax authorities reserve the right to audit the entitlement to tax refunds for several years following their payment pursuant to the Treaty in individual cases. The DMP participant must assist with the audit by providing the necessary details or by forwarding the queries to the respective refund beneficiaries/shareholders. Presently the DMP cannot be used if the Treaty tax rate is below 15 % or if a holder of Depository Receipts claims a refund.

The German tax authorities will issue refunds denominated in euros. In the case of shares held through banks or brokers participating in the Depository Trust Company, the refunds will be issued to the Depository Trust Company, which will convert the refunds to U.S. dollars. The resulting amounts will be paid to banks or brokers for the account of holders.

If a U.S. resident holds its shares through a bank or broker who elects to participate in the DMP, it could take at least three weeks for it to receive a refund after a combined claim for refund has been filed with the German tax authorities. If a U.S. resident files a claim for refund directly with the German tax authorities, it could take at least eight months for it to receive a refund. The length of time between filing a claim for refund and receipt of that refund is uncertain and we can give no assurances as to when any refund will be received.

Germany recently initiated a reform of the refund procedures. If implemented, such reform would, among other elements, retire DMP and paper-based refund systems. A U.S. resident holder would generally have to file a claim for refund electronically after 2022. For dividends received by a U.S. holder after 2023 withholding tax certificates would be replaced by electronic submission of data directly to the tax authorities by the institution that withheld the tax. Such reform proposals may change in the course of the legislative procedure.

Taxation of Capital Gains

Under the Treaty, a U.S. resident will generally not be subject to German capital gains tax in respect of a sale or other disposition of shares. For U.S. federal income tax purposes, a U.S. holder will generally recognize capital gain or loss on the sale or other disposition of shares in an amount equal to the difference between such holder's tax basis in the shares and the U.S. dollar value of the amount realized from their sale or other disposition. Such gain or loss will be long-term capital gain or loss if the shares were held for more than one year. The net amount of long-term capital gain realized by an individual generally is subject to taxation at a lower rate than ordinary income. Any such gain generally would be treated as income arising from sources within the United States; any such loss would generally be allocated against U.S. source income. The ability to offset capital losses against ordinary income is subject to limitations.

Shareholders whose shares are held in an account with a German bank or financial services institution (including a German branch of a non-German bank or financial services institution) are urged to consult their own advisors. This summary does not discuss their particular tax situation.

United States Information Reporting and Backup Withholding

Dividends and payments of the proceeds on a sale of shares, paid within the United States or through certain U.S.-related financial intermediaries are subject to information reporting and may be subject to backup withholding unless the U.S. resident (i) is a corporation (other than an S corporation) or other exempt recipient or (ii) provides a taxpayer identification number and certifies (on IRS Form W-9) that no loss of exemption from backup withholding has occurred. Shareholders that are not U.S. persons generally are not subject to information reporting or backup withholding.

However, a non-U.S. person may be required to provide a certification (generally on IRS Form W-8BEN or W-8BEN-E) of its non-U.S. status in connection with payments received in the United States or through a U.S.-related financial intermediary.

Backup withholding tax is not an additional tax, and any amounts withheld under the backup withholding rules will be allowed as a refund or a credit against a holder's U.S. federal income tax liability, provided the required information is furnished to the IRS.

Shareholders may be subject to other U.S. information reporting requirements. Shareholders should consult their own advisors regarding the application of U.S. information reporting rules in light of their particular circumstances.

German Gift and Inheritance Taxes

Under the current estate, inheritance and gift tax treaty between the United States and Germany (the "Estate Tax Treaty"), a transfer of shares generally will not be subject to German gift or inheritance tax so long as the donor or decedent, and the heir, donee or other beneficiary, were not domiciled in Germany for purposes of the Estate Tax Treaty at the time the gift was made, or at the time of the decedent's death, and the shares were not held in connection with a permanent establishment or fixed base in Germany.

The Estate Tax Treaty provides a credit against U.S. federal estate and gift tax liability for the amount of inheritance and gift tax paid in Germany, subject to certain limitations, where shares are subject to German inheritance or gift tax and United States federal estate or gift tax.

Other German Taxes

There are currently no German net wealth, transfer, stamp or other similar taxes that would apply to a U.S. resident as a result of the receipt, purchase, ownership or sale of shares.

Dividends and Paying Agents

Not required because this document is filed as an annual report.

Statement by Experts

Not required because this document is filed as an annual report.

Documents on Display

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended. In accordance with these requirements, we file reports and other information with the Securities and Exchange Commission. You may inspect and copy these materials, including this document and its exhibits, at the Commission's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain copies of the materials from the Public Reference Room at prescribed rates. You may obtain information on the operation of the Commission's Public Reference Room by calling the Commission in the United States at 1-800-SEC-0330. Our Securities and Exchange Commission filings are also available over the Internet at the Securities and Exchange Commission's website at www.sec.gov under File Number 001-15242.

Subsidiary Information

Not applicable.

Item 11: Quantitative and Qualitative Disclosures about Credit, Market and Other Risk

For Quantitative and Qualitative Disclosures about Credit, Market and Other Risk, please see “Management Report: Risk Report” in the Annual Report 2020.

Please see pages S-1 through S-18 of the Supplemental Financial Information, which pages are incorporated by reference herein, for information required by SEC Industry Guide 3.

Item 12: Description of Securities other than Equity Securities

Our ordinary shares are not represented by American Depositary Receipts and accordingly no information is required to be provided pursuant to Item 12.D.3 and Item 12.D.4. The remainder of the information required by this Item 12 and by Instruction 2(d) under the Instructions as to Exhibits of Form 20-F is provided as Exhibit 2.2 to this Annual Report on Form 20-F.

PART II

Item 13: Defaults, Dividend Arrearages and Delinquencies

Not applicable.

Item 14: Material Modifications to the Rights of Security Holders and Use of Proceeds

According to recent changes to the German Banking Act (*Kreditwesengesetz*) and the German Recovery and Resolution Act (*Sanierungs- und Abwicklungsgesetz*), additional restrictions on distributions may apply or will apply, as the case may be, when we are in breach of capital requirements. In particular, under the new regime, a credit institution, such as us, will be considered as failing to meet the combined buffer requirement where it does not have sufficient own funds in an amount and of the quality needed to meet at the same time (i) its minimum capital requirements under the CRR, (ii) certain "Pillar 2" capital requirements, and (iii) the sum of the capital buffers applicable to the relevant credit institution. In calculating the respective amounts that may be distributed (so-called "Maximum Distributable Amount" or "MDA"), we will have to take certain "Pillar 2" capital requirements into account. We would also be subject to MDA restrictions in instances of non-compliance with our leverage ratio buffer introduced in the CRR (so-called "L-MDA") from January 2022 onwards. In addition, we are subject to additional restrictions on distributions (so-called "M-MDA") if we breach the harmonized minimum TLAC requirement under the CRR and our institution-specific minimum requirement for own funds and eligible liabilities set by the Single Resolution Board.

Item 15: Controls and Procedures

Disclosure Controls and Procedures

An evaluation was carried out under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934) as of December 31, 2020. There are, as described below, inherent limitations to the effectiveness of any control system, including disclosure controls and procedures. Accordingly, even effective disclosure controls and procedures can provide only reasonable assurance of achieving their control objectives. Based upon such evaluation, our Chief Executive Officer and Chief Financial Officer concluded that the design and operation of our disclosure controls and procedures were effective as of December 31, 2020.

Management's Annual Report on Internal Control over Financial Reporting

Management of Deutsche Bank Aktiengesellschaft, together with its consolidated subsidiaries, is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed under the supervision of our Chief Executive Officer and our Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the firm's financial statements for external reporting purposes in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). As of December 31, 2020, management conducted an assessment of the effectiveness of our internal control over financial reporting based on the framework established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on the assessment performed, management has determined that our internal control over financial reporting as of December 31, 2020 was effective based on the COSO framework (2013).

Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, the registered public accounting firm that audited the financial statements included in this document, has issued a report on our internal control over financial reporting, which is set forth below.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Supervisory Board of Deutsche Bank Aktiengesellschaft:

Opinion on Internal Control Over Financial Reporting

We have audited Deutsche Bank Aktiengesellschaft and subsidiaries' internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Deutsche Bank Aktiengesellschaft and subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheet of the Company as of December 31, 2020, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for the year then ended, and the related notes, and our report dated March 8, 2021 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft

Eschborn/Frankfurt am Main, Germany

March 8, 2021

Change in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting identified in connection with the evaluation referred to above that occurred during the year ended December 31, 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. As such, disclosure controls and procedures or systems for internal control over financial reporting may not prevent all error and all fraud. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and any design may not succeed in achieving its stated goals under all potential future conditions; over time, control may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 16A: Audit Committee Financial Expert

Please see “Corporate Governance Statement according to Sections 289f and 315d of the German Commercial Code: Auditing and Controlling: Audit Committee Financial Expert” in the Annual Report 2020.

Item 16B: Code of Ethics

Please see “Corporate Governance Statement according to Sections 289f and 315d of the German Commercial Code: Values and Leadership Principles of Deutsche Bank AG and Deutsche Bank Group: Deutsche Bank Group Code of Conduct and Code of Ethics for Senior Financial Officers” in the Annual Report 2020.

Item 16C: Principal accountant fees and services

Please see “Management Report: Corporate Governance Statement/Corporate Governance Report: Auditing and Controlling: Principal Accountant Fees and Services” in the Annual Report 2020.

Item 16D: Exemptions from the Listing Standards for Audit Committees

Our common shares are listed on the New York Stock Exchange, the corporate governance rules of which require a foreign private issuer such as us to have an audit committee that satisfies the requirements of Rule 10A-3 under the U.S. Securities Exchange Act of 1934. These requirements include a requirement that the audit committee be composed of members that are “independent” of the issuer, as defined in the Rule, subject to certain exemptions, including an exemption for employees who are not executive officers of the issuer if the employees are elected or named to the board of directors or audit committee pursuant to the issuer’s governing law or documents, an employee collective bargaining or similar agreement or other home country legal or listing requirements. The German Co-Determination Act of 1976 (*Mitbestimmungsgesetz*) requires that the

shareholders elect half of the members of the supervisory board of large German companies, such as us, and that employees in Germany elect the other half. Employee-elected members are typically themselves employees or representatives of labor unions representing employees. Pursuant to law and practice, committees of the Supervisory Board are typically composed of both shareholder- and employee-elected members. Of the current members of our Audit Committee, four – Henriette Mark, Gabriele Platscher, Detlef Polaschek and Bernd Rose – are current employees of Deutsche Bank who have been elected as Supervisory Board members by the employees. None of them is an executive officer. Accordingly, their service on the Audit Committee is permissible pursuant to the exemption from the independence requirements provided for by paragraph (b)(1)(iv)(C) of the Rule. We do not believe the reliance on such exemption would materially adversely affect the ability of the Audit Committee to act independently and to satisfy the other requirements of the Rule.

Item 16E: Purchases of Equity Securities by the Issuer and Affiliated Purchasers

In 2020, we repurchased a total of 25,499,999 shares, for group purposes pursuant to share buybacks authorized by the General Meeting. None were via derivatives. During the period from January 1, 2020 until the 2020 Annual General Meeting on May 20, 2020 we repurchased 25,499,999 shares, of which none were via derivatives, of our ordinary shares pursuant to the authorization granted by the Annual General Meeting on May 23, 2019, at an average price of € 7.98 and for a total consideration of € 204 million. This authorization was replaced by a new authorization to buy back shares approved by the Annual General Meeting on May 20, 2020. Under the new authorization, up to 206,677,313 shares may be repurchased through April 30, 2025. Of these, 103,338,656 shares may be purchased by using derivatives. During the period from the 2020 Annual General Meeting until December 31, 2020, no shares were brought back. At December 31, 2020, the number of shares held in Treasury from buybacks totaled 1.3 million. This figure stems from one share at the beginning of the year, plus 25.5 million shares from buybacks in 2020, less 24.2 million shares which were used to fulfill delivery obligations in the course of share-based compensation of employees. We did not cancel any shares in 2020.

In addition to these share buybacks for group purposes, pursuant to a shareholder authorization approved at our 2020 Annual General Meeting, we are authorized to buy and sell, for the purpose of securities trading, our ordinary shares through April 30, 2025, provided that number of shares held for this purpose may not at any time exceed 10 % of the company’s share capital. The shares may be bought through the stock exchange or by means of a public purchase offer to all shareholders. The gross volume of these securities trading transactions is often large, and even the net amount of such repurchases or sales may, in a given month, be large, though over longer periods of time such transactions tend to offset and are in any event constrained by the 10 % of share capital limit. These securities trading transactions consist predominantly of transactions on major non-US securities exchanges. We also enter into derivative contracts with respect to our shares and limited to shares in a maximum volume of 5 % of the actual share capital.

The following table sets forth, for each month in 2020 and for the year as a whole, the total gross number of our shares repurchased by us and our affiliated purchasers (pursuant to both activities described above), the total gross number of shares sold, the net number of shares purchased or sold, the average price paid per share (based on the gross shares repurchased), the number of shares that were purchased for group purposes mentioned above and the maximum number of shares that at that date remained eligible for purchase under such programs.

Issuer Purchases of Equity Securities in 2020

Month	Total number of shares purchased	Total number of shares sold	Net number of shares purchased or (sold)	Average price paid per share (in €)	Number of shares purchased for group purposes	Maximum number of shares that may yet be purchased under plans or programs
January	4,041,854	3,851,518	190,336	7.67	3,399,999	194,977,313
February	14,192,512	1,590,564	12,601,948	9.75	12,600,000	182,377,313
March	2,214,770	13,608,544	(11,393,774)	6.93	0	182,377,313
April	10,386,862	1,981,839	8,405,023	5.65	9,500,000	172,877,313
May	825,470	832,196	(6,726)	6.79	0	206,677,313
June	633,735	1,248,135	(614,400)	9.86	0	206,677,313
July	98,916	(96,007)	194,923	8.65	0	206,677,313
August	76,580	1,515,953	(1,439,373)	8.02	0	206,677,313
September	1,121,058	7,473,550	(6,352,492)	7.94	0	206,677,313
October	67,929	119,738	(51,809)	7.71	0	206,677,313
November	1,069,386	1,259,090	(189,704)	8.96	0	206,677,313
December	329,633	998,776	(669,143)	9.17	0	206,677,313
Total 2020	35,058,705	34,383,896	674,809	7.95	25,499,999	206,677,313

At December 31, 2020, the number of shares held by us in treasury totaled 1,346,166. This figure stems from 671,357 shares at the beginning of the year, plus 674,809 net shares purchased in 2020. At December 31, 2020, our issued share capital consisted of 2,066,773,131 ordinary shares, of which 2,065,426,965 were outstanding.

Item 16F: Change in Registrant's Certifying Accountant

Recent European and national regulations require a rotation of the external auditor at regular intervals. The Bank's tender process for a new external auditor was announced in February 2018. An extensive and rigorous evaluation process held over seven months was run independently by the Audit Committee of the Bank's Supervisory Board. As a result of the required rotation, the Bank did not request KPMG AG Wirtschaftsprüfungsgesellschaft ("KPMG"), the Bank's previous external auditor, to submit a tender proposal to stand for re-election as auditor, and the engagement of KPMG terminated as of March 23, 2020.

The Bank's Supervisory Board decided to recommend the appointment of Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft ("EY") as external auditor. This recommendation was approved by the Bank's shareholders at the 2019 Annual General Meeting on May 23, 2019. The appointment of EY as external auditor for fiscal year 2020 and interim periods through the 2021 Annual General Meeting was approved by the Bank's shareholders at the 2020 Annual General Meeting on May 20, 2020.

The disclosure called for by paragraph (a) of this Item 16F was previously reported, as that term is defined in Rule 12b-2 under the Exchange Act, in the Bank's Annual Report on Form 20-F filed on March 20, 2020.

Item 16G: Corporate Governance

Our common shares are listed on the New York Stock Exchange, as well as on all seven German stock exchanges. Set forth below is a description of the significant ways in which our corporate governance practices differ from those applicable to U.S. domestic companies under the New York Stock Exchange's listing standards as set forth in its Listed Company Manual (the "NYSE Manual").

The Legal Framework. Corporate governance principles for German stock corporations (*Aktiengesellschaften*) are set forth in the German Stock Corporation Act (*Aktiengesetz*), the German Co-Determination Act of 1976 (*Mitbestimmungsgesetz*) and the German Corporate Governance Code (*Deutscher Corporate Governance Kodex*, referred to as the Code).

The Two-Tier Board System of a German Stock Corporation. The German Stock Corporation Act provides for a clear separation of management and oversight functions. It therefore requires German stock corporations to have both a supervisory board (*Aufsichtsrat*) and a management board (*Vorstand*). These boards are separate; no individual may be a member of both. Both the members of the management board and the members of the supervisory board must exercise the standard of care of a diligent business person to the company. In complying with this standard of care they are required to take into account a broad range of considerations, including the interests of the company and those of its shareholders, employees and creditors.

The management board is responsible for managing the company and representing the company in its dealings with third parties. The management board is also required to ensure appropriate risk management within the corporation and to establish an internal monitoring system. The members of the management board, including its chairperson or speaker, are regarded as peers and share a collective responsibility for all management decisions.

The supervisory board appoints and removes the members of the management board. It also may appoint a chairman (CEO) and one or more deputy chairmen of the management board. Although it is not permitted to make management decisions, the supervisory board has comprehensive monitoring functions with respect to the activities of the management board, including advising the management board and participating in decisions of fundamental importance to the company. To ensure that these monitoring functions are carried out properly, the management board must, among other things, regularly report to the supervisory board with regard to current business operations and business planning, including any deviation of actual developments from concrete and material targets previously presented to the supervisory board. The supervisory board may also request special reports from the management board at any time. Transactions of fundamental importance to the company, such as major strategic decisions or other actions that may have a fundamental impact on the company's assets and liabilities, financial condition or results of operations, may be subject to the consent of the supervisory board. Pursuant to our Articles of

Association (*Satzung*), such transactions include the granting of general powers of attorney, the granting of credits, including the acquisition of participations in other companies for which the German Banking Act (*Kreditwesengesetz*) requires approval by the Supervisory Board, as well as major acquisitions or disposals of real estate or other participations.

Pursuant to the German Co-Determination Act, our Supervisory Board consists of representatives elected by the shareholders and representatives elected by the employees in Germany. Based on the total number of Deutsche Bank employees in Germany these employees have the right to elect one-half of the total of twenty Supervisory Board members. The chairperson of the Supervisory Board of Deutsche Bank is a shareholder representative who has the deciding vote in the event of a tie.

This two-tier board system contrasts with the unitary board of directors envisaged by the relevant laws of all U.S. states and the New York Stock Exchange listing standards for U.S. companies.

German companies which have their shares listed on a stock exchange must each year issue a statement on the company's corporate governance and either include such statement in their annual management report or publish it separately on their website.

The Recommendations of the Code. The Code was issued in 2002 by a commission composed of German corporate governance experts appointed by the German Federal Ministry of Justice in 2001. The Code was last amended in December 2019 with effect of March 20, 2020. It describes and summarizes the basic mandatory statutory corporate governance principles found in the provisions of German law. In addition, it contains supplemental recommendations and suggestions for standards on responsible corporate governance intended to reflect generally accepted best practice.

The Code is structured from a task perspective and addresses seven core areas of corporate governance. These are the tasks of (a) management and supervision, (b) appointment of candidates to the management board, (c) composition of the supervisory board, (d) supervisory board procedures, (e) conflicts of interest, (f) transparency and external reporting as well as (g) the remuneration of the members of the management board and the supervisory board. The Code contains three types of provisions. First, the Code contains principles which reflect material legal requirements for responsible governance, and are used in the Code to inform investors and other stakeholders. The second type of provisions is recommendations. While these are not legally binding, Section 161 of the German Stock Corporation Act requires that any German exchange-listed company declare annually that the company complies with the recommendations of the Code or, if not, which recommendations the company does not comply with and the reasons for the non-compliance ("comply or explain"). The third type of Code provisions comprises suggestions which companies may choose not to comply with without disclosure. The Code contains a significant number of such suggestions, covering almost all of the core areas of corporate governance it addresses.

In their last Declaration of Conformity of October 30, 2020, the Management Board and the Supervisory Board of Deutsche Bank stated that, since the last Declaration of Conformity issued on October 30, 2019, they have acted and will act in the future in conformity with the recommendations of the Code, with certain specified exceptions. The Declaration of Conformity is available on Deutsche Bank's internet website at www.db.com/ir/en/documents.htm.

Supervisory Board Committees. The supervisory board may form committees. Pursuant to the German Stock Corporation Act, any supervisory board committee must regularly report to the supervisory board.

The German Co-Determination Act requires that the supervisory board form a mediation committee to propose candidates for the management board in the event that the two-thirds majority of the members of the supervisory board needed to appoint members of the management board is not met.

The German Stock Corporation Act specifically mentions the possibility to establish an "audit committee" to deal with the supervision of accounting processes, the efficiency of the internal control system the risk management system and the internal revision system as well as with the annual auditing, in particular with the selection and the independence of the external auditor and the additional services rendered by the external auditor. The Code recommends establishing such an "audit committee". The Code also recommends establishing a "nomination committee" comprised only of shareholder-elected supervisory board members to prepare the supervisory board's proposals for the election or appointment of new shareholder representatives to the supervisory board. In general the Code recommends that the supervisory board shall form – depending on the specific circumstances of the enterprise and the number of supervisory board members – committees of members with relevant specialist expertise which can handle subjects, such as corporate strategy, compensation of the members of the management board, investments and financing.

Sections 25d (7) to (12) of the German Banking Act require, depending on size and complexity of the respective credit institution, the establishment of supervisory board committees with specific tasks to be performed as follows: risk committee, audit committee, nomination committee (with tasks and composition requirements different from those set out in the Code) and compensation control committee. The Code's recommendation that the nomination committee shall only comprise shareholder representatives is not complied with by Deutsche Bank AG because of mandatory special rules set forth in the

German Banking Act, which assign further tasks to the nomination committee in addition to the preparation of proposals for the appointment of new shareholder representatives to the supervisory board. These further tasks do not justify the exclusion of employee representatives from the nomination committee. Based on the previous version of the Code, which was applicable until March 20, 2020, this non-compliance had to be disclosed and justified in the annual Declaration of Conformity. The current version of the Code provides that credit institutions and insurance companies are exempt from recommendations of the Code which conflict with special rules or regulations applicable to them. However, the Code recommends that in the case of such conflicts, companies indicate in their annual corporate governance statement what recommendations of the Code were not applicable to them.

The Supervisory Board of Deutsche Bank has established a Chairman’s Committee (*Präsidialausschuss*) which is inter alia responsible for conclusion, amendment and termination of employment and pension contracts with members of the Management Board, taking into account the responsibility of the Supervisory Board as a whole for the remuneration of the members of the Management Board, a Nomination Committee (*Nominierungsausschuss*), an Audit Committee (*Prüfungsausschuss*), a Risk Committee (*Risikoausschuss*), an Integrity Committee (*Integritätsausschuss*), a Compensation Control Committee (*Vergütungskontrollausschuss*), a Strategy Committee (*Strategieausschuss*), a Technology, Data and Innovation Committee (*Technologie-, Daten- und Innovationsausschuss*) and a Mediation Committee (*Vermittlungsausschuss*). The functions of a nominating/corporate governance committee and of a compensation committee required by the NYSE Manual for U.S. companies listed on the NYSE are therefore performed by the Supervisory Board or one of its committees, in particular the Chairman’s Committee, the Compensation Control Committee and the Mediation Committee.

Independent Board Members. The NYSE Manual requires that a majority of the members of the board of directors of a NYSE listed U.S. company and each member of its nominating/corporate governance, compensation and audit committees be “independent” according to strict criteria and that the board of directors determines that such member has no material direct or indirect relationship with the company.

As a foreign private issuer, Deutsche Bank is not subject to these requirements. However, its audit committee must meet the more lenient independence requirement of Rule 10A-3 under the Securities Exchange Act of 1934. German corporate law does not require an affirmative independence determination, meaning that the Supervisory Board need not make affirmative findings that audit committee members are independent. However, the German Stock Corporation Act and the Code, as the case may be, contain several rules, recommendations and suggestions to ensure the supervisory board’s independent advice to, and supervision of, the management board. As noted above, no member of the management board may serve on the supervisory board (and vice versa). Supervisory board members will not be bound by directions or instructions from third parties. Any advisory, service or similar contract between a member of the supervisory board and the company is subject to the supervisory board’s approval. A similar requirement applies to loans granted by the company to a supervisory board member or other persons, such as certain members of a supervisory board member’s family. In addition, the German Stock Corporation Act prohibits a person who within the last two years was a member of the management board from becoming a member of the supervisory board of the same company unless he or she is elected upon the proposal of shareholders holding more than 25 % of the voting rights of the company.

The Code also recommends that each member of the supervisory board inform the supervisory board of any conflicts of interest. In the case of material conflicts of interest or ongoing conflicts, the Code recommends that the mandate of the Supervisory Board member shall end either as a result of such supervisory board member’s withdrawal or, failing that, based on his or her removal from office by the shareholders’ meeting. The Code further recommends that any conflicts of interest that have occurred be reported by the supervisory board at the annual general meeting, together with the action taken, and that potential conflicts of interest also be taken into account in the nomination process for the election of supervisory board members.

Audit Committee Procedures. Pursuant to the NYSE Manual the audit committee of a U.S. company listed on the NYSE must have a written charter addressing its purpose, an annual performance evaluation, and the review of an auditor’s report describing internal quality control issues and procedures and all relationships between the auditor and the company. The Audit Committee of Deutsche Bank operates under written terms of reference and reviews the efficiency of its activities regularly.

Disclosure of Corporate Governance Guidelines. Deutsche Bank discloses its Articles of Association, the Terms of Reference of its Management Board, its Supervisory Board, the Chairman’s Committee, the Audit Committee, the Risk Committee, the Integrity Committee, the Compensation Control Committee, the Nomination Committee, the Strategy Committee and the Technology, Data and Innovation Committee, its Declaration of Conformity under the Code pursuant to Section 161 of the German Stock Corporation Act and other documents pertaining to its corporate governance on its internet website at www.db.com/ir/en/documents.htm.

Item 16H: Mine Safety Disclosure

Not applicable.

Disclosures Under Iran Threat Reduction and Syria Human Rights Act of 2012

Under Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012, which added Section 13(r) of the U.S. Securities Exchange Act of 1934, as amended, an issuer of securities registered under the Securities Exchange Act of 1934 is required to disclose in its periodic reports filed under the Securities Exchange Act of 1934 certain of its activities and those of its affiliates relating to Iran and to other persons sanctioned by the U.S. under programs relating to terrorism and proliferation of weapons of mass destruction that occurred during the period covered by the report. We describe below a number of potentially disclosable activities of Deutsche Bank AG and its affiliates. Disclosure is generally required regardless of whether the activities, transactions or dealings were conducted in compliance with applicable law. Deutsche Bank also reports transactions in which other Iranian persons or entities listed on OFAC sanctions lists were involved, whether or not they are directly or indirectly owned or controlled by the Iranian government.

Legacy Contractual Obligations Related to Guarantees and Letters of Credit. Prior to 2007, we provided guarantees to a number of Iranian entities. In almost all of these cases, we issued counter-indemnities in support of guarantees issued by Iranian banks because the Iranian beneficiaries of the guarantees required that they be backed directly by Iranian banks. In 2007, we made a decision to discontinue issuing new guarantees to Iranian or Iran-related beneficiaries. Although the pre-existing guarantees stipulate that they must be either extended or honored if we receive such a demand and we are legally not able to terminate these guarantees, we decided to reject any “extend or pay” demands under such guarantees. Even though we had exited, where possible, many of these guarantees, guarantees with an aggregate face amount of approximately € 7.0 million are still outstanding as of year-end 2020. The gross revenues from this business in 2020 which we received from non-Iranian parties were approximately € 31,000 and the net profit we derived from these activities was less than this amount.

We also have outstanding legacy guarantees in relation to a Syrian bank sanctioned by the U.S. under its non-proliferation program. The aggregate face amount of these legacy guarantees was approximately € 9.8 million as of December 31, 2020, the gross revenues received from non-Syrian parties for these guarantees were approximately € 65,000 in 2020 and the net profit we derived from these activities was less than this amount. We intend to exit these guarantee arrangements.

Payments Executed. Deutsche Bank continuous to severely restrict its policy on Iran and consequently the execution of such payments.

Incoming Payments. In 2020, we received 5 payments from Iranian government parties or persons sanctioned by the United States under its programs relating to terrorism or weapons of mass destruction, adding up to approximately € 12,000 in favor of non-Iranian clients Revenues for these incoming payments were less than € 50. These figures include relevant transactions for Iranian Embassy-related offices not included in the section on Iranian Consulates and Embassies below and in favor of our non-Iranian clients.

Outgoing Payments. In 2020, no outgoing payments were executed in favor of Iranian parties outside of Germany; with regards to the Iranian Embassy in Germany, see below.

Operations of Iranian Bank Branches and Subsidiaries in Germany. Several Iranian banks, including Bank Melli Iran, Bank Saderat, Bank Sepah, and Europäisch-Iranische Handelsbank, have branches or offices in Germany, even though their funds and other economic resources had been frozen earlier under European law. As part of the payment clearing system in Germany and other European countries, when these branches or offices needed to make payments in Germany or Europe to cover their day-to-day operations such as rent, taxes, insurance premiums and salaries for their remaining staff, or for any other kind of banking-related operations, fund transfers from these Iranian banks had been accepted through Target2.

In 2020, we executed approximately € 3.5 million in (almost only in-coming) transfers through Target2 across approximately 1,000 transactions and credited the relevant amounts to our non-Iranian clients. The gross revenues derived from these payments were approximately € 5,000.

We do not consider the execution of such transactions to be significant and we expect that we will continue to execute such transactions in the future.

Maintaining of Accounts for Iranian Consulates and Embassies. In 2020, Iranian embassies and consulates in Germany held accounts with us. The purpose of these accounts is the funding of day-to-day operational costs of the embassies and consulates, such as salaries, rent and electricity. In 2020, the total volume of outgoing payments from these accounts was approximately € 5.8 million which have been funded through € 4.5 million of incoming payments. From these activities, we derived gross revenues of approximately € 2,700 and net profits which were less than this amount. The German government has requested that we provide these services to enable the government of Iran to conduct its diplomatic relations and we intend to continue such maintenance.

Activities of Entities in Which We Have Interests. Section 13(r) requires us to provide the specified disclosure with respect to ourselves and our "affiliates," as defined in Exchange Act Rule 12b-2. Although we have minority equity interests in certain entities that could arguably result in these entities being deemed "affiliates," we do not have the authority or the legal ability to acquire in every instance the information from these entities that would be necessary to determine whether they are engaged in any disclosable activities under Section 13(r). In some cases, legally independent entities are not permitted to disclose the details of their activities to us because of German privacy and data protection laws or the applicable banking laws and regulations. In such cases, voluntary disclosure of such details could violate such legal and/or regulatory requirements and subject the relevant entities to criminal prosecution or regulatory investigations.

PART III

Item 17: Financial Statements

Not applicable.

Item 18: Financial Statements

The Financial Statements of this Annual Report on Form 20-F consist of the Consolidated Financial Statements including Notes 1 to 43 thereto, which are set forth as Part 2 of the Annual Report 2020, and, as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates" thereto under "Basis of accounting – IFRS 7 disclosures", certain parts of the Management Report set forth as Part 1 of the Annual Report 2020.

The Consolidated Financial Statements as of and for the year ended December 31, 2020 have been audited by Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, as described in their "Report of Independent Registered Public Accounting Firm" included in the Annual Report 2020.

The Consolidated Financial Statements as of and for the years ended December 31, 2019 and 2018 have been audited by KPMG AG Wirtschaftsprüfungsgesellschaft, as described in their "Report of Independent Registered Public Accounting Firm" included in the Annual Report 2020.

Item 19: Exhibits

We have filed the following documents as exhibits to this document.

Exhibit number	Description of Exhibit
1.1	English translation of the Articles of Association of Deutsche Bank AG, furnished as Exhibit 3.2 to our Report on Form 6-K dated January 11, 2021 and incorporated by reference herein.
2.1	The total amount of long-term debt securities of us or our subsidiaries authorized under any instrument does not exceed 10 percent of the total assets of our Group on a consolidated basis. We hereby agree to furnish to the Commission, upon its request, a copy of any instrument defining the rights of holders of long-term debt of us or of our subsidiaries for which consolidated or unconsolidated financial statements are required to be filed.
2.2	Descriptions of securities registered under the Securities Exchange Act of 1934.
4.1	Equity Plan Rules 2017, furnished as Exhibit 4.6 to our 2016 Annual Report on Form 20-F and incorporated by reference herein.
4.2	Equity Plan Rules 2018, furnished as Exhibit 4.6 to our Registration Statement on Form S-8 No. 333-223301 and incorporated by reference herein.
4.3	Equity Plan Rules 2019, furnished as Exhibit 4.5 to our 2018 Annual Report on Form 20-F and incorporated by reference herein.
4.4	Equity Plan Rules 2020, furnished as Exhibit 4.5 to our 2019 Annual Report on Form 20-F and incorporated by reference herein.
4.5	Equity Plan Rules 2021.
4.6	Key Retention Plan Equity Plan Rules 2017, furnished as Exhibit 4.7 to our 2016 Annual Report on Form 20-F and incorporated by reference herein.
4.7	Restricted Share Plan Rules 2018, furnished as Exhibit 4.8 to our Registration Statement on Form S-8 No. 333-223301 and incorporated by reference herein.
4.8	Restricted Share Plan Rules 2019, furnished as Exhibit 4.8 to our 2018 Annual Report on Form 20-F and incorporated by reference herein.
4.9	Restricted Share Plan Rules 2020, furnished as Exhibit 4.9 to our 2019 Annual Report on Form 20-F and incorporated by reference herein.
4.10	Restricted Share Plan Rules 2021.
8.1	List of Subsidiaries.
12.1	Principal Executive Officer Certifications Required by 17 C.F.R. 240.13a-14(a).
12.2	Principal Financial Officer Certifications Required by 17 C.F.R. 240.13a-14(a).
13.1	Chief Executive Officer Certification Required by 18 U.S.C. Section 1350.
13.2	Chief Financial Officer Certification Required by 18 U.S.C. Section 1350.
14.1	Legal Opinion regarding confidentiality of related party customers.
15.1	Consent of Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft.
15.2	Consent of KPMG AG Wirtschaftsprüfungsgesellschaft.
101.1	Interactive Data File.

Signatures

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and has duly caused and authorized the undersigned to sign this annual report on its behalf.

Date: March 12, 2021

Deutsche Bank Aktiengesellschaft

/s/ CHRISTIAN SEWING

Christian Sewing
Chairman of the Management Board
Chief Executive Officer

/s/ JAMES VON MOLTKE

James von Moltke
Member of the Management Board
Chief Financial Officer

Deutsche Bank

Annual Report 2020

[Page intentionally left blank for SEC filing purposes]

Content

1 –
Combined Management Report

4	Operating and financial review
34	Outlook
41	Risks and opportunities
52	Risk report
166	Compensation report
214	Sustainability
215	Employees
219	Internal control over financial reporting
221	Information pursuant to section 315a (1) of the German Commercial Code and explanatory report
225	Corporate governance statement pursuant to sections 289f and 315d of the German Commercial Code
225	Standalone parent company information (HGB)

2 –
Consolidated Financial Statements

233	Consolidated statement of income
234	Consolidated statement of comprehensive income
235	Consolidated balance sheet
236	Consolidated statement of changes in equity
238	Consolidated statement of cash flows
240	Notes to the consolidated financial statements
274	Notes to the consolidated income statement
281	Notes to the consolidated balance sheet
333	Additional notes
391	Report of Independent Registered Public Accounting Firm

3 –
Corporate Governance Statement/ Corporate Governance Report

402	Management Board and Supervisory Board
417	Reporting and transparency
417	Related party transactions
418	Auditing and controlling
421	Compliance with the German Corporate Governance Code

4 –
Supplementary Information

427	Non-GAAP financial measures
435	Declaration of backing
436	Group five-year record
437	Imprint/ Publications

[Pages III to XXIII intentionally left blank for SEC filing purposes]

1-

Combined Management Report

4 Operating and financial review
4 Executive summary
7 Deutsche Bank Group
12 Results of operations
30 Financial position
32 Liquidity and capital resources
34 Outlook
41 Risks and opportunities
52 Risk report
54 Risk and capital overview
58 Risk and capital framework
68 Risk and capital management
111 Risk and capital performance
166 Compensation report
168 Management Board compensation report
199 Employee compensation report
211 Compensation system for Supervisory Board members
214 Sustainability
215 Employees

219 Internal control over financial reporting
221 Information pursuant to section 315a (1) of the German Commercial Code and explanatory report
225 Corporate governance statement pursuant to sections 289f and 315d of the German Commercial Code
225 Standalone parent company information (HGB)

Operating and financial review

The following discussion and analysis should be read in conjunction with the Consolidated Financial Statements and the related notes to them. Our Operating and financial review includes qualitative and quantitative disclosures on Segmental results of operations and entity wide disclosures on Net Revenue Components as required by International Financial Reporting Standard (IFRS) 8, “Operating Segments”. For additional Business Segment disclosure under IFRS 8 please refer to Note 4 “Business Segments and Related Information” of the Consolidated Financial Statements. Forward-looking statements are disclosed in our Outlook section.

Executive summary

The Global Economy

Economic growth (in %)[1]	2020[2]	2019	Main driver
Global Economy	**(3.3)**	3.0	The COVID-19 pandemic led to unprecedented GDP declines in almost all countries in 2020 with few historical precedents though recovery in many regions progressed faster than expected. In spite of this, the historic economic disruptions caused by the COVID-19 pandemic will still have lingering effects in the months ahead, and this may be protracted by widespread vaccination delays. By the end of 2020 resurgence of COVID-19 cases has been observed in some regions, and several countries have moved to re-impose containment measures.
Of which:			
Industrialized countries	(5.1)	1.6	Industrialized countries responded to the COVID-19 pandemic with extensive fiscal and monetary support measures. They benefited from comparatively low borrowing costs. Economic activity improved faster than expected after the slump in the first half of the year, although second wave of infections slowed the recovery.
Emerging markets	(2.1)	4.0	Emerging markets had a demanding and fairly divergent entry point into the COVID-19 crisis, in terms of policy capacity and medical infrastructure. As a result and as expected, the growth shock in some countries was more pronounced and persistent. However, the slump was followed by a strong recovery, albeit divergent across regions.
Eurozone Economy	**(6.8)**	1.3	Following a sharp contraction in the first half of 2020, the Eurozone economy rebounded strongly. Households and businesses were supported by expanded fiscal policy measures and the European Central Bank’s expansionary monetary policy, which provided favorable financial conditions. At the beginning of the fourth quarter, a second wave of COVID-19 infections gained momentum and required renewed containment measures. A trade deal between the EU and the UK was finally agreed in December.
Of which: German economy	(5.0)	0.6	The economic slump in the first half of 2020 was historic, but the end of most lockdown restrictions in the second quarter resulted in a stronger-than-expected recovery. In the wake of massive fiscal support measures, the short-time work scheme helped to curb the rise in unemployment and strengthened household incomes. Nevertheless, rising COVID-19 infections created headwinds for economic momentum in the last quarter of 2020.
U.S. Economy	**(3.5)**	2.2	The U.S. economy experienced a massive contraction in the second quarter, followed by a stronger than expected recovery. The unemployment rate climbed to new record highs, but the labor market improved again as the recovery progressed. A strong second wave of COVID-19 in combination with delayed additional fiscal stimulus constrained the recovery. The Federal Reserve Bank (the “Fed”) acted quickly and aggressively to keep funds flowing freely in money and credit markets.
Japanese Economy	**(4.9)**	0.3	Economic activity recovered faster than expected in the third quarter. During a second wave of COVID-19 infections in summer, the government did not declare a nationwide state of emergency and instead tried to support economic activity. The Bank of Japan kept an accommodative policy stance, while paying attention to policy side effects. With maintained fiscal stimulus, there was less pressure on the Bank of Japan to ease.
Asian Economy[3]	**(1.0)**	5.2	The rebound from the COVID-19-driven plunge in economic activity has been stronger than anticipated. China, Japan and other north Asian economies have been relatively successful in controlling the virus and returning to or toward pre-virus levels of activity. Asian central banks have reached the limits of conventional stimulus through interest rate cuts.
Of which: Chinese Economy	2.3	6.0	The continued V-shaped recovery led to an expansion of the Chinese economy in 2020, reflecting the robust industrial sector and a faster-than-expected recovery in services activity, with real estate and transport services outperforming. This mainly contributed to the global recovery.

[1] Annual Real GDP Growth (% YoY). Sources: National Authorities unless stated otherwise.
[2] Sources: Deutsche Bank Research.
[3] Including China, India, Indonesia, Republic of Korea, and Taiwan, ex Japan.

The Banking Industry

Growth year-over-year (in %)	Corporate Lending	Retail Lending	Corporate Deposits	Retail Deposits	Main driver
					Dec 31, 2020
Eurozone	5.5	3.2	18.6	7.5	Corporate loan growth was sharply higher year over year due to the recession, but has stabilized in recent months. Retail lending maintains momentum. The pandemic triggered a dramatic acceleration in corporate deposit growth, the strongest since the start of the monetary union in 1999, household deposits also expanded at the fastest pace since the financial crisis.
Of which: Germany	4.1	4.7	13.3	6.1	After an initial spike, corporate loan growth has slowed to its lowest level in three years as companies are flush with liquidity, and the strongest expansion in corporate deposits on record. Growth in retail loans overall and in mortgages particularly has plateaued at the highest level on record, while consumer lending is stagnating. Household deposits are rising the most since the financial crisis.
U.S.	7.4	(2.9)	21.4[1]	21.4[1]	Following an exceptional surge in corporate loans at the beginning of the pandemic, volumes are shrinking now and year over year growth has come down to near the pre-crisis pace. Over the course of the crisis, household lending turned from robust growth to the sharpest contraction since the aftermath of the financial crisis. The current crisis has also caused momentum in total deposits to accelerate from a substantial increase to extraordinary speed, where it has recently stabilized.
China	13.0	14.2	10.8	13.8	Retail lending (and deposit-taking) have maintained their dynamic expansion, while corporate lending (and deposit-taking) have picked up to a similar level.

[1] Total U.S. deposits as segment breakdown is not available.

2020 was a very strong year for investment banking. Debt capital markets broke previous records across the board, including with regard to investment grade, high yield and sovereign issuances. Similarly, equity capital markets reached an all-time high, driven by follow-on transactions and convertibles, while the Initial Public Offering (“IPO”) market was also very strong. Mergers & acquisitions (M&A) activity slumped in the first half of 2020 but posted the strongest second half of 2020 on record, leading to only modestly lower announced deal volumes in the full year compared to 2019 and still a solid result in total. Investment banking fee income surged to a new record, driven by the U.S. and China, whereas Europe lagged behind slightly. Equity trading volumes were far higher than a year ago, especially in the U.S., while fixed income trading saw a moderate uptick and derivatives were flat.

Deutsche Bank performance

Deutsche Bank reported a profit before tax of € 1 billion for the full year 2020, remained on track to achieve key milestones in its transformation journey, including a significant reduction in costs, and to build a firm foundation for sustainable profitability despite significant strains of the global COVID-19 pandemic. Significant profit growth in the re-focused Core Bank more than offset the costs of transformation-related effects together with elevated provisions for credit losses. Our businesses made considerable progress against its strategic objectives driving visible franchise improvements and revenue growth while maintaining strict cost and risk discipline. Strong capital and liquidity reserves enabled Deutsche Bank to resolutely support clients during 2020.

Deutsche Bank reported a net profit of € 612 million in 2020. Pre-tax profit was € 1 billion in 2020 after absorbing transformation charges of € 490 million and restructuring and severance expenses of € 688 million. The Core Bank, which excludes the Capital Release Unit, reported a pre-tax profit of € 3.2 billion in 2020 versus € 536 million in 2019. Adjusting for transformation charges of € 328 million, restructuring and severance expenses of € 671 million and specific revenue items of negative € 38 million, pre-tax profit in the Core Bank would have been € 4.2 billion, up 51 % versus 2019 on a comparable basis.

Revenues excluding specific items, Adjusted costs, Adjusted costs excluding transformation charges, Adjusted costs excluding transformation charges and expenses eligible for reimbursement related to Prime Finance, Adjusted profit (loss) before tax, Post-tax return on average tangible shareholders’ equity and Net Assets (adjusted) are non-GAAP financial measures. Please refer to “Supplementary Information (Unaudited): Non-GAAP Financial Measures” of this annual report for the definitions of such measures and reconciliations to the IFRS measures on which they are based.

Group Key Performance Indicators

Near-term operating performance	Status end of 2020	Status end of 2019
Post-tax return on average tangible shareholders' equity[1]	0.2 %	(10.9) %
Adjusted costs excl. transformation charges[2]	€ 19.9 bn	€ 21.6 bn
Employees[3]	84,659	87,597
Capital performance		
Common Equity Tier 1 capital ratio[4]	13.6 %	13.6 %
Leverage ratio (fully loaded)[4]	4.7 %	4.2 %

[1] Based on profit (loss) attributable to Deutsche Bank shareholders after AT1 coupon. For further information, please refer to "Supplementary Information: Non-GAAP Financial Measures" of this annual report.
[2] Excluding transformation charges but including expenses of € 360 million eligible for reimbursement related to Prime Finance. For further information, please refer to "Supplementary Information (Unaudited): Non-GAAP Financial Measures" of this annual report.
[3] Internal full-time equivalents.
[4] Further detail on the calculation of this ratio is provided in the Risk Report.

Net revenues were € 24 billion in 2020, an increase of € 846 million, or 4 % compared to 2019. The main drivers for the increase were significantly higher revenues in Investment Bank (IB) driven by benefits of underlying market activity and strong client engagement following our strategic re-positioning which more than offset the negative contribution from valuation and timing differences in Corporate and Others (C&O) and de-risking impacts in the Capital Release Unit (CRU). Net revenues in the Core Bank increased by 6 % to € 24.2 billion on a reported basis. Net revenues in the Corporate Bank (CB) of € 5.1 billion decreased 2 % year-on-year driven by interest rate headwinds partially offset by positive effects from deposit repricing. Net revenues in the Investment Bank (IB) increased by 32 % to € 9.3 billion in 2020, driven by higher revenues in Fixed Income & Currency (FIC) Sales & Trading as well as Origination & Advisory business reflecting supportive market conditions and market share gains in key areas. Full-year net revenues in the Private Bank (PB) were € 8.1 billion, down 1 % year-on-year reflecting a negative impact related to the sale of Postbank Systems AG. Excluding specific items, net revenues in the Private Bank remained essentially flat as growth in loan volumes and fee income, including benefits of deposit repricing measures partly compensated for the negative impacts from COVID-19 and interest rate headwinds. Net revenues in Asset Management (AM) of € 2.2 billion decreased by 4 % compared to the prior year due to absence of performance fees from Multi Asset and Alternatives recognized in 2019. Management fees remained stable as positive impacts of client flows and market development offset the industry-wide margin compression. Revenues in Corporate and Other (C&O) were negative € 548 million compared to positive € 147 million in the prior year reflecting an unfavorable impact from valuation and timing differences driven by the negative mark-to-market impact of hedging activities in connection with the bank's funding arrangements.

Provision for credit losses was € 1.8 billion in 2020, an increase of € 1.1 billion, or 148 %, compared to 2019, 41 basis points of average loans, for the full year. The increase was largely due to the effects of the COVID-19 pandemic on the economy.

Noninterest expenses were € 21.2 billion in 2020, a decrease of € 3.9 billion or 15 %, from 2019. The decrease includes absence of 2019 transformation-related goodwill impairments of € 1.0 billion as well as decreases in transformation charges by € 655 million, litigation expenses by € 315 million and restructuring and severance expenses by € 118 million. Adjusted costs excluding transformation charges were € 19.9 billion, down 8 % compared to the prior year and in line with our target of € 19.5 billion for 2020 if adjusted for € 360 million expenses eligible for reimbursement related to Prime Finance. The year-on-year decrease reflects workforce reductions of over 2,900 full-time equivalents during 2020 as well as disciplined expense management and positive impact of currency translation effects.

Profit before tax was € 1.0 billion in 2020 compared to a loss of € 2.6 billion in 2019, mainly driven by significant higher revenues in Investment Bank in 2020, absence of 2019 transformation-related goodwill impairments as well as decreases in transformation charges, litigation expenses, restructuring and severance expenses and in adjusted costs excluding transformation charges reflecting workforce reductions, disciplined expense management and positive impact of currency translation effects. These were partly offset by increased levels of provision for credit losses largely due to the effects of the COVID-19 pandemic on the economy.

Income tax expense was € 391 million in 2020, compared to € 2.6 billion in the prior year. The effective tax rate in 2020 was 39 %.

The Bank reported a net profit of € 612 million in 2020, compared to a loss of € 5.3 billion in 2019. This was driven by the abovementioned strong revenue performance in Investment Bank, absence of 2019 transformation-related goodwill impairments as well as decreases in transformation charges, litigation expenses, restructuring and severance expenses and in adjusted costs excluding transformation charges reflecting workforce reductions, disciplined expense management and positive impact of currency translation effects. Valuation adjustments on deferred tax assets decreased from € 2.8 billion in 2019 to € 37 million in 2020. These positive effects were partly offset by increased levels of provision for credit losses.

The Common Equity Tier 1 (CET 1) capital ratio was 13.6 % at the end of 2020, unchanged compared to 2019. The leverage ratio improved from 4.2 % in 2019 to 4.7% at the end of 2020 on a fully loaded basis. The leverage ratio on a phase-in basis improved from 4.3 % in 2019 to 4.8 % in 2020.

Deutsche Bank Group

Deutsche Bank: Our organization

Headquartered in Frankfurt am Main, Germany, we are the largest bank in Germany and one of the largest financial institutions in the world, as measured by total assets of € 1,325 billion as of December 31, 2020. As of that date, we had 84,659 full-time equivalent internal employees and operated in 59 countries with 1,891 branches, of which 68 % were located in Germany. We offer a wide variety of investment, financial and related products and services to private individuals, corporate entities and institutional clients around the world.

As of December 31, 2020, we were organized into the following segments:

- Corporate Bank (CB)
- Investment Bank (IB)
- Private Bank (PB)
- Asset Management (AM)
- Capital Release Unit (CRU)
- Corporate & Other (C&O)

We refer to CB, IB, PB, AM and C&O as our Core Bank.

In addition, Deutsche Bank has a country and regional organizational layer to facilitate a consistent implementation of global strategies.

We have operations or dealings with existing and potential customers in most countries in the world. These operations and dealings include working through:

- subsidiaries and branches;
- representative offices; and
- one or more representatives assigned to serve customers.

In 2018, we successfully completed the merger of Deutsche Bank Privat- und Geschäftskunden AG and Deutsche Postbank AG to form DB Privat- und Firmenkundenbank AG. Subsequently, in 2020, DB Privat- und Firmenkundenbank AG was merged into Deutsche Bank AG. The mergers are an important step towards significant cost reductions, mainly from eliminating infrastructure functions and governance tasks that were executed specifically for the individual legal entity. With this step, refinancing and administrative expenses will be reduced and corporate governance simplified. The mergers also lay the foundation for integrated technology solutions, including the migration of Postbank's systems to Deutsche Bank's IT infrastructure in 2022 and the decommissioning of legacy applications is planned for 2023. The aim is to simplify what has been a complex IT environment, resulting in greater efficiency and improved technology for a more seamless client experience.

Management Structure

The Management Board has structured the Group as a matrix organization, comprising Corporate Divisions and Infrastructure Functions operating in legal entities and branches across geographic locations.

The Management Board is responsible for the management of the company in accordance with the law, the Articles of Association and the Terms of Reference for the Management Board with the objective of creating sustainable value in the interests of the company. It considers the interests of shareholders, employees and other company-related stakeholders. The Management Board manages Deutsche Bank Group in accordance with uniform guidelines; it exercises general control over all Group companies.

The Management Board decides on all matters prescribed by law and the Articles of Association and ensures compliance with the legal requirements and internal guidelines (compliance). It also takes the necessary measures to ensure that adequate internal guidelines are developed and implemented. The Management Board's responsibilities include, in particular, the bank's strategic management and direction, the allocation of resources, financial accounting and reporting, control and risk management, as well as corporate control and a properly functioning business organization. The members of the Management Board are collectively responsible for managing the bank's business.

The allocation of functional responsibilities to the individual members of the Management Board is described in the Business Allocation Plan for the Management Board, which sets the framework for the delegation of responsibilities to senior management below the Management Board. The Management Board endorses individual accountability of senior position holders as opposed to joint decision-taking in committees. At the same time, the Management Board recognizes the importance of having comprehensive and robust information across all businesses in order to take well informed decisions and established, the “Group Management Committee” which aims to improve the information flow across the corporate divisions and between the corporate divisions and the Management Board along with the Infrastructure Committees, Business Executive Committees and Regional Committees. The Group Management Committee is a senior platform, which is not required by the German Stock Corporation Act, and is composed of all Management Board members, the most senior business representatives as well as the Head of Group Planning & Performance Management to exchange information and discuss business, growth and profitability.

Corporate Bank

Corporate Division Overview

The Corporate Bank (CB) comprises Global Transaction Banking as well as Commercial Banking in Germany. The division is primarily focused on serving corporate clients, including the German “Mittelstand”, larger and smaller sized commercial and business banking clients in Germany as well as multinational companies. It is also a partner to financial institutions with regards to certain Transaction Banking services. Global Transaction Banking consists of four businesses Cash Management, Trade Finance & Lending, Trust & Agency Services and Securities Services. Commercial Banking provides integrated expertise and a holistic product offering across the Deutsche Bank and Postbank brands in Germany.

Commencing from first quarter of 2021, the Corporate Bank will report revenues based on three client segments: Institutional Client Services, Corporate Treasury Services and Business Banking. Institutional Client Services comprises of Cash Management for Institutional clients, Trust and Agency Services, as well as Securities Services. Corporate Treasury Services provides the full suite of Trade Finance and Lending, as well as Corporate Cash Management for large and mid-sized corporate clients. Business Banking covers small corporates and entrepreneur clients and offers a largely standardized product suite.

In CB, we have made one significant capital divestiture since January 1, 2018. In early October 2017, Deutsche Bank Group signed a binding agreement to sell its Alternative Fund Services business, a unit of the Global Transaction Banking division, to Apex Group Limited. The transaction was completed in the second quarter of 2018.There have been no significant capital expenditures since January 1, 2018.

Products and Services

The Corporate Bank is a global provider of risk management solutions, cash management, lending, trade finance, trust and agency services as well as securities services. Focusing on the finance departments of corporate and commercial clients and financial institutions in Germany and across the globe, our holistic expertise and global network allows us to offer integrated solutions.

In addition to the Corporate Bank product suite, our Coverage teams provide clients with access to the expertise of the Investment Bank.

Distribution Channels and Marketing

The global Coverage function of the Corporate Bank focuses on international Large Corporate Clients and is organized into two units: Coverage and Risk Management Solutions. Coverage includes multi-product generalists covering headquarter level and subsidiaries via global, regional and local coverage teams. Risk Management Solutions includes Foreign Exchange, Emerging Markets and Rates product specialists. This unit is managed regionally in APAC, Americas and EMEA to ensure close connectivity to our clients.

Commencing from the first quarter 2021, Corporate clients in Germany will be served out of two units: Corporate Treasury Services and Business Banking. Corporate Treasury Services covers mid and large corporate clients across two brands, Deutsche Bank and Postbank, and offers the whole range of solutions across cash, trade financing, lending and risk management for the corporate treasurer. Business Banking covers small corporates and entrepreneur clients and offers a largely standardized product suite and selected contextual-banking partner offerings (e.g. accounting solutions).

Investment Bank

Corporate Division Overview

The Investment Bank (IB) combines Deutsche Bank's Fixed Income, Currency (FIC) Sales & Trading and, Origination & Advisory, as well as Deutsche Bank Research. It focuses on its traditional strengths in financing, advisory, fixed income and currencies, bringing together wholesale banking expertise across coverage, risk management, sales and trading, Investment Banking and infrastructure. This enables IB to align resourcing and capital across our client and product perimeter to effectively serve the Bank's clients.

In IB we made one significant capital divestiture since January 1, 2018. In April 2019, Tradeweb closed its initial public offering. Tradeweb is a financial services company that builds and operates over-the-counter (OTC) marketplaces for trading fixed income products and derivatives. Deutsche Bank Group has had an economic interest in Tradeweb since 2007 and participated in the initial public offering and several subsequent secondary offerings, alongside other large bank shareholders by selling a portion of its holdings. There have been no significant capital expenditures since January 1, 2018.

Products and Services

FIC Sales & Trading brings together an institutional sales force and research with trading and structuring expertise across Foreign Exchange, Rates, Credit and Emerging Markets. The FIC Sales & Trading business enables Deutsche Bank to respond to increasing automation, regulatory expectations as well as client demand for standardization and transparency in transaction execution across fixed income and currencies.

Origination and Advisory is responsible for our debt origination business, mergers and acquisitions (M&A), and a focused equity advisory and origination platform. It is comprised of regional and industry-focused coverage teams, co-led from the bank's hubs in Europe, the U.S. and Asia Pacific, that facilitates the delivery of a range of financial products and services to the bank's corporate clients.

Distribution Channels and Marketing

Coverage of the IB's clients is provided by the Institutional Client Group, which houses our debt sales team, and the Investment Banking Coverage team within Origination & Advisory. Both teams work in conjunction with our Risk Management Solutions team in the Corporate Bank, covering capital markets and Treasury solutions. The close cooperation between these groups help to create enhanced synergies leading to increased cross selling of products/solutions to our clients.

Private Bank

Corporate Division Overview

In the Private Bank (PB), we serve personal and private clients, wealthy individuals, entrepreneurs and families. In our international businesses we also focus on commercial clients. We are organized along two business divisions: Private Bank Germany and International Private Bank. Our product range includes payment and account services, credit and deposit products as well as investment advice including a range of Environmental, Social and Governance (ESG) products. We offer our customers both the coverage of all basic financial needs as well as individual, tailor-made solutions.

PB made one significant capital divestiture since January 1, 2018. In November 2020, Deutsche Bank AG signed an agreement to sell its share in Postbank Systems AG to Tata Consultancy Services (TCS). The transaction was closed after regulatory and governmental approvals on December 31, 2020. There have been no significant capital expenditures since January 1, 2018.

Products and Services

In our Private Bank Germany division, we pursue a differentiated, customer-focused approach with two strong and complementary main brands: Deutsche Bank and Postbank. With our Deutsche Bank brand we focus on providing our private customers with banking and financial products and services that include sophisticated and individual advisory solutions. The focus of our Postbank brand remains on providing our retail customers with standard products and daily retail banking services. In cooperation with Deutsche Post DHL AG, we also offer postal and parcel services in the Postbank brand branches.

In the International Private Bank we also have a differentiated, customer-focused approach with two client segments. The "IPB Personal Banking" client segment covers the retail and affluent customers as well as small businesses in Italy, Spain, Belgium and India, providing them with banking and other financial services. The client segment "Private Banking and Wealth Management" covers high-net-worth and ultra-high-net-worth clients globally as well as small and medium-sized corporate clients and private banking clients in Italy, Spain, Belgium and India. We support our clients in planning, managing and investing their wealth, financing their personal and business interests and servicing their institutional and corporate needs. In addition, we offer a range of Environmental, Social and Governance (ESG) products across our discretionary portfolio management and advisory platform. These products enable our clients to invest in line with their values and according to specified ESG strategies, scores and exclusionary criteria. We also provide institutional-type services for sophisticated clients and complement our offerings by closely collaborating with the Investment Bank, the Corporate Bank and Asset Management.

Distribution Channels and Marketing

We pursue an omni-channel approach and our customers can flexibly choose between different possibilities to access our services and products.

Our distribution channels include our branch networks in Private Bank Germany and International Private Bank, supported by customer call centers and self-service terminals as well as advisory centers of the Deutsche Bank brand in Germany, Italy and Spain, which supplement our branch network and our digital offerings. We also offer online and mobile banking including our Digital Platform, through which we provide a transaction platform for banking, brokerage and self-services, combined with a multi-mobile offering for smartphones and tablets. We also have collaborations with self-employed financial advisors and other sales and cooperation partners. For our private banking and wealth management client segment we have a distinct client coverage team approach with Relationship and Investment Managers supported by Client Service Executives assisting clients with wealth management services and open-architecture products. In addition, in Germany, Deutsche Oppenheim Family Offices AG provides family office services, discretionary funds and advisory solutions.

The expansion of digital capabilities remains a strong focus across our businesses. We will continue to optimize our omni-channel mix in the future in order to provide our customers with the most convenient access to our products and services.

Asset Management

Corporate Division Overview

With over € 790 billion of assets under management as of December 31, 2020, the asset management division (DWS) is one of the world’s leading asset management organizations. DWS serves a diverse client base of retail and institutional investors worldwide, with a strong presence in our home market in Germany. These clients include government institutions, corporations and foundations as well as individual investors.

Deutsche Bank retains 79.49% ownership interest in DWS and asset management remains a core business for the group. The shares of DWS are listed on the Frankfurt stock exchange.

There have been no significant capital expenditures or divestitures since January 1, 2018, other than the partial initial public offering (IPO) of DWS Group GmbH & Co. KGaA.

Products and Services

DWS’s investment offerings span all major asset classes including equity, fixed income, cash and multi asset as well as alternative investments. Our alternative investments include real estate, infrastructure, private equity, liquid real assets and sustainable investments. We also offer a range of passive investments. In addition, DWS’s solution strategies are targeted to client needs that cannot be addressed by traditional asset classes alone. Such services include insurance and pension solutions, asset-liability management, portfolio management solutions, asset allocation advisory, structuring and overlay. Our deep environmental, social and governance focus complement each other when creating targeted solutions for our clients.

Distribution Channels and Marketing

DWS’s product offerings are distributed across EMEA (Europe, Middle East and Africa), the Americas and Asia Pacific through a single global distribution network. DWS also leverages third-party distribution channels, including Deutsche Bank Group.

Capital Release Unit

The Capital Release Unit (CRU) was created in July 2019. The CRU’s principal objectives are to liberate capital consumed by low return assets and businesses that earn insufficient returns or activities that are no longer core to our strategy by liberating capital in an economically rational manner. In addition, the CRU is focused on reducing costs.

BNP Paribas and Deutsche Bank have signed a master transaction agreement to provide continuity of service to Deutsche Bank’s Prime Finance and Electronic Equities clients. Under the agreement Deutsche Bank will continue to operate the platform until clients can be migrated to BNP Paribas, which is expected to occur by the end of 2021.

In addition, in the restated financials of the CRU division, we recorded the following significant capital divestitures since January 1, 2018:

In December 2017, the Group entered into an agreement to sell its Polish Private & Commercial Banking business, excluding its foreign currency denominated retail mortgage portfolio, together with DB Securities S.A., to Santander Bank Polska. The transaction was successfully completed in the fourth quarter 2018.

In March 2018, Deutsche Bank Group entered into an agreement to sell the retail banking business in Portugal to ABANCA Corporación Bancaria S.A. The parties closed the transaction in the first half of 2019.

Infrastructure

The Infrastructure functions perform control and service activities for the businesses, including tasks relating to Group-wide, cross-divisional resource-planning, steering and control, as well as tasks relating to risk, liquidity and capital management.

The Infrastructure functions are organized into the following areas of responsibility of our senior management:
- Finance, Tax, Treasury, Investor Relations
- Risk, Compliance, Anti Financial Crime
- Legal, Group Governance, Data Privacy, Government & Regulatory Affairs
- Technology, Data and Innovation
- Operations and Corporate Services
- HR and Transformation

Infrastructure also includes Communications & Corporate Social Responsibility and Group Audit which report to the Chief Executive Officer.

Costs originating in the Infrastructure functions are currently allocated to the corporate divisions based on planned allocations, with the exception of technology development costs which will be charged to Divisions based on actual expenditures during 2021. The current cost allocation methodology is being replaced with a Driver based cost management (DBCM) framework. This new methodology links the services provided by the Infrastructure functions to the businesses which consume them thereby creating enhanced transparency regarding the drivers for the costs which are being charged and facilitate the identification of cost reduction opportunities.

Significant Capital Expenditures and Divestitures

Information on each Corporate Division's significant capital expenditures and divestitures for the last three financial years has been included in the above descriptions of the Corporate Divisions.

Since January 1, 2020, there have been no public takeover offers by third parties with respect to our shares and we have not made any public takeover offers for our own account in respect of any other company's shares.

Results of operations

Consolidated results of operations

You should read the following discussion and analysis in conjunction with the Consolidated Financial Statements.

Condensed Consolidated Statement of Income

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	 in %	2019 increase (decrease) from 2018 in € m.	 in %
Net interest income	11,548	13,749	13,316	(2,201)	(16)	433	3
Provision for credit losses	1,792	723	525	1,068	148	199	38
Net interest income after provision for credit losses	**9,756**	13,026	12,791	(3,269)	(25)	235	2
Commissions and fee income[1]	9,424	9,520	10,039	(96)	(1)	(519)	(5)
Net gains (losses) on financial assets/liabilities at fair value through profit or loss[1]	2,332	193	1,209	2,139	N/M	(1,015)	(84)
Net gains (losses) on financial assets at fair value through other comprehensive income	323	260	317	63	24	(57)	(18)
Net gains (losses) on financial assets at amortized cost	324	0	2	324	N/M	(2)	(78)
Net income (loss) from equity method investments	120	110	219	10	9	(109)	(50)
Other income (loss)	(61)	(668)	215	607	(91)	(883)	N/M
Total noninterest income	**12,463**	9,416	12,000	3,047	32	(2,585)	(22)
Total net revenues[2]	**22,219**	22,441	24,791	(222)	(1)	(2,350)	(9)
Compensation and benefits	10,471	11,142	11,814	(671)	(6)	(672)	(6)
General and administrative expenses	10,259	12,253	11,286	(1,993)	(16)	966	9
Impairment of goodwill and other intangible assets	0	1,037	0	(1,037)	(100)	1,037	N/M
Restructuring activities	485	644	360	(159)	(25)	283	79
Total noninterest expenses	**21,216**	25,076	23,461	(3,860)	(15)	1,615	7
Profit (loss) before tax	**1,003**	(2,634)	1,330	3,637	N/M	(3,965)	N/M
Income tax expense (benefit)	391	2,630	989	(2,239)	(85)	1,641	166
Profit (loss)	**612**	(5,265)	341	5,876	N/M	(5,606)	N/M
Profit (loss) attributable to noncontrolling interests	129	125	75	4	3	50	68
Profit (loss) attributable to Deutsche Bank shareholders and additional equity components	483	(5,390)	267	5,873	N/M	(5,657)	N/M
Profit (loss) attributable to additional equity components	382	328	319	53	16	9	3
Profit (loss) attributable to Deutsche Bank shareholders	101	(5,718)	(52)	5,820	N/M	(5,666)	N/M

N/M – Not meaningful
[1] For further detail please refer to Note 1 “Significant Accounting Policies and Critical Accounting Estimates” of this annual report.
[2] After provision for credit losses.

Net Interest Income

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	 in %	2019 increase (decrease) from 2018 in € m.	 in %
Total interest and similar income	17,954	25,208	24,718	(7,254)	(29)	489	2
Total interest expenses	6,405	11,458	11,402	(5,053)	(44)	56	0
Net interest income	**11,548**	13,749	13,316	(2,201)	(16)	433	3
Average interest-earning assets[1]	920,259	956,362	990,670	(36,104)	(4)	(34,307)	(3)
Average interest-bearing liabilities[1]	685,772	714,716	745,904	(28,944)	(4)	(31,188)	(4)
Gross interest yield[2]	1.83 %	2.53 %	2.39 %	(0.70) ppt	(28)	0.14 ppt	6
Gross interest rate paid[3]	0.78 %	1.47 %	1.38 %	(0.69) ppt	(47)	0.09 ppt	6
Net interest spread[4]	1.06 %	1.07 %	1.00 %	(0.01) ppt	(1)	0.06 ppt	6
Net interest margin[5]	1.25 %	1.44 %	1.34 %	(0.18) ppt	(13)	0.09 ppt	7

ppt – Percentage points
Prior period comparatives for gross interest income and gross interest expense have been restated. € 59 million and € 75 million for year ended December 31, 2019 and December 31, 2018 were restated. Additionally, € 124 million was reclassified from trading Income to interest expense for year ended December 31, 2018.

[1] Average balances for each year are calculated in general based upon month-end balances. Prior period comparatives for 2019 have been restated.
[2] Gross interest yield is the average interest rate earned on our average interest-earning assets.
[3] Gross interest rate paid is the average interest rate paid on our average interest-bearing liabilities.
[4] Net interest spread is the difference between the average interest rate earned on average interest-earning assets and the average interest rate paid on average interest-bearing liabilities.
[5] Net interest margin is net interest income expressed as a percentage of average interest-earning assets.

2020

Net interest income was € 11.5 billion in 2020 compared to € 13.7 billion in 2019, a decrease of € 2.2 billion, or 16 %. The decrease was primarily driven by lower interest rates and unfavorable movements in foreign exchange rates. These negative effects were partly offset by improved volumes and client flows in Investment Bank as well as positive effects from deposit repricing in Corporate Bank. Interest income included € 43 million related to EU government grants under the Targeted Longer-Term Refinancing Operations II (TLTRO II) program in 2020, whereas 2019 included € 93 million under this program. In addition, interest income for the year 2020 included € 86 million, which were related to EU government grants under the Targeted Longer-Term Refinancing Operations III (TLTRO III) program. Overall, the bank's net interest margin declined by 18 basis points compared to the prior year to 1.25 % in 2020.

2019

Net interest income was € 13.7 billion in 2019 compared to € 13.3 billion in 2018, an increase of € 433 million, or 3 %. The increase was primarily driven by a € 24 billion, or 6%, growth in average loan volumes, lower volumes of negative yielding deposits with banks and central banks, mainly in Germany, as well as a favorable interest rate development in the U.S. in the first half of 2019. These positive effects were partly offset by lower interest income associated with discontinued business activities following the execution of the bank's transformation strategy announced in July 2019. Interest income included € 93 million related to EU government grants under the Targeted Longer-Term Refinancing Operations II (TLTRO II) program, which remained unchanged compared to 2018. Overall, the bank's net interest margin improved by 9 basis points compared to the prior year to 1.44 % in 2019.

Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss

in € m.				2020 increase (decrease) from 2019		2019 increase (decrease) from 2018	
(unless stated otherwise)	2020	2019	2018	in € m.	in %	in € m.	in %
Trading income	2,097	197	(72)	1,900	N/M	269	N/M
Net gains (losses) on non-trading financial assets mandatory at fair value through profit or loss	276	377	212	(102)	(27)	165	78
Net gains (losses) on financial assets/liabilities designated at fair value through profit or loss	(40)	(381)	1,069	341	(89)	(1,449)	N/M
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss	2,332	193	1,209	2,139	N/M	(1,015)	(84)

N/M – Not meaningful
€ 124 million was reclassified from trading income to net interest income for year ended December 31, 2018.

2020

Net gains on financial assets/liabilities at fair value through profit or loss were € 2.3 billion in 2020, compared to € 193 million in 2019. The increase of € 2.1 billion was primarily driven by mark-to-market impacts on derivatives as well as positive impacts from overall strategic repositioning in IB resulting in strong client flows and benefits from increased market volatility. This was further benefited by positive effects from interest rate hedges in C&O, which did not fully compensate the negative effects of the lower interest rates in Net Interest Income. This overall increase was partly offset by a negative impact from de-risking in Capital Release Unit (CRU).

2019

Net gains on financial assets/liabilities at fair value through profit or loss were € 193 million in 2019, compared to € 1.2 billion in 2018. The decrease of € 1.0 billion, or 84 %, was primarily driven by the non-recurrence of revenues associated with discontinued business activities following the execution of the bank's transformation strategy announced in July 2019, negative mark-to-market impacts as well as de-risking in the Capital Release Unit (CRU).

Net Interest Income and Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss

Our trading and risk management activities include interest rate instruments and related derivatives. Under IFRS, interest and similar income earned from trading instruments and financial instruments designated at fair value through profit or loss (i.e., coupon and dividend income) and the costs of funding net trading positions are part of net interest income. Our trading activities can periodically shift income between net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss depending on a variety of factors, including risk management strategies.

In order to provide a more business-focused discussion, the following table presents net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss by corporate division.

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	2020 increase (decrease) from 2019 in %	2019 increase (decrease) from 2018 in € m.	2019 increase (decrease) from 2018 in %
Net interest income	11,548	13,749	13,316	(2,201)	(16)	433	3
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss	2,332	193	1,209	2,139	N/M	(1,015)	(84)
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	**13,880**	13,942	14,524	(62)	(0)	(582)	(4)
Breakdown by Corporate Division:[1]							
Corporate Bank	2,935	2,709	2,562	226	8	147	6
Investment Bank	7,196	5,444	5,273	1,751	32	171	3
Private Bank	4,623	4,946	5,017	(323)	(7)	(71)	(1)
Asset Management	(98)	87	(88)	(185)	N/M	175	N/M
Capital Release Unit	(33)	155	1,442	(188)	N/M	(1,287)	(89)
Corporate & Other	(742)	602	318	(1,343)	N/M	284	89
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	**13,880**	13,942	14,524	(62)	(0)	(582)	(4)

N/M – Not meaningful
Prior year segmental information presented in the current structure.
€ 124 million was reclassified from trading income to net interest income for year ended December 31, 2018.
[1] This breakdown reflects net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss only. For a discussion of the corporate divisions' total revenues by product please refer to Note 4 "Business Segments and Related Information".

2020

Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss were € 13.9 billion in 2020, which remained stable compared to 2019. This was primarily due to mark-to-market impacts on derivatives as well as positive impacts from overall strategic repositioning in IB resulting in strong client flows and benefits from increased market volatility, deposit repricing measures in CB and PB and growth in loan volumes in PB. In C&O, mark-to-market impacts from interest rate hedging activities did not fully compensate the negative effects of the lower interest rates. This was further offset by continued negative impact of the low interest rate environment on deposit margins in PB and de-risking costs in CRU. Net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss in AM also decreased compared to the prior year reflecting an unfavorable impact from the valuation of consolidated guaranteed mutual funds which has a corresponding offset in Other Income.

2019

Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss were € 13.9 billion in 2019, compared to € 14.5 billion in 2018, a decrease of € 582 million, or 4 %. The decrease was primarily driven by the CRU reflecting the non-recurrence of revenues associated with discontinued business activities, negative mark-to-market impacts as well as de-risking costs. In PB, total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss decreased versus the prior year mainly due to the continued negative impact of the low interest rate environment on deposit margins and negative mark-to-market impacts from interest rate hedging activities. This was offset by positive mark-to-market impacts in C&O and by growth in loan volumes in IB, CB and PB. Net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss in AM also increased compared to the prior year reflecting a favorable impact from the valuation of consolidated guaranteed mutual funds which has a corresponding offset in Other Income.

Provision for Credit Losses

2020

Provision for credit losses was € 1.8 billion in 2020, an increase of € 1.1 billion, or 148% compared to 2019. This increase was primarily driven by negative impacts from COVID-19 related impairments. The net increase of provisions for credit losses on performing assets includes a management overlay to flatten the high amplitudes of the standard model on forward looking information in the COVID-19 crisis and an additional management overlay to account for remaining uncertainties in the macro-economic outlook. Provision for credit losses was 41 basis points of average loans reflecting the high quality of the bank's loan book. Please refer to the sections "Segment Results of Operations" and "Risk Report" for further details on provision for credit losses.

2019

Provision for credit losses was € 723 million in 2019, an increase of € 199 million, or 38 %, compared to 2018. The return to a more normalized level was a result of the overall weakened macroeconomic environment with a number of specific events across all segments as well as lower releases and recoveries compared to the prior year. Provision for credit losses in 2019 included a net positive effect of € 18 million arising from changes in estimates of € 183 million, stemming from model refinements and the annual recalibration of the forward looking information in our IFRS 9 model, which offset a negative impact of € 165 million from the update of macroeconomic variables. Provision for credit losses was 17 basis points of average loans reflecting the bank's strong underwriting standards and risk management as well as the low-risk nature of our portfolios. Please refer to the sections "Segment Results of Operations" and "Risk Report" for further details on provision for credit losses.

Remaining Noninterest Income

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	in %	2019 increase (decrease) from 2018 in € m.	in %
Commissions and fee income[1]	9,424	9,520	10,039	(96)	(1)	(519)	(5)
Net gains (losses) on financial assets at fair value through other comprehensive income	323	260	317	63	24	(57)	(18)
Net gains (losses) on financial assets at amortized cost	324	0	2	324	N/M	(2)	(78)
Net income (loss) from equity method investments	120	110	219	10	9	(109)	(50)
Other income (loss)	(61)	(668)	215	607	(91)	(883)	N/M
Total remaining noninterest income	**10,130**	9,222	10,792	908	10	(1,570)	(15)
[1] includes:							
Commissions and fees from fiduciary activities:							
Commissions for administration	347	327	303	19	6	24	8
Commissions for assets under management	3,208	3,298	3,130	(90)	(3)	168	5
Commissions for other securities business	341	317	290	24	7	27	9
Total	**3,896**	3,943	3,724	(47)	(1)	219	6
Commissions, broker's fees, mark-ups on securities underwriting and other securities activities:							
Underwriting and advisory fees	1,625	1,501	1,629	125	8	(128)	(8)
Brokerage fees	637	637	936	0	0	(299)	(32)
Total	**2,262**	2,137	2,565	125	6	(427)	(17)
Fees for other customer services	3,266	3,440	3,751	(174)	(5)	(311)	(8)
Total commissions and fee income	**9,424**	9,520	10,039	(96)	(1)	(519)	(5)

N/M – Not meaningful

Commissions and fee income

2020

Commissions and fee income was € 9.4 billion in 2020, a decrease of € 96 million, or 1 %, compared to 2019. The decrease included € 174 million lower fees for other customer services in Corporate Bank mainly driven by reduced economic activities. Commissions for assets under management decreased by € 90 million in AM mainly due to absence of performance fees from Multi Asset and Alternatives recognized in 2019. Underwriting and advisory fees increased by € 125 million mainly driven by increased activity and market share gains in debt market as well as an increase in global fee pool and issuances in equities. Brokerage fees have remained flat year-over-year mainly as the negative impact from discontinued business activities in CRU following the execution of the bank's transformation strategy announced in July 2019 was fully compensated by higher commission and fee income in PB from investment and insurance products including benefits form re-pricing measures.

2019

Commissions and fee income was € 9.5 billion in 2019, a decrease of € 519 million, or 5 %, compared to the prior year. The decrease included € 427 million lower underwriting and advisory fees as well as brokerage fees, primarily in the CRU, associated with discontinued business activities following the execution of the bank's transformation strategy announced in July 2019. Fees for other customer services declined by € 311 million primarily driven by a reduction in the global fee pool and issuances, lower leveraged loan fees and capital markets fees. These decreases were partly offset by higher commissions for assets under management in AM, mainly driven by a non-recurring alternatives and multi asset performance fee recognized in 2019.

Net gains (losses) on financial assets at fair value through other comprehensive income

2020

Net gains on financial assets at fair value through other comprehensive income were € 323 million in 2020, an increase of € 63 million, or 24 % compared to 2019 driven mainly by higher gains from the sale of bonds and securities from our strategic liquidity reserve.

2019

Net gains on financial assets at fair value through other comprehensive income were € 260 million in 2019, a decrease of € 57 million, or 18 % compared to 2018 driven mainly by lower gains from the sale of municipal bonds in the U.S., government bonds and securities from our strategic liquidity reserve.

Net gains (losses) on financial assets at amortized cost

2020

Net gains (losses) on financial assets at amortized cost were € 324 million in 2020 and nil in 2019, driven by sale of assets out of Hold-to-collect portfolio in 2020 as part of our strategy for managing the interest rate risk in the banking book.

2019

Net gains (losses) on financial assets at amortized cost were nil in 2019 and € 2 million in 2018, which primarily included the impact from the early redemption of certain bonds.

Net income (loss) from equity method investments

2020

Net gains from equity method investments were € 120 million in 2020 compared to € 110 million in 2019, an increase of € 10 million, or 9 %.

2019

Net gains from equity method investments were € 110 million in 2019 compared to € 219 million in 2018, a decrease of € 109 million, or 50 %, primarily due to the absence of a prior year gain from the valuation of an investment and lower equity pickup from Huarong Rongde Asset Management Company Limited.

Other income (loss)

2020

Other income (loss) was € (61) million in 2020 compared to € (668) million in 2019. The improvement was driven by positive impacts associated with hedge ineffectiveness along with fair value hedge accounting adjustments. Furthermore, other income includes a positive impact from a valuation adjustment on liabilities of guaranteed mutual funds in AM that offsets a negative impact from the valuation of consolidated guaranteed mutual funds in net gains (losses) on financial assets/liabilities at fair value through profit or loss.

2019

Other income (loss) was € (668) million in 2019 compared to € 215 million in 2018. The decrease was driven by the impact of hedge ineffectiveness together with bond sales and fair value hedge accounting adjustments following the unwinding of the municipal bond portfolio in the U.S. in 2018. The decrease was also impacted by the absence of a prior year gain from the sale of real estate assets in 2018 and lower positive impacts from workout activities related to legacy positions in Sal. Oppenheim in 2019. Furthermore, other income includes a negative impact from a valuation adjustment on liabilities of guaranteed mutual funds in AM that offsets a positive impact from the valuation of consolidated guaranteed mutual funds in net gains (losses) on financial assets/liabilities at fair value through profit or loss.

Noninterest Expenses

in € m.				2020 increase (decrease) from 2019		2019 increase (decrease) from 2018	
(unless stated otherwise)	2020	2019	2018	in € m.	in %	in € m.	in %
Compensation and benefits	10,471	11,142	11,814	(671)	(6)	(672)	(6)
General and administrative expenses[1]	10,259	12,253	11,286	(1,993)	(16)	966	9
Impairment of goodwill and other intangible assets	0	1,037	0	(1,037)	(100)	1,037	N/M
Restructuring activities	485	644	360	(159)	(25)	283	79
Total noninterest expenses	**21,216**	25,076	23,461	(3,860)	(15)	1,615	7

N/M – Not meaningful

[1] includes:							
Information Technology[2]	3,862	5,011	4,043	(1,150)	(23)	968	24
Occupancy, furniture and equipment expenses[3]	1,724	1,693	1,698	31	2	(5)	(0)
Regulatory, tax & insurance[3,4]	1,407	1,440	1,570	(33)	(2)	(130)	(8)
Professional services[5]	982	1,143	1,323	(161)	(14)	(180)	(14)
Banking Services and outsourced operations[5]	962	967	960	(5)	(0)	6	1
Market Data and Research services[2]	376	421	415	(46)	(11)	7	2
Travel expenses	76	256	288	(180)	(70)	(32)	(11)
Marketing expenses	174	251	299	(77)	(31)	(48)	(16)
Other expenses[6]	696	1,071	690	(374)	(35)	381	55
Total general and administrative expenses	**10,259**	12,253	11,286	(1,993)	(16)	966	9

[2] Prior year numbers have been restated to reflect the shift of telecommunications expenses from (communications) and market data & research services expenses to information technology expenses

[3] Prior year numbers have been restated to reflect the shift of insurance premium expenses from occupancy, furniture and equipment expenses to regulatory, tax & insurance expenses

[4] Includes bank levy of € 633 million in 2020, € 622 million in 2019 and € 690 million in 2018.

[5] Prior year numbers have been restated to reflect the shift of other outsourced operations expenses from professional services expenses to banking services and outsourced operations expenses

[6] Includes litigation related expenses of € 158 million in 2020, € 473 million in 2019 and € 88 million in 2018. See Note 27 “Provisions”, for more detail on litigation

Compensation and benefits

2020

Compensation and benefits decreased by € 671 million, or 6 %, to € 10.5 billion in 2020 compared to € 11.1 billion in 2019. The decrease was primarily driven by lower fixed compensation expenses resulting from workforce reductions.

2019

Compensation and benefits decreased by € 672 million, or 6 %, to € 11.1 billion in 2019 compared to € 11.8 billion in 2018. The decrease was primarily driven by lower fixed and variable compensation expenses which reflects overall affordability and performance at the Group level and the reduction in headcount.

General and administrative expenses

2020

General and administrative expenses decreased by € 2 billion, or 16 %, to € 10.3 billion in 2020 compared to € 12.3 billion in 2019. The decrease was driven by € 655 million lower transformation charges as 2019 included higher software impairments and higher litigation expenses. Apart from these, general and administrative expenses further decreased compared to the prior year following a disciplined cost management with reductions across all major cost categories including IT expenses due to lower software amortization and a reduction of IT service expenses, professional service fees mainly reflecting a reduction in external workforce expenses as well as travel and marketing expenses.

2019

General and administrative expenses increased by € 966 million, or 9 %, to € 12.3 billion in 2019 compared to € 11.3 billion in 2018. The increase was driven by € 1.1 billion transformation charges mainly related to the impairment of software and real estate assets, as well as higher litigation expenses. Excluding these effects, general and administrative expenses decreased compared to the prior year following a disciplined cost management with reductions across all major cost categories except IT expenses, which remained essentially stable during 2019, reflecting Deutsche Bank's commitment to continue spending on technology and controls in line with its transformation strategy.

Impairment of goodwill and other intangible assets

2020

No impairment charges were reported for 2020. Impairment of goodwill and other intangible assets of € 1.0 billion was reported in 2019. The announcement of the strategic transformation in July 2019 triggered the impairment review of Deutsche Bank's goodwill. A worsening macro-economic outlook, including interest rate curves, industry-specific market growth corrections, as well as the impact related to the implementation of the transformation strategy resulted in the full impairment of the Wealth Management goodwill of € 545 million in PB and the GTB & CF goodwill of € 492 million in CB in the second quarter 2019.

2019

Impairment of goodwill and other intangible assets was € 1.0 billion in 2019 as aforementioned.

Restructuring

2020

Expenses for restructuring activities were € 485 million in 2020 compared to € 644 million in 2019. The decrease was primarily due to higher costs related to the execution of the bank's transformation strategy in 2019.

2019

Expenses for restructuring activities were € 644 million in 2019 compared to € 360 million in 2018. The increase was primarily related to the execution of the bank's transformation strategy which led to new provisions in all segments in 2019.

Income Tax Expense

2020

Income tax expense in 2020 was € 391 million compared to € 2.6 billion in 2019. The effective tax rate in 2020 was 39 %.

2019

Income tax expense in 2019 was € 2.6 billion compared to € 989 million in 2018. The effective tax rate of (100) % (2018: 74 %) mainly resulted from € 2.8 billion transformation related deferred tax assets valuation adjustments and non-deductible goodwill impairments.

Net profit (loss)

2020

The net profit in 2020 was € 612 million, compared to a net loss of € 5.3 billion in the prior year. The increase in net profit was primarily driven by strong revenue performance in Investment Bank, absence of 2019 transformation-related goodwill impairments as well as decreases in transformation charges, litigation expenses, restructuring and severance expenses and in adjusted costs excluding transformation charges reflecting workforce reductions, disciplined expense management and positive impact of currency translation effects. Valuation adjustments on deferred tax assets decreased from € 2.8 billion in 2019 to € 37 million in 2020. These positive effects were partly offset by increased levels of provision for credit losses.

2019

The net loss was € 5.3 billion in 2019, compared to a net income of € 341 million in the prior year, primarily driven by the aforementioned € 2.8 billion transformation related deferred tax assets valuation adjustments, € 1.0 billion impairment of goodwill, € 1.1 billion of transformation charges, mainly impairments of software and real estate assets, as well as restructuring and severance expenses of € 805 million.

Segment Results of operations

The following is a discussion of the results of our business segments. See Note 4 “Business Segments and Related Information” to the consolidated financial statements for information regarding:

- changes in the format of our segment disclosure and
- the framework of our management reporting systems.

The Group’s segment reporting follows the organizational structure as reflected in its internal management reporting systems, which are the basis for assessing the financial performance of the business segments and for allocating resources to the business segments. The criterion for segmentation into divisions is our organizational structure as it existed at December 31, 2020. Prior period comparables were restated due to changes in the divisional structure.

							2020
in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total Consolidated
Net revenues[1]	5,145	9,283	8,126	2,229	(225)	(548)	24,011
Provision for credit losses	366	688	711	2	29	(3)	1,792
Noninterest expenses							
Compensation and benefits	1,064	1,906	2,884	740	168	3,709	10,471
General and administrative expenses	3,126	3,493	4,242	764	1,774	(3,140)	10,259
Impairment of goodwill and other intangible assets	0	0	0	0	0	0	0
Restructuring activities	28	14	413	22	5	3	485
Total noninterest expenses	4,218	5,413	7,539	1,527	1,947	572	21,216
Noncontrolling interests	0	11	0	157	(0)	(169)	0
Profit (loss) before tax	561	3,171	(124)	544	(2,201)	(948)	1,003
Cost/income ratio	82%	58%	93%	68%	N/M	N/M	88%
Assets[2]	237,497	573,673	296,637	9,453	197,667	10,035	1,324,961
Additions to non-current assets	10	4	485	32	0	2,891	3,423
Risk-weighted assets	57,288	128,487	77,074	9,997	34,415	21,690	328,951
Leverage exposure (fully loaded)[3]	273,795	476,261	307,746	4,695	71,726	29,243	1,078,268
Average allocated shareholders' equity	9,904	22,943	11,521	4,760	6,205	(23)	55,308
Post-tax return on average shareholders' equity[4]	3 %	9 %	(1) %	8 %	(26) %	N/M	0 %
Post-tax return on average tangible shareholders' equity[4]	4 %	10 %	(2) %	21 %	(27) %	N/M	0 %
[1] includes:							
Net interest income	2,882	3,325	4,475	1	61	804	11,548
Net income (loss) from equity method investments	3	22	23	63	9	1	120
[2] includes:							
Equity method investments	69	399	60	304	67	4	901

N/M – Not meaningful

[3] The Group leverage exposure is presented excluding certain Euro-based exposures facing Eurosystem central banks based on the ECB-decision (EU) 2020/1306 and after having obtained permission from the ECB. The segmental leverage exposures are presented without that deduction.

[4] The post-tax return on average tangible shareholders’ equity and average shareholders’ equity at the Group level reflects the reported effective tax rate for the Group, which was 39 % for the year ended December 31, 2020. For the post-tax return on average tangible shareholders’ equity and average shareholders’ equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 28 % for the year ended December 31, 2020. For further information, please refer to “Supplementary Information (Unaudited): Non-GAAP Financial Measures” of this annual report.

2019							
in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total Consolidated
Net revenues[1]	5,244	7,019	8,206	2,332	217	147	23,165
Provision for credit losses	284	109	344	1	(14)	0	723
Noninterest expenses							
Compensation and benefits	1,073	1,983	2,990	832	359	3,906	11,142
General and administrative expenses	3,165	4,237	4,481	851	2,898	(3,380)	12,253
Impairment of goodwill and other intangible assets	492	0	545	0	0	0	1,037
Restructuring activities	137	169	126	29	143	40	644
Total noninterest expenses	4,867	6,389	8,142	1,711	3,400	566	25,076
Noncontrolling interests	0	20	(0)	152	1	(173)	0
Profit (loss) before tax	92	502	(279)	468	(3,170)	(247)	(2,634)
Cost/income ratio	93 %	91 %	99 %	73 %	N/M	N/M	108 %
Assets[2]	228,663	501,774	270,334	9,936	259,224	27,743	1,297,674
Additions to non-current assets	9	1	215	27	0	1,069	1,322
Risk-weighted assets	58,808	116,552	74,032	9,527	45,874	19,223	324,015
Leverage exposure (fully loaded)	270,647	432,254	282,575	4,643	126,905	51,016	1,168,040
Average allocated shareholders' equity	10,464	23,052	11,729	4,821	10,105	0	60,170
Post-tax return on average shareholders' equity[3]	0 %	1 %	(2) %	7 %	(23) %	N/M	(10) %
Post-tax return on average tangible shareholders' equity[3]	0 %	1 %	(3) %	18 %	(24) %	N/M	(11) %
[1] includes:							
Net interest income	2,633	2,707	4,804	(39)	85	3,559	13,749
Net income (loss) from equity method investments	3	32	14	49	12	1	110
[2] includes:							
Equity method investments	66	412	82	276	90	4	929

N/M – Not meaningful
Prior year segmental information presented in the current structure
[3] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was (100) % for the year ended December 31, 2019. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 28 % for the year ended December 31, 2019. For further information, please refer to "Supplementary Information (Unaudited): Non-GAAP Financial Measures" of this annual report.

2018							
in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total Consolidated
Net revenues[1]	5,278	7,561	8,520	2,187	1,911	(142)	25,316
Provision for credit losses	142	70	349	(1)	(36)	1	525
Noninterest expenses							
Compensation and benefits	1,063	2,175	3,059	787	547	4,183	11,814
General and administrative expenses	2,787	4,134	4,448	929	2,742	(3,754)	11,286
Impairment of goodwill and other intangible assets	0	0	0	0	0	0	0
Restructuring activities	32	199	49	19	62	(1)	360
Total noninterest expenses	3,882	6,509	7,556	1,735	3,351	428	23,461
Noncontrolling interests	0	24	(0)	85	1	(109)	0
Profit (loss) before tax	1,254	958	616	368	(1,404)	(461)	1,330
Cost/income ratio	74 %	86 %	89 %	79 %	N/M	N/M	93 %
Assets[2]	216,163	458,464	270,150	10,030	370,090	23,240	1,348,137
Additions to non-current assets	13	2	303	43	1	1,286	1,647
Risk-weighted assets[3]	60,305	122,662	67,180	10,365	72,133	17,789	350,432
Leverage exposure (fully loaded)	257,921	413,631	287,760	5,044	280,638	27,933	1,272,926
Average allocated shareholders' equity	10,927	22,629	12,397	4,837	11,704	115	62,610
Post-tax return on average shareholders' equity[4]	8 %	2 %	3 %	5 %	(9) %	N/M	(0) %
Post-tax return on average tangible shareholders' equity[4]	9 %	3 %	4 %	14 %	(9) %	N/M	(0) %
[1] includes:							
Net interest income	2,419	2,209	4,905	(51)	416	3,417	13,316
Net income (loss) from equity method investments	3	157	2	41	10	6	219
[2] includes:							
Equity method investments	63	406	78	240	87	5	879

N/M – Not meaningful
Prior year segmental information presented in the current structure
[3] Risk-weighted assets are based upon CRR/CRD 4 fully-loaded.
[4] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was 74 % for the year ended December 31, 2018. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 28 % for the year ended December 31, 2018. For further information, please refer to "Supplementary Information (Unaudited): Non-GAAP Financial Measures" of this annual report

Corporate Bank

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	2020 increase (decrease) from 2019 in %	2019 increase (decrease) from 2018 in € m.	2019 increase (decrease) from 2018 in %
Net revenues							
Global Transaction Banking	3,698	3,810	3,908	(112)	(3)	(98)	(3)
Commercial Banking	1,447	1,433	1,370	14	1	63	5
Total net revenues	5,145	5,244	5,278	(98)	(2)	(34)	(1)
Provision for credit losses	366	284	142	82	29	142	100
Noninterest expenses							
Compensation and benefits	1,064	1,073	1,063	(9)	(1)	10	1
General and administrative expenses	3,126	3,165	2,787	(40)	(1)	378	14
Impairment of goodwill and other intangible assets	0	492	0	(492)	N/M	492	N/M
Restructuring activities	28	137	32	(108)	(79)	105	N/M
Total noninterest expenses	4,218	4,867	3,882	(649)	(13)	986	25
Noncontrolling interests	0	0	0	0	N/M	0	N/M
Profit (loss) before tax	561	92	1,254	469	N/M	(1,162)	(93)
Total assets (in € bn)[1]	237	229	216	9	4	13	6
Loans (gross of allowance for loan losses, in € bn)	114	119	114	(5)	(4)	5	5
Employees (full-time equivalent)	7,368	7,712	7,653	(345)	(4)	60	1

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances

2020

Profit before tax of the Corporate Bank was € 561 million for the full year 2020, up from € 92 million in 2019. This increase was mainly driven by the non-recurrence of an impairment of goodwill in the prior year and lower restructuring activities. Adjusted for transformation charges, restructuring and severance expenses, goodwill impairments and specific revenue items, profit before tax was € 714 million, 20% below the prior year, mainly driven by lower revenues and higher credit loss provisions in 2020.

Full year net revenues were € 5.1 billion, or € 5.2 billion excluding a loss on sale of Postbank Systems AG, 2% lower year-over-year despite a challenging interest rate environment and other macro-economic headwinds.

Global Transaction Banking net revenues of € 3.7 billion were €112 million or 3% lower compared to € 3.8 billion in the prior year, as interest rate headwinds were partly offset by deposit repricing, balance sheet management initiatives and ECB tiering as well as portfolio rebalancing actions. Cash Management revenues were slightly lower, as interest rate and currency translation headwinds were partly offset by deposit repricing, ECB tiering and balance sheet management initiatives. Trade Finance and Lending revenues were essentially flat year-on-year. Securities Services and Trust and Agency Services revenues were significantly lower, mainly due to interest rate reductions in the U.S. and in Asia.

Commercial Banking net revenues of € 1.4 billion increased by 1% or 2% excluding a € 16 million loss on sale of Postbank Systems AG compared to 2019, as interest rate headwinds were offset, mainly from deposit re-pricing.

Provision for credit losses was €366 million, up € 82 million year-on-year, mainly as a result of idiosyncratic events.

Non-interest expenses were € 4.2 billion, 13% lower compared to € 4.9 billion in the prior year, which included an impairment of goodwill in the second quarter and higher restructuring charges. Adjusted costs ex-transformation charges of € 4.0 billion were down 2% year-on-year, reflecting non-compensation cost reduction initiatives, workforce reduction and the positive impact of currency translation effects.

2019

Profit before tax of the Corporate Bank was € 92 million for the full year 2019, compared to € 1.3 billion in the prior year. The year-on-year decrease was driven by higher general and administrative expenses, including transformation charges, an impairment of goodwill as well as higher restructuring costs. Adjusted for transformation charges, restructuring and severance expenses, goodwill impairments and specific revenue items, profit before tax was € 894 million in 2019.

Net revenues for the full year 2019 were € 5.2 billion, 1% lower compared to the prior year.

Global Transaction Banking reported net revenues of € 3.8 billion in 2019, a decrease of € 98 million, or 3 %, compared to € 3.9 billion in the prior year. Cash Management revenues were essentially flat as the negative impact from a lower interest rate environment was largely compensated by the positive effects from a shift in the currency mix of deposits from Euro to higher-yielding US dollar deposits as well as the implementation of ECB tiering in the fourth quarter of 2019. Trade Finance revenues increased slightly as growth in the flow business following a good performance specifically in Asia and Germany offset a slowdown in structured products. Revenues in Trust & Agency Services slightly increased driven by higher net interest

revenues and commissions and fees. Securities Services revenues were significantly lower as a result of a change in business perimeter following the disposal of the Alternative Funds Services business including a related gain on disposal in 2018, further non-recurring items in 2018 and the exit of the Equities business in 2019.

Net revenues in Commercial Banking were € 1.4 billion, an increase of € 63 million or 5 % compared to the prior year driven by a slightly higher net interest income following growth in loan volume and higher commission and fee income mainly as a result of repricing measures. These effects more than offset the adverse impact of the low interest rate environment.

Provision for credit losses was € 284 million, an increase from € 142 million in 2018, a year with an exceptionally low level of provisions by historical standards. The increase reflects the weakened macroeconomic environment and geopolitical uncertainties with a small number of specific events and lower releases and recoveries.

Noninterest expenses in 2019 were € 4.9 billion, an increase of € 986 million or 25 % compared to € 3.9 billon in the prior year, driven by the execution of the transformation strategy, which triggered an impairment of goodwill, higher restructuring costs and transformation charges mainly related to IT impairments in 2019. Furthermore, costs were negatively impacted by changes in internal cost allocations following the resegmentation in 2019.

Adjusted costs excluding transformation charges were € 4.1 billion, up 7 % year-on-year. The increase reflects higher spend on controls and technology, as well as the aforementioned changes in allocation of costs of internal services.

Investment Bank

				2020 increase (decrease) from 2019		2019 increase (decrease) from 2018	
in € m. (unless stated otherwise)	2020	2019	2018	in € m.	in %	in € m.	in %
Net revenues							
Fixed Income, Currency (FIC) Sales & Trading	7,088	5,525	5,644	1,563	28	(119)	(2)
Debt Origination	1,542	1,119	1,146	423	38	(27)	(2)
Equity Origination	379	149	197	231	155	(48)	(24)
Advisory	277	370	458	(93)	(25)	(88)	(19)
Origination & Advisory	2,198	1,638	1,801	560	34	(163)	(9)
Other	(3)	(144)	117	142	(98)	(261)	N/M
Total net revenues	9,283	7,019	7,561	2,265	32	(542)	(7)
Provision for credit losses	688	109	70	579	N/M	38	54
Noninterest expenses							
Compensation and benefits	1,906	1,983	2,175	(76)	(4)	(192)	(9)
General and administrative expenses	3,493	4,237	4,134	(744)	(18)	103	2
Impairment of goodwill and other intangible assets	0	0	0	0	N/M	0	N/M
Restructuring activities	14	169	199	(155)	(92)	(30)	(15)
Total noninterest expenses	5,413	6,389	6,509	(975)	(15)	(121)	(2)
Noncontrolling interests	11	20	24	(8)	(41)	(4)	(18)
Profit (loss) before tax	3,171	502	958	2,669	N/M	(456)	(48)
Total assets (in € bn)[1]	574	502	458	72	14	43	9
Loans (gross of allowance for loan losses, in € bn)	69	75	65	(6)	(8)	10	16
Employees (full-time equivalent)	4,258	4,351	4,623	(93)	(2)	(273)	(6)

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances

2020

Profit before tax was € 3.2 billion in 2020, an increase of € 2.7 billion compared to the prior year. The increase was mainly driven by significantly higher revenues, as well as lower general and administrative expenses and restructuring, partly offset by significantly higher provisions for credit losses.

Net revenues were € 9.3 billion in 2020, an increase of € 2.3 billion or 32 % compared to 2019.

Revenues in FIC Sales & Trading were € 7.1 billion, an increase of € 1.6 billion or 28 %. Rates revenues were significantly higher, with the business benefitting from the impact of strategic repositioning, in addition to strong client flows and market conditions. Foreign Exchange revenues were significantly higher, driven by the increased market volatility, specifically in the first half of the year and strength in derivatives. Revenues from Credit Trading were lower driven by the adverse credit market conditions in the first quarter, though the business recovered well in the second half of the year. Revenues in Emerging Markets were significantly higher, with all three regions up versus the prior year. Revenues in Financing were lower, with the business also affected by the adverse credit market in the first quarter, in addition to lower revenues from sectors impacted by the COVID-19 pandemic.

Origination and Advisory net revenues were € 2.2 billion, a € 560 million or 34 % increase compared to the prior year. Debt Origination revenues were € 1.5 billion, significantly higher than the prior year driven principally by increased activity and market share gains in Investment Grade Debt. Equity Origination revenues of € 379 million were also significantly higher, reflecting a record industry fee pool and DB's strength in the Special Purpose Acquisition Company market. Advisory revenues of € 277 million were significantly lower in a reduced fee pool environment which was impacted by the COVID-19 pandemic.

Other revenues were negative € 3 million, compared to negative € 144 million in 2019. The year–on-year increase was materially driven by a small gain of € 6 million relating to the impact of DVA on certain derivative liabilities versus a loss of € 140 million in 2019.

Provision for credit losses was € 688 million or 89 basis points of average loans, an increase of € 579 million or 74 basis points primarily driven by COVID-19 related impairments.

Noninterest expenses in 2020 were € 5.4 billion, a decrease of € 975 million or 15 % compared to the prior year, reflecting lower adjusted costs, reduced restructuring and severance and lower litigation. Adjusted costs excluding transformation charges decreased by 9 % driven by disciplined expense management and lower service cost allocations.

2019

Profit before tax was € 502 million in 2019, a decrease of € 456 million or 48 % compared to the prior year. The decrease was mainly driven by lower revenues, higher provisions for credit losses as well as higher general and administrative expenses, partly offset by lower compensation and benefits. The setup of the division during the second half of 2019 following Deutsche Bank's strategic transformation announcement created a short-term negative revenue impact and drove transformation charges that impacted the full year profitability. Adjusted for transformation charges, restructuring and severance expenses as well as specific revenue items, profit before tax in 2019 was € 929 million, compared to € 924 million in 2018.

Net revenues were € 7.0 billion in 2019, a decrease of € 543 million or 7 % compared to 2018.

Revenues in FIC Sales & Trading were € 5.5 billion, a decrease of € 119 million or 2 %. Rates revenues were slightly lower, with the business impacted in the short term by the operational set up of the division. Foreign Exchange revenues were lower, largely driven by the continued low market volatility. Credit revenues were higher driven by a strong performance in flow trading and increased net interest income due to higher loan balances, partially offset by lower revenues in distressed debt. Revenues in Emerging Markets were higher as a result of significantly improved performance in flow trading.

Origination and Advisory net revenues were € 1.6 billion, a € 163 million or 9 % decrease compared to the prior year. Debt Origination revenues were € 1.1 billion, essentially flat compared to the prior year as higher revenues in both High Yield and Investment Grade bonds were offset by a decline in leveraged loans. Advisory revenues of € 370 million were lower in a reduced fee pool environment. Equity Origination revenues of € 149 million were significantly lower, reflecting our repositioned franchise.

Other revenues were negative € 144 million, compared to a gain of € 117 million in 2018. The year–on-year decrease was driven by a loss of € 140 million (2018: a gain of € 126 million) relating to the impact of DVA on certain derivative liabilities.

Provision for credit losses was € 109 million, an increase of € 38 million compared to the prior year, however, provisions remained at 15 basis points of average loans, or relatively low levels, reflecting the bank's strong underwriting standards and risk management.

Noninterest expenses in 2019 were € 6.4 billion, a decrease of € 121 million or 2 % compared to the prior year, despite € 211 million of transformation charges. Adjusted costs excluding transformation charges decreased by 6 % driven by reduction in front office employees and related compensation, lower service cost allocations and disciplined management of non-compensation costs.

Private Bank

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	in %	2019 increase (decrease) from 2018 in € m.	in %
Net revenues:							
Private Bank Germany	4,992	5,070	5,320	(78)	(2)	(251)	(5)
International Private Bank	3,134	3,137	3,200	(3)	(0)	(64)	(2)
IPB Personal Banking[1]	830	869	888	(39)	(5)	(19)	(2)
IPB Private Banking[2] and Wealth Management	2,304	2,267	2,312	37	2	(44)	(2)
Total net revenues	8,126	8,206	8,520	(80)	(1)	(314)	(4)
Of which:							
Net interest income	4,475	4,804	4,905	(329)	(7)	(101)	(2)
Commissions and fee income	3,048	2,865	2,788	183	6	77	3
Remaining income	603	537	827	66	12	(290)	(35)
Provision for credit losses	711	344	349	367	107	(5)	(2)
Noninterest expenses:							
Compensation and benefits	2,884	2,990	3,059	(106)	(4)	(69)	(2)
General and administrative expenses	4,242	4,481	4,448	(240)	(5)	34	1
Impairment of goodwill and other intangible assets	0	545	0	(545)	N/M	545	N/M
Restructuring activities	413	126	49	287	N/M	76	155
Total noninterest expenses	7,539	8,142	7,556	(603)	(7)	586	8
Noncontrolling interests	0	(0)	(0)	1	N/M	(0)	N/M
Profit (loss) before tax	(124)	(279)	616	155	(56)	(895)	N/M
Total assets (in € bn)[3]	297	270	270	26	10	0	0
Loans (gross of allowance for loan losses, in € bn)	237	227	216	10	5	11	5
Assets under Management (in € bn)[4]	493	482	446	11	2	36	8
Net flows (in € bn)	16	4	(2)	12	N/M	7	N/M
Employees (full-time equivalent)	29,945	31,599	32,437	(1,654)	(5)	(838)	(3)

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Including small businesses in Italy, Spain and India.
[2] Including small & mid caps in Italy, Spain and India.
[3] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[4] We define assets under management as (a) assets we hold on behalf of customers for investment purposes and/or (b) client assets that are managed by us. We manage assets under management on a discretionary or advisory basis, or these assets are deposited with us. Deposits are considered assets under management if they serve investment purposes. In the Private Bank Germany, IPB Personal Banking and IPB Private Banking, this includes time deposits and savings deposits. In IPB Wealth Management, it is assumed that all customer deposits are held with us primarily for investment purposes.

2020

In 2020, the Private Bank continued the implementation of its strategic agenda. Results were impacted by transformation-related effects of € 642 million including € 520 million restructuring and severance expenses as well as € 122 million transformation charges, which were the main reason for a reported pre-tax loss of € 124 million in 2020. Adjusted for these transformation-related effects and for specific revenue items as mentioned in the Non-GAAP Financial Measures section of this report, profit before tax was € 493 million in 2020 compared to adjusted profit before tax of € 507 million in the prior year. Higher provision for credit losses and higher litigation charges were largely offset by cost reductions.

Net revenues of € 8.1 billion in 2020 declined by € 80 million, or 1 %, compared to 2019, mainly reflecting lower positive contributions from specific revenue items which included in 2020 a negative impact of € 88 million euros related to the sale of Postbank Systems AG. Excluding specific revenue items, revenues remained at prior year level as growth in volumes and higher commission and fee income compensated headwinds from the low interest rate environment and the COVID-19 pandemic.

In the Private Bank Germany, net revenues of € 5.0 billion declined by € 78 million, or 2 %, year-on-year. Revenues excluding the impact related to Postbank Systems AG were stable compared to 2019. Ongoing headwinds from lower interest rates and COVID-19 were offset by growth in loan revenues and higher commission and fee income from investment products, insurance products and from repricing measures.

Net revenues in the International Private Bank (IPB) of € 3.1 billion remained essentially flat compared to the prior year. IPB's client segment Private Banking and Wealth Management achieved net revenues of € 2.3 billion in 2020, an increase of € 37 million, or 2 %, compared to 2019. Headwinds from lower interest rates and COVID-19 and negative impacts from foreign currency translation were more than offset by business growth in investment products and lending reflecting benefits from previous hiring. Net revenues in the Personal Banking client segment declined by € 39 million, or 5 %, to € 830 million in 2020. The decline was mainly due to negative impacts from deposit margin compression and COVID-19.

Provision for credit losses amounted to € 711 million in 2020 compared to € 344 million in 2019. The increase was mainly due to negative impacts from the COVID-19 pandemic as well as higher benefits in 2019 from portfolio sales and model refinements. Furthermore the increase was also related to the growth in the loan business.

Noninterest expenses of € 7.5 billion declined by € 603 million, or 7 %, compared to 2019. The positive year-on-year impact from the non-recurrence of a goodwill impairment of € 545 million in 2019 was largely offset by € 296 million higher transformation-related effects driven by higher restructuring and severance expenses reflecting initiatives related to the execution of the strategic agenda as well as € 104 million higher litigation charges.

Adjusted costs excluding transformation charges of € 6.8 billion reduced by € 459 million, or 6 %, compared to 2019. The decline was mainly attributable to cost reduction initiatives and synergies from efficiency measures including workforce reductions. PB's internal workforce declined to below 30,000 at year end 2020.

Assets under Management of € 493 billion increased by € 11 billion compared to December 31, 2019. The increase was mainly attributable to € 16 billion net inflows and € 6 billion market appreciation, in part offset by a € 9 billion negative impact from foreign exchange rate movements. Net inflows of € 16 billion during 2020 were almost entirely in investment products.

2019

In 2019, Private Bank reported a loss before tax of € 279 million, compared to a profit before tax of € 616 million in 2018. The decrease was attributable to lower gains from asset sales as well as an aggregate impact of approximately € 900 million related to the execution of the transformation strategy in 2019. This included an impairment of € 545 million for the full write-down of Wealth Management's goodwill, transformation charges of € 190 million, comprised mainly of software and real estate impairments as well as restructuring and severance costs. Adjusted for these charges as well as specific revenue items, profit before tax improved, despite ongoing headwinds from the low interest rate environment, from € 360 million in 2018 to € 507 million in 2019, supported by volume growth in loans and assets under management as well as incremental cost synergies related to the merger of the German businesses completed in 2018.

Net revenues were € 8.2 billion in 2019 a decrease of € 314 million, or 4 %, compared to 2018 driven by the absence of a € 156 million gain from a property sale in 2018 and lower positive impacts from workout activities in Sal. Oppenheim. Excluding these items, revenues remained essentially flat compared to 2018 as growth in volumes and fee income partly compensated the headwinds from the low interest rate environment.

Net revenues in the Private Bank Germany of € 5.1 billion declined by € 251 million, or 5 %, year-on-year mainly following lower asset sale gains including a € 156 million gain from a property sale in 2018. The ongoing headwinds from the low interest rate environment were partly offset by growth in loan revenues. Lower revenues from postal services subsequent to a contract alignment were more than offset by higher revenues from investment products as well as higher fee income from current accounts reflecting repricing measures.

In the International Private Bank (IPB), net revenues of € 3.1 billion declined by € 64 million, or 2 %, compared to 2018 driven by a € 107 million lower impact from workout activities related to legacy positions in Sal. Oppenheim. Net revenues in IPB Private Banking and Wealth Management of € 2.3 billion declined by € 44 million, or 2 %, driven by the aforementioned lower impact from net revenues relating to Sal. Oppenheim workout activities. Excluding this effect, net revenues remained essentially flat compared to the prior year period. Higher loan revenues as well as higher fee income following higher assets under management compensated the negative impact from the ongoing low interest rate environment on deposits. Net revenues in IPB Personal Banking of € 869 million declined by € 19 million, or 2 %. Higher loan revenues compensated the negative impact from the ongoing low interest rate environment. Revenue growth in investment products and repricing measures related to current accounts largely offset the negative impact of a change in the treatment of loan fees in Italy and the non-recurrence of benefits from smaller asset sales.

Provision for credit losses of € 344 million, or 15 basis points of loans, remained essentially flat compared to 2018 reflecting the conservative nature of our portfolios, strong underwriting standards and also a positive impact from portfolio sales and model refinements. These positive impacts offset the increase in provision for credit losses in line with the growth in our loan businesses.

Noninterest expenses were € 8.1 billion, an increase of € 586 million, or 8 %, compared to 2018. The increase included the aforementioned aggregated impact of approximately € 900 million related to the impairment of goodwill, transformation related charges as well as restructuring and severance expenses.

Adjusted costs excluding transformation charges were € 7.3 billion, a decrease of 3 % compared to 2018, reflecting strict cost discipline as well as executed reorganization measures including incremental cost synergies related to the merger of the German businesses.

Assets under Management of € 482 billion increased by € 36 billion compared to December 31, 2018. The increase was mainly attributable to € 31 billion of market appreciation, € 4 billion net inflows and € 2 billion of foreign exchange rate movements. Net inflows of € 4 billion during 2019 were primarily in investment products.

Asset Management

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	2020 increase (decrease) from 2019 in %	2019 increase (decrease) from 2018 in € m.	2019 increase (decrease) from 2018 in %
Net revenues							
Management Fees	2,136	2,141	2,115	(5)	(0)	26	1
Performance and transaction fees	90	201	91	(111)	(55)	111	122
Other	3	(10)	(19)	13	N/M	9	(48)
Total net revenues	**2,229**	2,332	2,187	(103)	(4)	146	7
Provision for credit losses	**2**	1	(1)	1	59	2	N/M
Noninterest expenses							
Compensation and benefits	740	832	787	(92)	(11)	45	6
General and administrative expenses	764	851	929	(87)	(10)	(78)	(8)
Impairment of goodwill and other intangible assets	0	0	0	0	N/M	0	N/M
Restructuring activities	22	29	19	(6)	(22)	10	51
Total noninterest expenses	**1,527**	1,711	1,735	(185)	(11)	(23)	(1)
Noncontrolling interests	**157**	152	85	5	4	68	80
Profit (loss) before tax	**544**	468	368	76	16	99	27
Total assets (in € bn)[1]	9	10	10	(0)	(5)	(0)	(1)
Assets under Management (in € bn)	793	768	664	25	3	103	16
Net flows (in € bn)	30	25	(23)	5	N/M	48	N/M
Employees (full-time equivalent)	3,926	3,925	4,022	1	0	(97)	(2)

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.

2020

In 2020 the market conditions were impacted by the global COVID-19 pandemic. All major equity indices traded at significantly lower levels in the second quarter, with a recovery in most markets by year end, and with the U.S. dollar depreciating against the Euro. Overall net flows were positive combined with a growth in Assets under Management.

In 2020 AM reported a profit before tax of € 544 million, an increase of € 76 million or 16 % compared to € 468 million in the prior year, primarily driven by lower expenses. Adjusted for transformation charges as well as restructuring and severance expenses, profit before tax was € 586 million in 2020 compared to € 539 million in 2019.

Net revenues were € 2.2 billion, a decrease of € 103 million or 4 % compared to the prior year.

Management fees were € 2.1 billion in 2020, essentially flat compared to the prior year as effects from the positive market performance and growth in Passive were partly offset by declining management fee margins.

Performance and transaction fees of € 90 million in 2020 were significantly lower by € 111 million or 55 % compared to the full year 2019, predominantly due a non-recurring Alternatives and a Multi Asset performance fee recognized in 2019.

Other revenues were € 3 million compared to negative € 10 million in 2019 with both years negatively impacted by the fair value of guaranteed products, combined with lower investment income, higher contribution from investment in Harvest Fund Management Co Limited and lower treasury funding charges in 2020.

Noninterest expenses were € 1.5 billion, a decrease of € 185 million, or 11 % compared to the prior year, driven by a decline in variable compensation, and efficiency initiatives combined with pandemic related savings such as travel and entertainment and marketing costs. Noninterest expenses were also lower as the prior year included transformation charges relating to a real estate impairment.

Adjusted costs excluding transformation charges were € 1.5 billion in 2020, a decrease of € 159 million, or 10 % compared to € 1.6 billion in 2019 as lower compensation expenses were supported by lower non-compensation costs.

Assets under Management were € 793 billion, an increase of € 25 billion, or 3 %, versus December 31, 2019. The increase was driven by € 30 billion net inflows and € 24 billion related to favorable market development, mainly coming from the second half of 2020, partly offset by negative € 26 billion foreign exchange effects. The net inflows were primarily driven by Passive and Cash, and further supported by Alternatives. ESG dedicated funds continued to attract strong net inflows.

The following table provides the development of Assets under Management during 2020, broken down by product type as well as the respective management fee margins:

in € bn.	Active Equity	Active Fixed Income	Active Multi Asset	Active SQI	Active Cash	Passive	Alternatives	Assets under Management
Balance as of December 31, 2019	96	234	58	71	57	156	96	768
Inflows	21	47	16	19	503	85	12	703
Outflows	(19)	(54)	(18)	(22)	(483)	(68)	(8)	(673)
Net Flows	2	(7)	(2)	(3)	20	17	4	30
FX impact	(2)	(9)	(0)	(0)	(4)	(7)	(3)	(26)
Performance	3	7	1	1	0	13	(2)	24
Other	(1)	(6)	1	1	2	0	(1)	(3)
Balance as of December 31, 2020	97	220	59	69	75	179	93	793
Management fee margin (in bps)	72	13	34	28	4	19	50	28

2019

In 2019 the market conditions were less volatile compared to 2018, helping to improve investor risk appetite. All major equity indices traded at higher levels in 2019 and the U.S. dollar appreciated against the Euro. Overall market conditions were more favorable compared to 2018, with positive effects on net inflows and significant growth in Assets under Management.

In 2019 AM reported a profit before tax of € 468 million, an increase of € 99 million or 27 % compared to € 368 million in the prior year, primarily driven by significantly higher performance fees. Adjusted for transformation charges as well as restructuring and severance expenses, profit before tax was € 539 million in 2019 compared to € 413 million in 2018.

Net revenues were € 2.3 billion, an increase of € 146 million or 7 % compared to the prior year.

Management fees were € 2.1 billion in 2019, essentially flat compared to the prior year as effects from the positive market performance and growth in Passive and Alternatives were partly offset by declining management fee margins.

Performance and transaction fees of € 201 million in 2019 significantly increased by € 111 million or 122 % compared to the full year 2018, mainly driven by a non-recurring Alternatives and a Multi Asset performance fee recognized in 2019.

Other revenues were € 10 million negative compared to negative € 19 million in 2018 with both years impacted by the fair value of guarantees for the guaranteed products.

Noninterest expenses were € 1.7 billion, a decrease of € 23 million, or 1 % compared to the prior year. General and administrative expenses were lower driven by a significant decline in professional service fees, marketing cost and the absence of litigation expenses relating to a sold legacy business, partially offset by transformation charges relating to a real estate impairment. Compensation and benefits were higher mainly driven by performance related compensation.

Adjusted costs excluding transformation charges were € 1.6 billion in 2019, a slight decrease of € 13 million, or 1 % compared to € 1.7 billion in 2018 as higher compensation expenses were offset by savings in professional service fees and marketing expenses.

Assets under Management were € 768 billion, an increase of € 103 billion, or 16 %, versus December 31, 2018. The increase was driven by € 74 billion related to favorable market development, € 25 billion net inflows and € 7 billion resulting from positive foreign exchange effects. The net inflows were primarily in the targeted growth areas of Passive, Alternatives and Multi Asset products. The development in Assets under Management was also impacted by the outperformance of flagship funds and targeted strategies, an increase in the number of funds rated 4 or 5 stars by Morningstar and product innovations.

The following table provides the development of Assets under Management during 2019, broken down by product type as well as the respective management fee margins:

in € bn.	Active Equity	Active Fixed Income	Active Multi Asset	Active SQI	Active Cash	Passive	Alternatives	Assets under Management
Balance as of December 31, 2018	77	227	46	63	58	112	81	664
Inflows	15	58	16	20	447	65	20	642
Outflows	(17)	(66)	(9)	(18)	(449)	(46)	(11)	(617)
Net Flows	(2)	(8)	7	2	(2)	19	9	25
FX impact	0	3	0	0	1	1	1	7
Performance	20	13	5	8	1	23	4	74
Other	(1)	(1)	(0)	(2)	(0)	1	1	(3)
Balance as of December 31, 2019	96	234	58	71	57	156	96	768
Management fee margin (in bps)	76	12	35	27	4	22	54	30

Capital Release Unit

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	2020 increase (decrease) from 2019 in %	2019 increase (decrease) from 2018 in € m.	2019 increase (decrease) from 2018 in %
Net revenues	(225)	217	1,911	(442)	N/M	(1,694)	(89)
Provision for credit losses	29	(14)	(36)	43	N/M	22	(61)
Noninterest expenses							
Compensation and benefits	168	359	547	(191)	(53)	(188)	(34)
General and administrative expenses	1,774	2,898	2,742	(1,124)	(39)	156	6
Impairment of goodwill and other intangible assets	0	0	0	0	N/M	0	N/M
Restructuring activities	5	143	62	(139)	(97)	81	131
Total noninterest expenses	1,947	3,400	3,351	(1,453)	(43)	49	1
Noncontrolling interests	(0)	1	1	(1)	N/M	1	136
Profit (loss) before tax	(2,201)	(3,170)	(1,404)	970	(31)	(1,766)	126
Total assets (in € bn)[1]	198	259	370	(62)	(24)	(111)	(30)
Employees (full-time equivalent)	482	621	1,540	(139)	(22)	(919)	(60)

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances

2020

CRU incurred a loss before tax of € 2.2 billion in 2020, compared to a loss before tax of € 3.2 billion in 2019. This improvement versus the prior year was mainly driven by lower general and administrative expenses, lower compensation and benefits, lower restructuring costs that more than offset the loss of revenues from the exit of the equities trading business.

Net revenues were negative € 225 million, a decrease of € 442 million compared to 2019. Negative revenues in 2020 represent a full year of executing the strategy and were driven by de-risking, funding and hedging costs, partly offset by Prime Finance cost recovery. The prior year included six months of operating revenue before the CRU formation.

Provision for credit losses were € 29 million, compared to a release of € 14 million in 2019. While the net release in 2019 was dominated by a small number of specific events across several portfolios, 2020 saw additional provisions driven by the legacy shipping portfolio.

Noninterest expenses were € 1.9 billion, a reduction of € 1.5 billion or 43 % compared to the prior year. Consistent with our strategy, 2020 saw significantly lower restructuring costs of € 5 million compared to € 143 million incurred in the prior year. Similarly, CRU incurred significantly lower transformation costs, with € 162 million incurred in 2020, compared to transformation charges of € 510 million in 2019, mainly related to impairments of software.

Adjusted costs excluding transformation charges were € 1.7 billion, a decrease of € 861 million, or 33 % compared to 2019 following lower compensation and benefits costs across both fixed and variable compensation and reduced non-compensation costs mainly driven by lower professional fees as well as communication and data services.

Leverage exposure was € 72 billion, € 8 billion ahead of the euro year-end target of € 80 billion. This represents a full-year reduction of 43% versus € 127 billion at the end of 2019.

Risk weighted assets (RWAs) were € 34 billion at the end of 2020, € 4 billion below the year-end target of € 38 billion. This represents a full year reduction of € 11 billion, of which € 10 billion from Credit and Market Risk or a 48 % reduction from the prior year period.

2019

CRU incurred a loss before tax of € 3.2 billion in 2019, compared to a loss before tax of € 1.4 billion in 2018. However, management actions enabled the division to significantly reduce risk-weighted assets and leverage exposure in line with the strategy. The increase in loss over the prior year was mainly driven by lower revenues, higher restructuring costs and higher general and administrative expenses partly offset by lower compensation and benefits and provision for credit losses.

Net revenues were € 217 million, a decrease of € 1.7 billion or 89 % compared to 2018. Revenues were impacted by the decision in the third quarter to exit Equity trading, the closing of the transaction in the first half of 2019 to sell the retail banking business in Portugal and costs associated with de-risking of assets. Revenues in Prime Finance were significantly lower compared to the prior year reflecting lower average balances during the year and reduced margins. Revenues included a loss of € 116 million from specific items relating to model parameter updates and DVA.

Provision for credit losses was a € 14 million release in 2019 compared to a release of € 36 million in the prior year. While the net release in 2018 was mainly driven by sales activities in our retail and shipping business, 2019 was dominated by a small number of specific events across several portfolios.

Noninterest expenses were € 3.4 billion, an increase of € 49 million or 1 % compared to the prior year. 2019 included restructuring expenses of € 143 million, an increase of € 81 million compared to the prior year and transformation charges of € 510 million, mainly related to impairments of software.

Adjusted costs excluding transformation charges were € 2.6 billion, a decrease of € 725 million, or 22 % compared to the prior year following lower compensation and benefits costs across both fixed and variable compensation and reduced non-compensation costs mainly driven by lower professional fees as well as communication and data services.

Leverage exposure was € 127 billion at the end of 2019, € 13 billion ahead of the 2019 target. This represents a full-year reduction of 55% versus € 281 billion at the end of 2018.

Risk weighted assets (RWAs) were € 46 billion at the end of 2019, € 6 billion below the year-end target of € 52 billion, and down by 36% versus € 72 billion at the end of 2018.

Corporate & Other (C&O)

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	in %	2019 increase (decrease) from 2018 in € m.	in %
Net revenues	**(548)**	147	(142)	(695)	N/M	289	N/M
Provision for credit losses	**(3)**	0	1	(4)	N/M	(0)	(84)
Noninterest expenses							
Compensation and benefits	3,709	3,906	4,183	(197)	(5)	(277)	(7)
General and administrative expenses	(3,140)	(3,380)	(3,754)	240	(7)	374	(10)
Impairment of goodwill and other intangible assets	0	0	0	0	N/M	0	N/M
Restructuring activities	3	40	(1)	(38)	(93)	41	N/M
Total noninterest expenses	**572**	566	428	6	1	138	32
Noncontrolling interests	**(169)**	(173)	(109)	3	(2)	(64)	58
Profit (loss) before tax	**(948)**	(247)	(461)	(701)	N/M	215	(47)
Employees (full-time equivalent)	38,680	39,389	41,463	(709)	(2)	(2,074)	(5)

N/M – Not meaningful
Prior year segmental information presented in the current structure

2020

C&O reported a loss before tax of €948 million in 2020 compared to a loss before tax of €247 million in 2019, a loss increase of €701 million, mainly driven by a negative contribution from valuation and timing differences in 2020 after gains in the prior year.

Net revenues were negative € 548 million in 2020, compared to € 147 million in 2019. Revenues related to valuation and timing differences were negative € 103 million in 2020, compared to €573 million in 2019. This was driven by the negative mark-to-market impact of hedging activities in connection with the bank's funding arrangements, against the backdrop of tightening spreads on Deutsche Bank funding issuances leading to lower funding costs. Net revenues relating to funding and liquidity were negative €235 million in 2020, versus negative €204 million in 2019.

Noninterest expenses were € 572 million in 2020, an increase of € 6 million, or 1 %, compared to 2019. 2020 noninterest expenses included € 168 million higher than planned infrastructure expenses where the difference is retained in C&O, compared to €65 million lower than planned infrastructure expenses in prior year as well as transformation charges primarily reflecting the bank's accelerated rationalisation of its real estate footprint. Litigation expenses amounted to a credit of € 67 million in 2020 reflecting a net provision release, compared to expenses of €238 million in 2019. Expenses associated with shareholder activities as defined in the OECD Transfer Pricing guidelines not allocated to the business divisions were €403 million in 2020, down 15 % compared to 2019. In 2019 positive effects were recognized from the release of legacy balances.

Noncontrolling interests are deducted from the profit before tax of the divisions and reversed in C&O. These amounted to € 169 million in 2020, compared to €173 million in 2019, mainly related to DWS.

2019

C&O reported a loss before tax of €247 million in 2019 compared to a loss before tax of €461 million in 2018, a decrease of 47 %, mainly driven by higher positive effects from valuation and timing differences and by higher reversals of noncontrolling interests, mainly related to DWS, deducted from profit before tax of the divisions in 2019.

Net revenues were € 147 million in 2019, compared to negative € 142 million in 2018. Revenues related to valuation and timing differences were €573 million in 2019, compared to €107 million in 2018 driven by the positive mark-to-market impact of hedging activities in connection with the bank's funding arrangements. Net revenues relating to funding and liquidity were negative € 204 million in 2019, down from negative € 87 million in 2018 mainly due to the implementation of a new internal Funds Transfer Pricing framework in the third quarter of 2019. Costs related to the introduction of the new framework are held in C&O while the new framework is phased in.

Noninterest expenses were €566 million in 2019, an increase of €138 million, or 32 %, compared to 2018, mainly driven by litigation expenses of €238 million in 2019, compared to €52 million in 2018. Expenses associated with shareholder activities as defined in the OECD Transfer Pricing guidelines not allocated to the business divisions increased from € 422 million in 2018 to €476 million in 2019. In addition positive effects from the release of legacy balances were also recognized in the third quarter of 2019 in noninterest expenses.

Noncontrolling interests are deducted from the profit before tax of the divisions and reversed in C&O. The increase from €109 million reversed noncontrolling interests in 2018 to €173 million in 2019 was mainly related to higher profits in DWS.

Financial position

Assets

in € m. (unless stated otherwise)	Dec 31, 2020	Dec 31, 2019	Absolute Change	Change in %
Cash, central bank and interbank balances	175,339	147,228	28,111	19
Central bank funds sold, securities purchased under resale agreements and securities borrowed	8,533	14,229	(5,696)	(40)
Financial assets at fair value through profit or loss	527,980	530,713	(2,733)	(1)
Of which: Trading assets	107,929	110,875	(2,946)	(3)
Of which: Positive market values from derivative financial instruments	343,493	332,931	10,563	3
Of which: Non-trading financial assets mandatory at fair value through profit and loss	76,121	86,901	(10,779)	(12)
Financial assets at fair value through other comprehensive income	55,834	45,503	10,331	23
Loans at amortized cost	426,691	429,841	(3,149)	(1)
Remaining assets	130,584	130,161	424	0
Of which: Brokerage and securities related receivables	74,564	63,401	11,163	18
Total assets	**1,324,961**	1,297,674	27,287	2

Liabilities and Equity

in € m. (unless stated otherwise)	Dec 31, 2020	Dec 31, 2019	Absolute Change	Change in %
Deposits	567,745	572,208	(4,463)	(1)
Central bank funds purchased, securities sold under repurchase agreements and securities loaned	4,023	3,374	649	19
Financial liabilities at fair value through profit or loss	419,199	404,448	14,751	4
Of which: Trading liabilities	44,316	37,065	7,250	20
Of which: Negative market values from derivative financial instruments	327,775	316,506	11,269	4
Of which: Financial liabilities designated at fair value through profit or loss	46,582	50,332	(3,750)	(7)
Other short-term borrowings	3,553	5,218	(1,665)	(32)
Long-term debt	149,163	136,473	12,690	9
Remaining liabilities	119,094	113,795	5,299	5
Of which: Brokerage and securities related payables	79,810	71,287	8,524	12
Total liabilities	**1,262,777**	1,235,515	27,262	2
Total equity	**62,184**	62,160	25	0
Total liabilities and equity	**1,324,961**	1,297,674	27,287	2

Movements in assets and liabilities

As of December 31, 2020, the total balance sheet of € 1.3 trillion slightly increased by € 27.3 billion (or 2.1 %) compared to year-end 2019.

Key drivers for the overall movement were increases in cash, central bank and interbank balances by € 28.1 billion, primarily driven by funds received from the third TLTRO refinancing program of the ECB recognized in long-term debt, the sale of selected hold-to-collect assets and a decrease in securities purchased under resale agreements and securities borrowed.

Brokerage and securities related receivables increased by € 11.2 billion, largely by an increase in cash margin receivables of € 9.6 billion resulting primarily from higher derivative positions. This increase in remaining assets was largely offset by a decrease of € 10.7 billion from the sale of hold-to-collect assets. Brokerage and securities related payables similarly increased by € 8.5 billion primarily from cash margin payables as a result of higher derivative positions, contributing to the overall increase of € 5.3 billion in remaining liabilities.

Positive and negative market values of derivative financial instruments increased by € 10.6 billion and € 11.3 billion, respectively, primarily in foreign exchange products in the U.S.

Financial assets at fair value through other comprehensive income increased by € 10.3 billion, mainly driven by sovereign bond purchases as part of managing our strategic liquidity reserve.

Central bank funds sold, securities purchased under resale agreements and securities borrowed measured at amortized costs and under non-trading financial assets mandatory at fair value through profit and loss decreased by € 13.8 billion, driven by managed reductions in the wake of unfavourable market conditions as well as matured trades. Corresponding liabilities decreased by € 1.3 billion.

Trading liabilities increased by € 7.3 billion, mainly attributable to support market making activities in cash and derivative products. Trading assets decreased by € 2.9 billion, primarily driven from the wind-down of positions in the Capital Release Unit.

Deposits decreased by € 4.5 billion, primarily driven by a reduction in Corporate Bank deposits reflecting our targeted initiatives to pro-actively manage liabilities, partially offset by a modest increase in Private Bank sight deposits.

Loans at amortized cost decreased by € 3.1 billion, primarily driven by foreign exchange movements, partially offset by loan growth in Germany.

The overall movement of the balance sheet included a decrease of € 47.6 billion due to foreign exchange rate movements, mainly driven by a weakening of the U.S. Dollar versus the Euro. The effects from foreign exchange rate movements are embedded in the movement of the balance sheet line items discussed in this section.

Liquidity

Liquidity reserves amounted to € 243 billion as of December 31, 2020 (compared to € 222 billion as of December 31, 2019). We maintained a positive liquidity stress result as of December 31, 2020 (under the combined scenario).

Equity

Total equity as of December 31, 2020, was up by € 25 million compared to December 31, 2019. This change was driven by a number of factors which altogether had an offsetting effect, including the issuance of new additional equity components (Additional Tier 1 securities, treated as equity according to IFRS) of € 1.2 billion on February 11, 2020, the net income attributable to Deutsche Bank shareholders of € 483 million, unrealized net gains of financial assets at fair value through other comprehensive income of € 233 million, as well as remeasurement gains related to defined benefit plans of € 223 million, net of tax. These factors were almost offset by a negative impact from foreign currency translation of € 1.7 billion, net of tax, mainly resulting from the weakening of the U.S. dollar against the Euro and coupons paid on additional equity components of € 349 million.

Own Funds

Our CRR/CRD Common Equity Tier 1 (CET 1) capital as of December 31, 2020 increased by € 0.6 billion to € 44.7 billion, compared to € 44.1 billion as of December 31, 2019. The CRR/CRD Risk-weighted assets (RWA) increased by € 4.9 billion to € 329.0 billion as of December 31, 2020, compared to € 324.0 billion as of December 31, 2019. Due to the increased CRR/CRD CET 1 capital and CRR/CRD RWA, the CRR/CRD CET 1 capital ratio as of December 31, 2020 remains unchanged at 13.6% compared to December 31, 2019.

Our CRR/CRD Tier 1 capital as of December 31, 2020 amounted to € 51.5 billion, consisting of a CRR/CRD CET 1 capital of € 44.7 billion and CRR/CRD Additional Tier 1 (AT1) capital of € 6.8 billion. The CRR/CRD Tier 1 capital was € 1.0 billion higher than at the end of December 31, 2019, driven by an increase in CRR/CRD CET 1 capital of € 0.6 billion and an increase in CRR/CRD AT1 capital of € 0.5 billion since year end 2019. The CRR/CRD Tier 1 capital ratio as of December 31, 2020 increased to 15.7% compared to 15.6% as of December 31, 2019.

Our CRR/CRD Total Regulatory capital as of December 31, 2020 amounted to € 58.5 billion compared to € 56.5 billion at the end of December 31, 2019. The CRR/CRD Total capital increase was driven by an increase in CRR/CRD Tier 1 capital of € 1.0 billion and an increase in CRR/CRD Tier 2 capital of € 1.0 billion since year end 2019. The CRR/CRD Total capital ratio as of December 31, 2020 increased to 17.8% compared to 17.4% as of December 31, 2019.

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

Tabular Disclosure of Contractual Obligations

Cash payment requirements outstanding as of December 31, 2020.

Contractual obligations					Payment due by period
in € m.	Total	Less than 1 year	1–3 years	3–5 years	More than 5 years
Long-term debt obligations[1]	159,425	61,783	36,206	30,366	31,070
Trust preferred securities[1,2]	1,345	1,345	0	0	0
Long-term financial liabilities designated at fair value through profit or loss[3]	3,501	367	727	1,090	1,316
Future cash outflows not reflected in the measurement of Lease liabilities[4]	5,971	50	330	461	5,130
Lease liabilities[1]	4,566	699	902	902	2,064
Purchase obligations	4,209	500	1,825	899	985
Long-term deposits[1]	24,018	0	8,585	5,223	10,210
Other long-term liabilities	1,279	419	117	202	541
Total	**204,313**	65,163	48,692	39,141	51,316

[1] Includes interest payments.
[2] Contractual payment date or first call date.
[3] Long-term debt and long-term deposits designated at fair value through profit or loss.
[4] For further detail please refer to Note 22 “Leases”.

Purchase obligations for goods and services include future payments for, among other things, information technology services and facility management. Some figures above for purchase obligations represent minimum contractual payments and actual future payments may be higher. Long-term deposits exclude contracts with a remaining maturity of less than one year. Under certain conditions future payments for some long-term financial liabilities designated at fair value through profit or loss may occur earlier. See the following notes to the consolidated financial statements for further information: Note 5 “Net Interest Income and Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss”, Note 22 “Leases”, Note 26 “Deposits” and Note 30 “Long-Term Debt and Trust Preferred Securities”.

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

Risk report

Introduction – 53
54 Risk and capital overview
Key risk metrics – 54
Overall risk assessment – 55
Risk profile – 56
58 Risk and capital framework
Risk management principles – 58
Risk governance – 59
Risk appetite and capacity – 62
Risk and capital plan – 62
Stress testing – 64
Risk measurement and reporting systems – 65
Recovery and resolution planning – 67
68 Risk and capital management
Capital management – 68
Resource limit setting – 68
Risk identification and assessment – 69
Credit risk management and asset quality – 69
Market risk management – 93
Operational risk management – 100
Liquidity risk management – 104
Business (strategic) risk management – 108
Model risk management – 109
Reputational risk management – 109
Risk concentration and risk diversification – 110
111 Risk and capital performance
Capital, Leverage ratio, TLAC and MREL – 111
Credit risk exposure – 127
Trading market risk exposures – 149
Nontrading market risk exposures – 152
Operational risk exposure – 154
Liquidity risk exposure – 155

Introduction

Disclosures in line with IFRS 7

The following Risk Report provides qualitative and quantitative disclosures about credit, market and other risks in line with the requirements of International Financial Reporting Standard 7 (IFRS 7) Financial Instruments: Disclosures. It also considers the underlying classification and measurement and impairment requirements in IFRS 9 with further details to be found in the “Credit Risk Management and Model” section, in the “Asset quality” section, in the “Credit risk mitigation” section and in Note 1 “Significant accounting policies and critical accounting estimates” to the consolidated financial statements. Information which forms part of and is incorporated by reference into the financial statements of this report is marked by a grey shading throughout this Risk report.

Disclosures according to Pillar 3 of the Basel 3 Capital Framework

Most disclosures according to Pillar 3 of the Basel 3 Capital Framework, which are implemented in the European Union by the Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms (Capital Requirements Regulation or CRR), including recent amendments; and supported by EBA Implementing Technical Standards or the “Final Report on the Guidelines on Disclosure Requirements under Part Eight of Regulation (EU) No 575/2013” (“EBA Guideline”, EBA/GL/2016/11, version 2*) and related guidelines applicable to Pillar 3 disclosures, are published in our additional Pillar 3 Report, which can be found on our website. In cases where disclosures in this Risk Report also support Pillar 3 disclosure requirements these are highlighted by references from the Pillar 3 Report into the Risk Report.

For year-end 2020, we introduced for the first time a framework to determine the prudential provisioning of non-performing exposures as a Pillar 2 measure in accordance with ECB guidance. Furthermore, Regulation (EU) 2019/876 introduces that certain software assets do not have to be deducted from CET1 items, instead the concept of a prudential amortization is applied. In addition Regulation (EU) 2019/876 introduces a different treatment of subsidiaries and participations that are only consolidated under IFRS. For these entities we now apply an at-equity treatment, instead of an at-cost treatment.

Disclosures according to principles and recommendations of the Enhanced Disclosure Task Force (EDTF)

In 2012 the Enhanced Disclosure Task Force (“EDTF”) was established as a private sector initiative under the auspices of the Financial Stability Board (“FSB”), with the primary objective to develop fundamental principles for enhanced risk disclosures and to recommend improvements to existing risk disclosures. As a member of the EDTF we adhere to the disclosure recommendations in this Risk Report and also in our additional Pillar 3 report.

Risk and capital overview

Key risk metrics

The following selected key risk ratios and corresponding metrics form part of our holistic risk management across individual risk types. The Common Equity Tier 1 Ratio (CET 1), Economic Capital Adequacy Ratio (ECA), Leverage Ratio (LR), Total loss absorbing capacity (TLAC), Minimum Requirement for Own Funds and Eligible Liabilities (MREL), Liquidity Coverage Ratio (LCR), and Stressed Net Liquidity Position (sNLP) serve as high level metrics and are fully integrated across strategic planning, risk appetite framework, stress testing (except LCR, TLAC and MREL), and recovery and resolution planning practices, which are reviewed and approved by our Management Board at least annually. The CET 1, LR, Leverage Exposure, TLAC, MREL, LCR and Risk-Weighted-Assets ratios and metrics, which are regulatory defined, are based on the Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms (Capital Requirements Regulation or "CRR") and the directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (Capital Requirements Directive or "CRD"), including recent amendments. MREL is based on the Single Resolution Mechanism (SRM) regulation as well as respective communication by the Single Resolution Board (SRB). ECA, Economic Capital and sNLP are Deutsche Bank-specific internal risk metrics in addition to the above described regulatory metrics.

Common Equity Tier 1 Ratio	
31.12.2020	13.6 %
31.12.2019	13.6 %
Economic Capital Adequacy Ratio	
31.12.2020	179 %
31.12.2019	163 %
Leverage Ratio (fully-loaded)	
31.12.2020	4.7 %
31.12.2019	4.2 %
Total loss absorbing capacity (TLAC)	
31.12.2020 (Risk Weighted Asset based)	31.94 %
31.12.2020 (Leverage Exposure based)	9.74 %
31.12.2019 (Risk Weighted Asset based)	34.67 %
31.12.2019 (Leverage Exposure based)	9.62 %
Liquidity Coverage Ratio	
31.12.2020	145 %
31.12.2019	141 %

Total Risk-Weighted Assets	
31.12.2020	€ 329.0 bn
31.12.2019	€ 324.0 bn
Total Economic Capital	
31.12.2020	€ 28.6 bn
31.12.2019	€ 29.2 bn
Leverage Exposure	
31.12.2020	€ 1,078 bn
31.12.2019	€ 1,168 bn
Minimum requirement for own funds and eligible liabilities (MREL)	
31.12.2020	10.67 %
31.12.2019	11.57 %
Stressed Net Liquidity Position (sNLP)	
31.12.2020	€ 43.0 bn
31.12.2019	€ 24.3 bn

For further details please refer to sections "Risk profile", "Risk appetite and capacity", "Risk and capital plan", "Stress testing", "Recovery and resolution planning", "Risk and capital management", "Capital, leverage ratio, TLAC and MREL" (for phase-in and fully loaded figures), "Liquidity coverage ratio", and "Stress testing and scenario analysis".

Overall risk assessment

Key risk types as reflected in Deutsche Bank's risk type taxonomy include credit risk (including default, migration, transaction, settlement, exposure, country, mitigation and concentration risks), market risk (including interest rate, foreign exchange, equity, credit spread, commodity and cross-asset risks), liquidity risk (including short term liquidity and funding risk), business risk (including strategic and tax risk), cross risk, reputational risk and operational risk (with important sub-categories like compliance, legal, model, information security & technology, fraud, and money laundering risks). We manage the identification, assessment and mitigation of top and emerging risks through an internal governance process and the use of risk management tools and processes. Our approach to identification and impact assessment aims to ensure that we mitigate the impact of these risks on our financial results, long-term strategic goals and reputation. Please refer to the section "Risk and capital management" for detailed information on the management of our material risks.

As part of our regular analysis, sensitivities of the key portfolio risks are reviewed using bottom-up risk assessment, complemented by top-down macro-economic and political scenario analysis. This two-pronged approach allows us to capture risk drivers that have an impact across our risk portfolios and business divisions as well as those relevant to specific portfolios.

Since early 2020 our macroeconomic business and operating environment has been dominated by the coronavirus pandemic, and the associated downside risks remained elevated over year-end. Following the severe GDP contractions observed across major advanced economies in 2020, we expect economic recovery to unfold in the course of 2021 as effective COVID-19 vaccination becomes widely available and additional fiscal stimulus is provided in the US and EU economies in particular. However, for the short-term economic outlook, we continue to see significant downside risks rippling through the global economy from elevated levels of COVID-19 infections, lockdown restrictions and deeper risk aversion.

Due to the largely unprecedented nature of the COVID-19 crisis, the forecast uncertainty is expected to remain unusually high for quite some time. As a bank, our working assumption remains that lagging effects of the COVID-19 recession will continue to unfold and that the low interest rate environment in the Eurozone will persist for several quarters at least. The intensified "lower for longer" interest rate environment, as key central banks provide abundant additional liquidity in support of their economies, can impact our net interest income and other rate sensitive businesses activities. Lower for longer rates have also supported elevated market valuations as investors search for yield. This raises the risk of a significant price correction, potentially triggering wider market instability.

Higher corporate and sovereign debt will be a legacy of the pandemic. Currently, risks of credit problems and defaults are partially mitigated by generous fiscal and monetary policy support but the eventual withdrawal of such support may increase credit pressures over time.

If the COVID-19 vaccine roll-out continues successfully, and continues to be boosted by massive monetary and fiscal policy support, the expected economic recovery and reflation may be subject to significant upside over the medium term. This could in turn lead consumer price and asset price inflation in major advanced economies to accelerate substantially faster than anticipated. Whilst this could create some upside potential for our business activity levels and net interest income, a disorderly sharp increase in bond yields could trigger a downward correction to equities and other highly valued risk asset markets as well as increased credit risks on highly leveraged clients.

Political uncertainty has arguably declined towards the end of 2020, with the new US President Joseph R. Biden elected in November, the EU agreeing on its multi-year budget plan and the associated European Recovery Fund ("RRF") in mid-December, and a Brexit trade deal agreed between the UK and the EU shortly before the end of the transition period at year end. However, geopolitical risks remain elevated and need to be monitored closely, e.g. with regard to the deep divide in US society, the tense US-China relations in international trade and following the passing of the new national security law in Hong Kong, populist movements in various EU countries, or the ongoing negotiations between the UK and the EU on their future relationship. Other geopolitical risks which could negatively impact our business environment include tensions in the South China Sea and between the US and China over Taiwan as well as the potential for escalation in the Middle East over Iran's nuclear program following recent steps towards higher uranium enrichment levels.

In addition to the risks described above, we are exposed to a variety of financial risks, including but not limited to counterparty default risks or sudden market shocks impacting our credit and market risk profiles and non-financial risks including but not limited to operational and IT infrastructure, transaction processing and third party vendor risks.

The potential impacts of these risks on our balance sheet and profitability are assessed through portfolio reviews and stress tests. Stress tests are also used to test the resilience of Deutsche Bank's strategic plans. The results of these tests indicate that the currently available capital and liquidity reserves, in combination with available mitigation measures, would allow us to absorb the impact of these risks if they were to materialize as envisaged. Information about risk and capital positions for our portfolios can be found in the "Risk and capital performance" section.

Risk profile

The table below shows our overall risk position as measured by the economic capital demand calculated for credit, market, operational and business risk for the dates specified. To determine our overall economic risk position, we generally consider diversification benefits across risk types.

Overall risk position as measured by economic capital demand by risk type

in € m. (unless stated otherwise)	Dec 31, 2020	Dec 31, 2019	2020 increase (decrease) from 2019 in € m.	 in %
Credit risk	11,636	10,757	879	8
Market risk	10,894	11,767	(874)	(7)
Trading market risk	2,198	3,592	(1,394)	(39)
Nontrading market risk	8,696	8,175	521	6
Operational risk	5,512	5,813	(301)	(5)
Business risk	5,949	6,374	(425)	(7)
Diversification benefit[1]	(5,429)	(5,535)	106	(2)
Total economic capital demand	**28,560**	29,176	(616)	(2)

[1] Diversification benefit across credit, market, operational and strategic risk (largest part of business risk).

As of December 31, 2020, our economic capital demand amounted to € 28.6 billion, which was € 0.6 billion or 2 % lower than € 29.2 billion economic capital demand as of December 31, 2019.

The economic capital demand for credit risk as of December 31, 2020 was € 0.9 billion or 8 % higher compared to year-end 2019 mainly due to rating migrations related to the COVID-19 pandemic and a model enhancement for recovery risk.

The economic capital demand for trading market risk decreased to € 2.2 billion as of December 31, 2020, compared to € 3.6 billion at year-end 2019 primarily driven by a lower level of credit inventory in the Investment Bank, most notably from Commercial Real Estate business. The economic capital demand for nontrading market risk increased by € 0.5 billion or 6 % compared to December 31, 2019 mainly driven by the increase in market risk exposures in the liquidity reserves portfolio and in equity compensation plans. Market risk economic capital remains on the Monte Carlo methodology at present and will be migrated to historical simulation in due course.

The operational risk economic capital usage totaled € 5.5 billion as of December 31, 2020, which was € 0.3 billion or 5 % lower than the € 5.8 billion economic capital usage as of December 31, 2019. In line with the development of our RWA for operational risk, the decrease was largely driven by a lighter loss profile feeding into our capital model, which was partly offset by a reduction of the expected loss deductible and by slightly weaker risk appetite metrics and risk assessment scores. For a detailed description see the section “Operational risk management”.

Our business risk economic capital methodology captures strategic risk, which also implicitly includes elements of nonstandard risks including refinancing and reputational risk, tax risk, a capital charge for risk related to IFRS deferred tax assets on temporary differences and a newly introduced capital charge for risk related to software assets. The business risk decreased to € 5.9 billion as of December 31, 2020 which was € 0.4 billion or 7 % lower compared to € 6.4 billion as of December 31, 2019. The decrease was mainly driven by lower economic capital demand for strategic risk of € 2.1 billion, which primarily reflects the execution of Deutsche Bank’s transformation and the associated improvement in the earnings outlook. This decrease was partially offset by the introduction of a capital charge of € 1.8 billion to account for the risk associated with the software assets recognized in economic capital supply. The economic capital demand for tax risk and the capital charge for IFRS deferred tax assets remained stable during the year.

The inter-risk diversification benefit of the economic capital demand across credit, market, operational and strategic risk decreased by € 0.1 billion mainly reflecting changes in the underlying risk type profile.

Our mix of business activities results in diverse risk taking by our business divisions. We also measure the key risks inherent in their respective business models through the total economic capital metric, which mirrors each business division’s risk profile and takes into account cross-risk effects at group level.

Risk profile of our business divisions as measured by economic capital

								Dec 31, 2020
in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total	Total (in %)
Credit Risk	2,588	4,675	2,404	60	648	1,262	11,636	41
Market Risk	822	2,369	1,170	420	235	5,877	10,894	38
Operational Risk	482	2,169	646	284	1,930	0	5,512	19
Business Risk	193	2,767	80	0	0	2,909	5,949	21
Diversification Benefit[1]	(469)	(2,457)	(534)	(180)	(982)	(808)	(5,429)	(19)
Total EC	**3,617**	**9,523**	**3,766**	**584**	**1,831**	**9,239**	**28,560**	**100**
Total EC in %	13	33	13	2	6	32	100	N/M

N/M – Not meaningful
[1] Diversification benefit across credit, market, operational and strategic risk (largest part of business risk).

								Dec 31, 2019[1]
in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total	Total (in %)
Credit Risk	2,417	4,064	2,181	71	859	1,164	10,757	37
Market Risk	539	3,563	1,827	456	464	4,920	11,767	40
Operational Risk	585	2,122	666	366	2,074	0	5,813	20
Business Risk	195	4,914	71	0	20	1,174	6,374	22
Diversification Benefit[2]	(510)	(2,460)	(647)	(224)	(1,075)	(619)	(5,535)	(19)
Total EC	**3,226**	**12,203**	**4,097**	**668**	**2,343**	**6,639**	**29,176**	**100**
Total EC in %	11	42	14	2	8	23	100	N/M

N/M – Not meaningful
[1] Risks amounts allocated to the business segments have been restated to reflect comparatives according to the structure as of December 31, 2020.
[2] Diversification benefit across credit, market, operational and strategic risk (largest part of business risk).

The Corporate Bank's risk profile is dominated by its Trade Finance, Commercial Banking and Cash Management products and services offered. Economic capital demand largely arises from credit risk and is predominantly driven by the Trade Finance and Commercial Clients businesses. The economic capital demand for the Corporate Bank increased by € 0.4 billion in comparison to year-end 2019 as a result of higher market and credit risks. The economic capital demand for market risk increased by € 0.3 billion compared to December 31, 2019 mainly driven by increased exposures in the liquidity reserves portfolio and in equity compensation plans. The economic capital demand for credit risk as of December 31, 2020 was € 0.2 billion higher compared to year-end 2019 mainly driven by higher counterparty risk in Global Transaction Banking. Aforementioned increases were offset by lower economic capital demand for operational risk of € 0.1 billion compared to the year-end 2019, mainly due to the full roll-out of a model enhancement resulting in an improved capture of divisional risk profiles. The economic capital demand for business risk in the Corporate Bank remained flat compared to year-end 2019.

The Investment Bank's risk profile is dominated by its trading activities to support origination, structuring and market making activities, which give rise to all major risk types. Credit risk in Investment Bank is broadly distributed across business units but most prominent in Global Credit Trading, Rates and Leveraged Debt Capital Markets. Market risk arises mainly from trading and market making activities. The remainder of Investment Bank's risk profile is largely derived from business risk reflecting earnings volatility risk. The economic capital demand for the Investment Bank decreased by € 2.7 billion in comparison to year-end 2019 mainly driven by lower business and market risks. Business risk economic capital demand decreased by € 2.1 billion year-on-year mainly due to an improvement in the bank's earnings outlook. The economic capital demand for market risk decreased by € 1.2 billion over the year driven by a lower level of credit inventory, most notably from Commercial Real Estate business. The increases in business and market risks were partially offset by higher credit risk and operational risk. The economic capital demand for credit risk as of December 31, 2020 was € 0.6 billion higher compared to year-end 2019 mainly due to strong fixed income trading activity during 2020. The operational risk economic capital demand slightly increased driven by weaker risk appetite metrics and risk assessment scores as well as cross-divisional reallocation effects.

The Private Bank's risk profile comprises business with German retail, international retail and business clients as well as wealth management clients generating credit risks as well as non-trading market risks from investment risk, modelling of client deposits and credit spread risk. The economic capital demand for the Private Bank decreased by € 0.3 billion in comparison to year-end 2019. The decrease was mainly driven by lower market risk due to the transfer of the liquidity reserve portfolio of DB PFK to Group Treasury part of the business division Corporate & Other, in the context of the merger of DB PFK AG on DB AG. This was partially offset by higher credit risk as a result of portfolio growth, rating deteriorations in the current market environment and methodology changes. The economic capital for operational and business risks remained stable over the year.

Asset Management, as a fiduciary asset manager, invests money on behalf of clients. Its corporate activities are exposed to movements in the market, flows and foreign exchange rates. Economic capital demand largely arises from nontrading market risk due to guarantee products and co-investments in our funds and from operational risk events. The economic capital demand for Asset Management decreased by € 0.1 billion in comparison to year-end 2019 mainly driven by lower operational risk due to a lighter loss profile.

The Capital Release Unit continued to exit and run down the non-strategic assets and businesses transferred into the unit in third quarter of 2019. In line with the de-risking achieved throughout 2020, the economic capital demand of the unit decreased by € 0.5 billion over the course of 2020 compared to year-end 2019.

Corporate & Other's risk profile mainly comprises non-trading market risk from structural foreign exchange risk, pension risk and equity compensation risk, and business risk from a new capital charge for software assets. The economic capital demand for Corporate & Other increased by € 2.6 billion in comparison to year-end 2019 mainly due to the introduction of aforementioned capital charge to account for the risk associated with software assets.

Risk and capital framework

Risk management principles

Our business model inherently involves taking risks. Risks can be financial and non-financial and include on and off-balance sheet risks. Our objective is to create sustainable value in the interests of the company taking into consideration shareholders, employees and other company related stakeholders. The risk management framework contributes to this by aligning our planned and actual risk taking with our risk appetite as expressed by the Management Board, while being in line with our available capital and liquidity.

Our risk management framework consists of various components. Principles and standards were set for each component:

- Organizational structures must follow the Three Lines of Defense ("3LoD") model with a clear definition of roles and responsibilities for all risk types.
  - The 1st Line of Defense ("1st LoD") refers to those roles in the Bank whose activities generate risks, whether financial or non-financial, and who own and are accountable for these risks. The 1st LoD manages these risks within the defined risk appetite, establishes an appropriate risk governance and risk culture, and adheres to the risk type frameworks defined by the 2nd Line of Defense ("2nd LoD").
  - The 2nd LoD refers to the roles in the Bank who define the risk management framework for a specific risk type. The 2nd LoD independently assesses and challenges the implementation of the risk type framework and adherence to the risk appetite, and acts as an advisor to the 1st LoD on how to identify, assess and manage risks.
  - The 3rd Line of Defense ("3rd LoD") is Group Audit, which is accountable for providing independent and objective assurance on the adequacy of the design, operating effectiveness and efficiency of the risk management system and systems of internal control.
- Every employee must act as a risk manager consistent with our risk appetite, risk management standards and values.
- The Management Board approved risk appetite must be cascaded and adhered to across all dimensions of the Group, with appropriate consequences in the event of a breach.
- Risks must be identified and assessed.
- Risks must be actively managed including via appropriate risk mitigation and effective internal control systems.
- Risks must be measured and reported using accurate, complete and timely data using approved models.
- Regular stress tests must be performed against adverse scenarios and appropriate crisis response planning must be established.

We promote a strong risk culture where every employee must fully understand and take a holistic view of the risks which could result from their actions, understand the consequences and manage them appropriately against our risk appetite. We expect employees to exhibit behaviors that support a strong risk culture in line with our Code of Conduct. To promote this, our policies require that risks taken (including against risk appetite) must be taken into account during our performance assessment and compensation processes. This expectation continues to be reinforced through communications campaigns and mandatory training courses for all DB employees. In addition, our Management Board members and senior management frequently communicate the importance of a strong risk culture to support a consistent tone from the top.

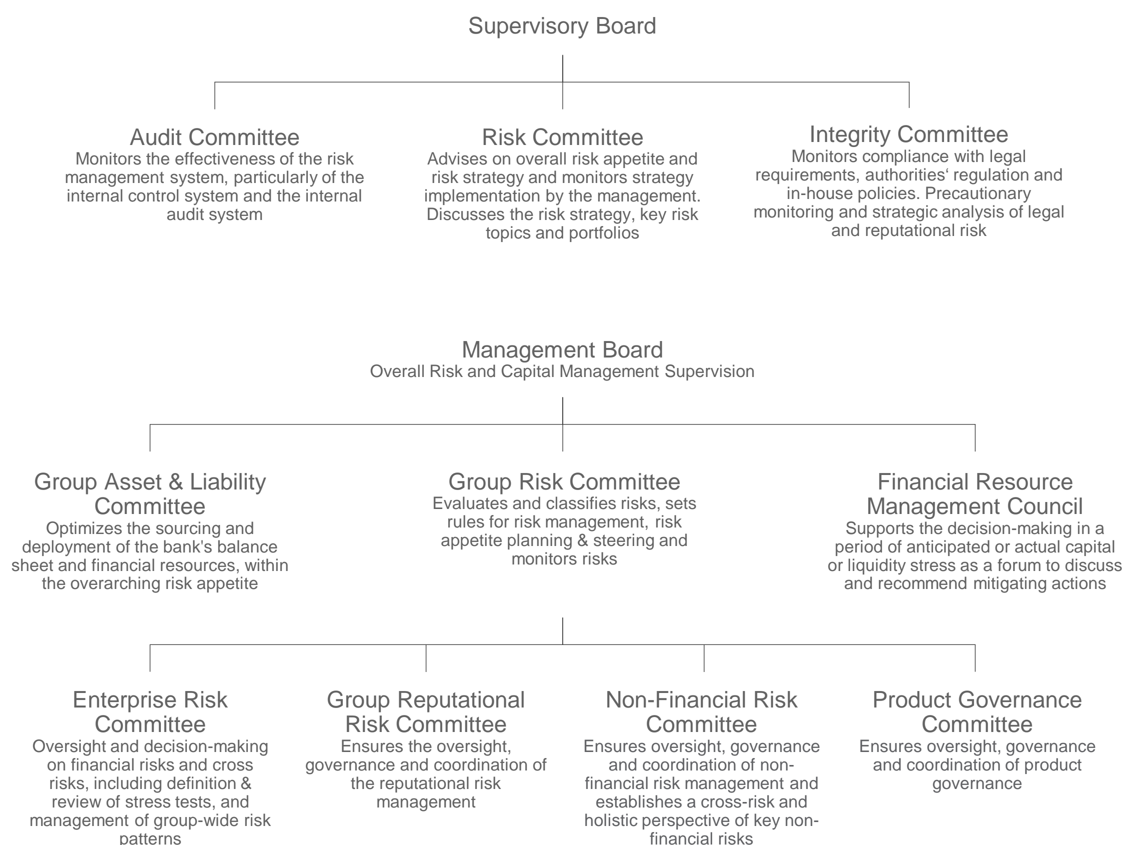
Risk governance

Our operations throughout the world are regulated and supervised by relevant authorities in each of the jurisdictions in which we conduct business. Such regulation focuses on licensing, capital adequacy, liquidity, risk concentration, conduct of business as well as organizational and reporting requirements. The European Central Bank (the "ECB") in connection with the competent authorities of EU countries which joined the Single Supervisory Mechanism via the Joint Supervisory Team act in cooperation as our primary supervisors to monitor our compliance with the German Banking Act and other applicable laws and regulations.

Several layers of management provide cohesive risk governance:

- The Supervisory Board is informed regularly on our risk situation, risk management and risk controlling, including reputational risk related items as well as material litigation cases. It has formed various committees to handle specific topics (for a detailed description of these committees, please see the "Corporate Governance Report" under "Management Board and Supervisory Board", "Standing Committees").
  - At the meetings of the Risk Committee, the Management Board reports on current and forward-looking risk exposures, portfolios, on risk appetite and strategy and on matters deemed relevant for the assessment and oversight of the risk situation of Deutsche Bank AG. It also reports on loans requiring a Supervisory Board resolution pursuant to law or the Articles of Association. The Risk Committee advises the Management Board on issues related to the overall risk appetite, aggregate risk position and the risk strategy and keeps the Supervisory Board informed of its activities.
  - The Integrity Committee, among other responsibilities, advises and monitors the Management Board with regard to the management's commitment to an economically sound, sustainable development of the company, monitors the Management Board's measures that promote the company's compliance with legal requirements, authorities' regulations and the company's own in-house policies, including risk policies. It also reviews the Bank's Code of Conduct and Ethics, and, upon request, supports the Risk Committee in monitoring and analyzing the Bank's legal and reputational risks.
  - The Audit Committee, among other matters, monitors the effectiveness of the risk management system, particularly the internal control system and the internal audit system.
- The Management Board is responsible for managing Deutsche Bank Group in accordance with the law, the Articles of Association and its Terms of Reference with the objective of creating sustainable value in the interest of the company, thus taking into consideration the interests of the shareholders, employees and other company related stakeholders. The Management Board is responsible for establishing a proper business organization, encompassing appropriate and effective risk management, as well as compliance with legal requirements and internal guidelines. The Management Board established the Group Risk Committee ("GRC") as the central forum for review and decision on material risk and capital-related topics. The GRC generally meets once a week. It has delegated some of its duties to individuals and sub-committees. The GRC and its sub-committees are described in more detail below.

Risk management governance structure of the Deutsche Bank Group



The following functional committees are central to the management of risk at Deutsche Bank:

- The Group Risk Committee (GRC) has various duties and dedicated authority, including approval of new or materially changed risk and capital models and review of the inventory of risks, high-level risk portfolios, risk exposure developments, and internal and regulatory Group-wide stress testing results. In addition, the GRC reviews and recommends items for Management Board approval, such as key risk management principles, the Group Risk Appetite Statement, the Group Recovery Plan and the Contingency Funding Plan, over-arching risk appetite parameters, and recovery and escalation indicators. The GRC also supports the Management Board during Group-wide risk and capital planning processes.
  - The Non-Financial Risk Committee (NFRC) oversees, governs and coordinates the management of non-financial risks in Deutsche Bank Group and establishes a cross-risk and holistic perspective of the key non-financial risks of the Group, including conduct and financial crime risk. It is tasked to define the non-financial risk appetite tolerance framework, to monitor and control the effectiveness of the non-financial risk operating model (including interdependencies between business divisions and control functions), and to monitor the development of emerging non-financial risks relevant for the Group.
  - The Group Reputational Risk Committee (GRRC) is responsible for the oversight, governance and coordination of reputational risk management and provides for a look-back and a lessons learnt process. It reviews and decides all reputational risk issues escalated by the Regional Reputational Risk Committees (RRRCs) and RRRC decisions which have been appealed by the business divisions, infrastructure functions or regional management. It provides guidance on Group-wide reputational risk matters, including communication of sensitive topics, to the appropriate levels of Deutsche Bank Group. The RRRCs which are sub-committees of the GRRC, are responsible for the oversight, governance and coordination of the management of reputational risk in the respective regions on behalf of the Management Board.
  - The Enterprise Risk Committee (ERC) has been established with a mandate to focus on enterprise-wide risk trends, events and cross-risk portfolios, bringing together risk experts from various risk disciplines. As part of its mandate, the ERC approves the enterprise risk inventory, certain country and industry threshold increases, and scenario design outlines for more severe group-wide stress tests as well as reverse stress tests. It reviews group-wide stress test results in accordance with risk appetite, reviews the risk outlook, emerging risks and topics with enterprise-wide risk implications.
  - The Product Governance Committee has the mandate to ensure that there is appropriate oversight, governance and coordination of Product Governance in the Group by establishing a cross-risk and holistic perspective of key financial and non-financial risks associated with products and transactions throughout the lifecycle.

- The Financial Resource Management Council (FRMC) is an ad-hoc governance body, chaired by the Chief Financial Officer and Chief Risk Officer with delegated authority from the Management Board, to oversee financial crisis management at the bank. The FRMC provides a single forum to oversee execution of both the Contingency Funding Plan and the Group Recovery Plan. The council recommends upon mitigating actions to be taken in a time of anticipated or actual capital or liquidity stress. Specifically, the FRMC is tasked with analyzing the bank's capital and liquidity position, in anticipation of a stress scenario recommending proposals for capital and liquidity related matters, and ensure execution of decisions.
- The Group Asset & Liability Committee has been established by the Management Board. Its mandate is to optimize the sourcing and deployment of the bank's balance sheet and financial resources within the overarching risk appetite set by the Management Board.

Our Chief Risk Officer (CRO), who is a member of the Management Board, has Group-wide, supra-divisional responsibility for establishing a risk management framework with appropriate identification, measurement, monitoring, mitigation and reporting of liquidity, credit, market, business and non-financial risks (including reputational, IT, legal, conduct, compliance as well as regulatory risks), however frameworks for certain risks are established by other divisions as per the business allocation plan.

The CRO has direct management responsibility for the CRO function. Risk management & control duties in the CRO function are generally assigned to specialized risk management units focusing on the management of

- Specific risk types
- Risks within a specific business
- Risks in a specific region.

These specialized risk management units generally handle the following core tasks:

- Foster consistency with the risk appetite set by the GRC within a framework established by the Management Board and applied to Business Divisions;
- Determine and implement risk and capital management policies, procedures and methodologies that are appropriate to the businesses within each division;
- Establish and approve risk limits;
- Conduct periodic portfolio reviews to keep the portfolio of risks within acceptable parameters; and
- Develop and implement risk and capital management infrastructures and systems that are appropriate for each division.

Chief Risk Officers for each business division, having a holistic view of the respective business, challenge and influence the divisions' strategies, risk awareness and ownership as well as their adherence to risk appetite.

The Enterprise Risk Management (ERM) function sets a bank-wide risk management framework seeking to ensure that all risks at the Group and Divisional level are identified, owned and assessed for materiality. ERM is also responsible for aggregating and analyzing enterprise-wide risk information and concentrations, including review of the risk/return profiles of portfolios to support informed strategic decision-making regarding the effective application of the Bank's resources. ERM has the mandate to:

- Manage enterprise risk appetite at Group level, including the framework and methodology as to how appetite is applied across risk types, divisions, businesses and legal entities;
- Integrate and aggregate risks to provide greater enterprise risk transparency to support decision making;
- Commission forward-looking stress tests and manage Group recovery plans; and
- Govern and improve the effectiveness of the risk management framework.

Compliance protects the Bank's licenses to operate by establishing a framework to promote and enforce adherence with rules and regulations. They provide an independent and objective assurance to the Management Board on the adequacy of the design and effectiveness of the Compliance Risk control framework for the areas for which they have been allocated responsibility.

Anti-Financial-Crime (AFC) sets the framework to prevent money laundering, countering terrorist financing and other criminal activities (including but not limited to fraud, and bribery and corruption activities) and to ensure compliance with financial and trade sanctions.

The functions described above have a reporting line to the CRO.

While operating independently from each other and the business divisions, our Finance and Risk functions have the joint responsibility to quantify and verify the risk that we assume.

Risk appetite and capacity

Risk appetite expresses the aggregate level and types of risk that we are willing to assume to achieve our strategic objectives, as defined by a set of quantitative metrics and qualitative statements. Risk capacity is defined as the maximum level of risk we can assume given our capital and liquidity base, risk management and control capabilities, and our regulatory constraints.

Risk appetite is an integral element in our business planning processes via our risk strategy and plan, to promote the appropriate alignment of risk, capital and performance targets, while at the same time considering risk capacity and appetite constraints from both financial and non-financial risks. Compliance of the plan with our risk appetite and capacity is also tested under stressed market conditions. Top-down risk appetite serves as the limit for risk-taking for the bottom-up planning from the business functions.

The Management Board reviews and approves our risk appetite and capacity on an annual basis, or more frequently in the event of unexpected changes to the risk environment, with the aim of ensuring that they are consistent with our Group's strategy, business and regulatory environment and stakeholders' requirements.

In order to determine our risk appetite and capacity, we set different group level triggers and thresholds on a forward looking basis and define the escalation requirements for further action. We assign risk metrics that are sensitive to the material risks to which we are exposed and which are able to function as key indicators of financial health. In addition to that, we link our risk and recovery management governance framework with the risk appetite framework.

Reports relating to our risk profile as compared to our risk appetite and strategy and our monitoring thereof are presented regularly up to the Management Board. In the event that our desired risk appetite is breached, a predefined escalation governance matrix is applied so these breaches are highlighted to the respective committees.

Risk and capital plan

Strategic and capital plan

We conduct annually an integrated strategic planning process which lays out the development of our future strategic direction for us as a Group and for our business areas. The strategic plan aims to create a holistic perspective on capital, funding and risk under risk-return considerations. This process translates our long-term strategic targets into measurable short- to medium-term financial targets and enables intra-year performance monitoring and management. Thereby we aim to identify growth options by considering the risks involved and the allocation of available capital resources to drive sustainable performance. Risk-specific portfolio strategies complement this framework and allow for an in-depth implementation of the risk strategy on portfolio level, addressing risk specifics including risk concentrations.

The strategic planning process consists of two phases: a top-down target setting and a bottom-up substantiation.

In a first phase – the top-down target setting – our key targets for profit and loss (including revenues and costs), capital supply, capital demand as well as leverage, funding and liquidity are discussed for the group and the key business areas. In this process, the targets for the next five years are based on our global macro-economic outlook and the expected regulatory framework. Subsequently, the targets are approved by the Management Board.

In a second phase, the top-down objectives are substantiated bottom-up by detailed business unit plans, which consist of a month by month operative plan; years two and three are planned per quarter and years four and five are annual plans. The proposed bottom-up plans are reviewed and challenged by Finance and Risk and are discussed individually with the business heads. Thereby, the specifics of the business are considered and concrete targets decided in line with our strategic direction. The bottom-up plans include targets for key legal entities to review local risk and capitalization levels. Stress tests complement the strategic plan to also consider stressed market conditions.

The resulting Strategic and Capital Plan is presented to the Management Board for discussion and approval. The final plan is presented to the Supervisory Board.

The Strategic and Capital Plan is designed to support our vision of being a leading German bank with strong European roots and a global network and aims to ensure:

- Balanced risk adjusted performance across business areas and units;
- High risk management standards with focus on risk concentrations;
- Compliance with regulatory requirements;

- Strong capital and liquidity position; and
- Stable funding and liquidity strategy allowing for business planning within the liquidity risk appetite and regulatory requirements.

The Strategic and Capital Planning process allows us to:

- Set earnings and key risk and capital adequacy targets considering the bank’s strategic focus and business plans;
- Assess our capital adequacy with regard to internal and external requirements (i.e., economic capital and regulatory capital); and
- Apply appropriate stress test analyses’ to assess the impact on capital demand, capital supply and liquidity.

All externally communicated financial targets are monitored on an ongoing basis in appropriate management committees. Any projected shortfall versus targets is discussed together with potential mitigating strategies with the aim to ensure that we remain on track to achieve our targets. Amendments to the strategic and capital plan must be approved by the Management Board. Achieving our externally communicated solvency targets ensures that we also comply with the solvency ratio-related Group Supervisory Review and Evaluation Process (SREP) requirements as articulated by our home supervisor.

On December 9, 2019, Deutsche Bank was informed by the ECB of its decision regarding prudential minimum capital requirements for 2020 that applied from January 1, 2020 onwards, following the results of the 2019 SREP. The decision acknowledges the progress Deutsche Bank has made since the first SREP assessment in 2016, leading to a decrease in the ECB’s Pillar 2 Requirement (P2R) from 2.75 % to 2.50 % of RWA, effective as of January 1, 2020. As a result, Deutsche Bank was required to maintain a CET 1 ratio of at least 11.58 % on a consolidated basis. This CET 1 capital requirement comprised the Pillar 1 minimum capital requirement of 4.50 %, the lowered Pillar 2 requirement (SREP add-on) of 2.50 %, the capital conservation buffer of 2.50 %, the countercyclical buffer of 0.08 % as of January 1, 2020 (subject to changes throughout the year) and the G-SII buffer requirement of 2.00 %. Correspondingly, 2020 requirements for Deutsche Bank's Tier 1 capital ratio were at 13.08 % and for its total capital ratio at 15.08 %.

On March 12, 2020, the ECB announced various supervisory measures in reaction to the COVID-19 pandemic. Related to that, Deutsche Bank was informed by the ECB of its decision to implement Article 104a of the Directive (EU) 2019/878 of the European Parliament (CRDV) with effect from March 12, 2020. The decision requires Deutsche Bank to fulfill its unchanged 2.50 % Pillar 2 requirement (SREP add-on) with at least 56.25 % CET 1, 18.75 % Additional Tier 1 and 25 % Tier 2 capital. As of December 31, 2020, Deutsche Bank needs to maintain on a consolidated basis a CET 1 ratio of at least 10.42 %, a Tier 1 ratio of at least 12.39 % and a Total Capital ratio of at least 15.02 %. The CET 1 requirement comprises the Pillar 1 minimum capital requirement of 4.50 %, the Pillar 2 requirement (SREP add-on) of 1.41 %, the capital conservation buffer of 2.50 %, the countercyclical buffer (subject to changes throughout the year) of 0.02 % and the higher of our G-SII/O-SII buffer of 2.00 %. Correspondingly, the Tier 1 capital requirement includes additionally a Tier 1 minimum capital requirement of 1.50 % plus a Pillar 2 requirement of 0.47 %, and the Total Capital requirement includes further a Tier 2 minimum capital requirement of 2.00 % and a Pillar 2 requirement of 0.63 %. Also, the ECB communicated to Deutsche Bank that its individual expectation to hold a further Pillar 2 CET 1 capital add-on, commonly referred to as ‘Pillar 2 guidance’ will be seen as guidance only and – until further notice – a breach of this guidance will not trigger the need to provide a capital restoration plan or a need to execute measures to re-build CET 1 capital. The ECB has further communicated that once this period of financial distress is over, banks will be granted sufficient time to build up the buffers again.

In December 2020 the ECB informed Deutsche Bank that these capital requirements will remain unchanged in 2021 with no update of requirements as part of the 2020 SREP, for which, in light of the pandemic and the unique economic and financial situation it has generated, and in line with EBA’s statement of April 22, 2020, the ECB has adopted a “pragmatic approach”, based on which in principle no new decisions are issued in the 2020 cycle with the 2019 SREP decisions continuing to apply, amended by the above mentioned additional supervisory measures announced on March 12, 2020

In 2021, Deutsche Bank will participate in the EBA Stress Test 2021 which was postponed from 2020 due to the COVID-19 pandemic. By its standard procedures, the ECB will consider our quantitative performance in the adverse scenario as an input when reconsidering the level of the Pillar 2 Guidance in its 2021 SREP assessment and our qualitative performance as one aspect when holistically reviewing the Pillar 2 Requirement. As can be seen from the published adverse macro-economic scenario and market shock, the banking sector will be tested against the most severe scenario of all European regulatory stress tests conducted so far.

It should be noted that the Financial Stability Board announced in 2019 that our G-SII buffer will be reduced to 1.5 % effective from January 1, 2021. This however does not change the Banks’ capital requirements as the O-SII buffer remains at 2.0 %.

Internal capital adequacy assessment process

Deutsche Bank's internal capital adequacy assessment process (ICAAP) consists of several well-established components which ensure that Deutsche Bank maintains sufficient capital to cover the risks to which the bank is exposed on an ongoing basis:

- Risk identification and assessment: The risk identification process forms the basis of the ICAAP and results in an inventory of risks for the Group. All risks identified are assessed for their materiality. Further details can be found in section "Risk identification and assessment".
- Capital demand/risk measurement: Risk measurement methodologies and models are applied to quantify the regulatory and economic capital demand which is required to cover all material risks except for those which cannot be adequately limited by capital e.g. liquidity risk. Further details can be found in sections "Risk profile" and "Capital, Leverage Ratio, TLAC and MREL".
- Capital supply: Capital supply quantification refers to the definition of available capital resources to absorb unexpected losses. Further details can be found in sections "Capital, Leverage Ratio, TLAC and MREL" and "Economic Capital Adequacy".
- Risk appetite: Deutsche Bank has established a set of qualitative statements, quantitative metrics and thresholds which express the level of risk that we are willing to assume to achieve our strategic objectives. Threshold breaches are subject to a dedicated governance framework triggering management actions aimed to safeguard capital adequacy. Further details can be found in sections "Risk appetite and capacity" and "Key risk metrics".
- Capital planning: The risk appetite thresholds for capital adequacy metrics constitute boundaries which have to be met in the strategic plan to safeguard capital adequacy on a forward-looking basis. Further details can be found in section "Strategic and capital plan".
- Stress testing: Capital plan figures are also considered under various stress test scenarios to prove resilience and overall viability of the bank. Regulatory and economic capital adequacy metrics are also subject to regular stress tests throughout the year to constantly evaluate Deutsche Bank's capital position in hypothetical stress scenarios and to detect vulnerabilities under stress. Further details can be found in section "Stress testing".
- Capital adequacy assessment: Although capital adequacy is constantly monitored throughout the year, the ICAAP concludes with a dedicated annual capital adequacy assessment (CAS). The assessment consists of a Management Board statement about Deutsche Bank's capital adequacy, which is linked to specific conclusions and management actions to be taken to safeguard capital adequacy on a forward-looking basis.

As part of its ICAAP, Deutsche Bank distinguishes between a normative and economic internal perspective. The normative internal perspective refers to a multi-year assessment of the ability to fulfil all capital-related legal requirements and supervisory demands on an ongoing basis under a baseline and adverse scenario. The economic internal perspective refers to an internal process aimed at capital adequacy using internal economic capital demand models and an internal economic capital supply definition. Both perspectives focus on maintaining the continuity of Deutsche Bank on an ongoing basis.

Stress testing

Deutsche Bank has implemented a stress test framework to satisfy internal as well as external stress test requirements. The internal stress tests are based on in-house developed methods and inform a variety of risk management use cases (risk type specific as well as cross risk). Internal stress tests form an integral part of our risk management framework complementing traditional risk measures. The cross-risk stress test framework, the Group Wide Stress Test Framework (GWST), serves a variety of bank management processes, in particular the strategic planning process, the ICAAP, the risk appetite framework and capital allocation. Capital plan stress testing is performed to assess the viability of our capital plan in adverse circumstances and to demonstrate a clear link between risk appetite, business strategy, capital plan and stress testing. The regulatory stress tests, e.g. the EBA stress test and the US-based CCAR (Comprehensive Capital Analysis and Review) stress tests, are strictly following the processes and methodologies as prescribed by the regulatory authorities.

Our internal stress tests are performed on a regular basis in order to assess the impact of a severe economic downturn as well as adverse bank-specific events on our risk profile and financial position. Our stress testing framework comprises regular sensitivity-based and scenario-based approaches addressing different severities and localizations. We include all material risk types into our stress testing activities. These activities are complemented by portfolio- and country-specific downside analysis as well as further regulatory requirements, such as annual reverse stress tests and additional stress tests requested by our regulators on group or legal entity level. Our methodologies undergo regular scrutiny from Deutsche Bank's internal validation team (Model Risk Management) whether they correctly capture the impact of a given stress scenario.

The initial phase of our cross-risk stress test consists of defining a macroeconomic downturn scenario by ERM Risk Research in cooperation with business specialists. ERM Risk Research monitors the political and economic development around the world and maintains a macro-economic heat map that identifies potentially harmful scenarios. Based on quantitative models

and expert judgments, economic parameters such as foreign exchange rates, interest rates, GDP growth or unemployment rates are set accordingly to reflect the impact on our business. The scenario parameters are translated into specific risk drivers by subject matter experts in the risk units. Based on our internal models framework for stress testing, the following major metrics are calculated under stress: risk-weighted assets, impacts on profit and loss and economic capital by risk type. These results are aggregated at the Group level, and key metrics such as the CET 1 ratio, ECA ratio, MREL ratio and Leverage Ratio under stress are derived. Stress impacts on the Liquidity Coverage Ratio (LCR) and the Liquidity Reserve are also considered. The time-horizon of internal stress tests is between one and five years, depending on the use case and scenario assumptions. The Enterprise Risk Committee (ERC) reviews the final stress results. After comparing these results against our defined risk appetite, the ERC also discusses specific mitigation actions to remediate the stress impact in alignment with the overall strategic and capital plan if certain limits are breached. The results also feed into the recovery planning which is crucial for the recoverability of the Bank in times of crisis. The outcome is presented to senior management up to the Management Board to raise awareness on the highest level as it provides key insights into specific business vulnerabilities and contributes to the overall risk profile assessment of the bank.

The group wide stress tests performed in 2020 indicated that the bank’s capitalization together with available mitigation measures as defined in the Group Recovery Plan allow it to reach the internally set stress exit level.

The cross-risk reverse stress test leverages the GWST framework and is typically performed annually in order to challenge our business model by determining scenarios which would cause us to become unviable. Such a reverse stress test is based on a hypothetical macroeconomic scenario enriched by idiosyncratic events based on the top risks monitored by each risk type. Comparing such a hypothetical scenario resulting in the Bank’s non-viability to the current economic environment, we consider the probability of occurrence of such a hypothetical stress scenario as extremely low. Given this, we do not believe that our business continuity is at risk.

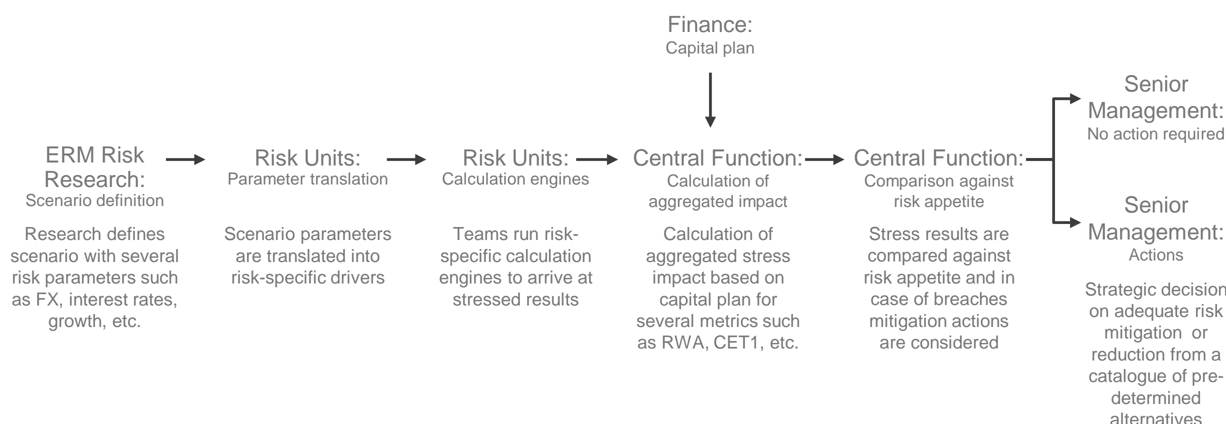
In 2020, we have further strengthened our framework through the following initiatives:

- Roll out and implementation of ‘Consensus’ based macro forecasts for our internal stress test baseline scenarios
- Link the stress testing platform with the capital application tool to better capture second order effects.

In addition to the GWST that includes all material risk types and major revenue streams, we have individual stress test programs in place for all relevant risk metrics in line with regulatory requirements. For the relevant stress test programs we refer to the sections describing the individual risk management methods.

Deutsche Bank also took part in the US-based CCAR stress test, as implemented pursuant to the US Dodd-Frank Act. The Federal Reserve (FRB) publicly disclosed that it did not object to the capital plans submitted by DB USA Corporation and DWS USA Corporation.

GWST framework of Deutsche Bank Group



Risk measurement and reporting systems

Our risk measurement systems support regulatory reporting and external disclosures, as well as internal management reporting across credit, market, liquidity, cross, business, operational and reputational risks. The risk infrastructure incorporates the relevant legal entities and business divisions and provides the basis for reporting on risk positions, capital adequacy and limit, threshold or target utilization to the relevant functions on a regular and ad-hoc basis. Established units within Finance and the Risk-Function assume responsibility for measurement, analysis and reporting of risk while promoting

sufficient quality and integrity of risk-related data. Our risk management systems are reviewed by Group Audit following a risk-based audit approach.

Deutsche Bank's reporting is an integral part of Deutsche Bank's risk management approach and as such aligns with the organizational setup by delivering consistent information on Group level and for material legal entities as well as breakdowns by risk types, business division and material business units.

The following principles guide Deutsche Bank's "risk measurement and reporting" practices:

- Deutsche Bank monitors risks taken against risk appetite and risk-reward considerations on various levels across the Group, e.g. Group, business divisions, material business units, material legal entities, risk types, portfolio and counterparty levels.
- Risk reporting is required to be accurate, clear, useful and complete and must convey reconciled and validated risk data to communicate information in a concise manner to ensure, across material Financial and Non-Financial Risks, the bank's risk profile is clearly understood.
- Senior risk committees, such as the Enterprise Risk Committee (ERC) and the Group Risk Committee (GRC), as well as the Management Board who are responsible for risk and capital management receive regular reporting (as well as ad-hoc reporting as required).
- Dedicated teams within Deutsche Bank proactively manage material Financial and Non-Financial Risks and must ensure that required management information is in place to enable proactive identification and management of risks and avoid undue concentrations within a specific Risk Type and across risks (Cross-Risk view).

In applying the previously mentioned principles, Deutsche Bank maintains a common basis for all risk reports and aims to minimize segregated reporting efforts to allow Deutsche Bank to provide consistent information, which only differs by granularity and audience focus.

The Bank identifies a large number of metrics within its risk measurement systems which support regulatory reporting and external disclosures, as well as internal management reporting across risks and for material risk types. Deutsche Bank designates a subset of those as "Key Risk Metrics" that represent the most critical ones for which the Bank places an appetite, limit, threshold or target at Group level and / or are reported routinely to senior management for discussion or decision making. The identified Key Risk Metrics include Capital Adequacy and Liquidity metrics; further details can be found in the section "Key risk metrics".

While a large number of reports are used across the Bank, Deutsche Bank designates a subset of these as "Key Risk Reports" that are critical to support Deutsche Bank's Risk Management Framework through the provision of risk information to senior management and therefore enable the relevant governing bodies to monitor, steer and control the Bank's risk taking activities effectively.

The main reports on risk and capital management that are used to provide Deutsche Bank's central governance bodies with information relating to the Group risk profile are the following:

- The monthly Risk and Capital Profile (RCP) report is a Cross-Risk report, provides a comprehensive view of Deutsche Bank's risk profile and is used to inform the ERC, the GRC as well as the Management Board and subsequently the Risk Committee of the Supervisory Board. The RCP includes Risk Type specific and Business-Aligned overviews and Enterprise-wide risk topics. It also includes updates on Key Group Risk Appetite Metrics and other Key Portfolio Risk Type Control Metrics as well as updates on Key Risk Developments, highlighting areas of particular interest with updates on corresponding risk management strategies.
- The Weekly Risk Report (WRR) is a weekly briefing covering high-level topical issues across key risk areas and is submitted every Friday to the Members of the ERC, the GRC and the Management Board and subsequently to the Members of the Risk Committee of the Supervisory Board. The WRR is characterized by the ad-hoc nature of its commentary as well as coverage of themes and focuses on more volatile risk metrics.
- Group-wide macroeconomic stress tests are typically performed twice per quarter (or more frequently if required). They are reported to and discussed in the ERC and escalated to the GRC if deemed necessary. The stressed key performance indicators are benchmarked against the Group Risk Appetite thresholds.

While the above reports are used at a Group level to monitor and review the risk profile of Deutsche Bank holistically, there are other, supplementing standard and ad-hoc management reports, including for Risk Types or Focus Portfolios, which are used to monitor and control the risk profile.

Recovery and resolution planning

The Bank Recovery and Resolution Directive (BRRD) was introduced in 2014 and updated in 2019 to reduce the likelihood of another financial crisis, enhance the resilience of institutions under stress, and eventually support the long term stability of the financial systems without exposing taxpayers' money to losses.

In line with the BRRD and relevant German law Sanierungs- und Abwicklungsgesetz (SAG), we introduce and continuously improve a recovery and resolution planning framework designed to anticipate, identify, mitigate and manage in a timely and coordinated manner the impact of adverse events on the Group and its ability to continue as a going concern.

The 2020 refresh of our Group recovery plan shows a well-established recovery planning framework and reflects targeted enhancements to address the latest regulatory feedback. Updates in this iteration of the plan include the following:

- The Recovery governance reflects the changes in the infrastructure and business functions, to facilitate a swift communication and transition between "business-as-usual" and "crisis" governing bodies;
- All recovery metrics levels have been aligned to the new Group risk appetite and regulatory guidance, integrating the Net Stable Funding Ratio (NSFR) and new early warning metrics to further improve our capacity to anticipate severe crisis, e.g. new metrics focusing on profitability; and
- The updated overall recovery capacity has been assessed against a COVID-19 severe stress scenario and is deemed sufficient to withstand severe capital and liquidity stress scenarios as per BRRD requirement.

Similarly to previous years, the 2020 Group recovery plan has been prepared with the joint effort of Risk, Finance and the business Divisions teams, with the oversight of the Management Board who is responsible for its approval and submission to the authority.

The Group resolution plan on the other hand is prepared by the resolution authorities, rather than by the bank itself. We work closely with the Single Resolution Board (SRB) and the Bundesanstalt für Finanzdienstleistungsaufsicht ("BaFin") who establish the Group resolution plan for Deutsche Bank, which is currently based on a single point of entry (SPE) bail-in as the preferred resolution strategy. Under the SPE bail-in strategy, the parent entity Deutsche Bank AG would be recapitalized through a write-down and/or conversion to equity of capital instruments (Common Equity Tier 1, Additional Tier 1, Tier 2) and other eligible liabilities in order to stabilize the Group. Within one month after the application of the bail-in tool to recapitalize an institution, the BRRD (as implemented in the SAG) requires such institution to prepare a business reorganization plan, addressing the causes of failure and aiming to restore the institution's long-term viability. To further support and improve operational continuity of the bank for resolution planning purposes, DB has largely completed additional preparations, such as adding termination stay clauses into client financial agreements governed by non-EU law and including continuity provisions into key service agreements. Financial contracts and service agreements governed by EU law are already covered by statutory laws which prevent termination solely due to any resolution measure.

The BRRD requires banks in EU member states to maintain minimum requirements for own funds and eligible liabilities (MREL) to make resolution credible by establishing sufficient loss absorption and recapitalization capacity. Apart from MREL-requirements, Deutsche Bank, as a global systemically important bank, is subject to global minimum standards for Total Loss-Absorbing Capacity (TLAC), which set out strict requirements for the amount and eligibility of instruments to be maintained for bail-in purposes. In particular, TLAC instruments must be subordinated (including so-called senior "non-preferred" debt, but also in the form of regulatory capital instruments) to other senior liabilities. This ensures that a bail-in would be applied first to equity and TLAC instruments, which must be exhausted before a bail-in may affect other senior ("preferred") liabilities such as deposits, derivatives, debt instruments that are "structured" and senior preferred plain vanilla bonds.

In the United States, Deutsche Bank AG is required under Title I of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), as amended, to prepare and submit to the Federal Reserve Board and the Federal Deposit Insurance Corporation ("FDIC") either a full or targeted resolution plan (the "U.S. Resolution Plan") on a timeline prescribed by such agencies. The U.S. Resolution Plan must demonstrate that Deutsche Bank AG has the ability to execute and implement a strategy for the orderly resolution of its designated material U.S. entities and operations. For foreign-based companies subject to these resolution planning requirements such as Deutsche Bank AG, the U.S. Resolution Plan relates only to subsidiaries, branches, agencies and businesses that are domiciled in or whose activities are carried out in whole or in material part in the United States.

Deutsche Bank AG filed its most recent full U.S. Resolution Plan in June 2018. The 2018 U.S. Resolution Plan described the single point of entry strategy for Deutsche Bank's U.S. operations and prescribed how DB USA Corporation would provide liquidity and capital support to its U.S. material entity subsidiaries and ensure their solvent wind-down outside of applicable resolution proceedings. In December 2018, Deutsche Bank received regulatory feedback from the Federal Reserve Board and FDIC, which found that Deutsche Bank's U.S. Resolution Plan had no deficiencies but identified one shortcoming in the plan, associated with governance mechanisms and related escalation triggers. Subsequent to the aforementioned feedback,

Deutsche Bank was required by the Federal Reserve Board and FDIC to demonstrate in a targeted submission that the shortcoming had been remediated. In accordance with Federal Reserve Board and FDIC requirements, Deutsche Bank AG filed this targeted submission in September 2020. In December 2020, the Federal Reserve Board and FDIC confirmed that the shortcoming had been remediated. Following this submission, Deutsche Bank's next targeted and full U.S. Resolution Plans are due in 2021 and 2024, respectively.

Risk and capital management

Capital management

Our Treasury function manages solvency, capital adequacy, leverage and bail-in capacity ratios at Group level and locally in each region, as applicable. Treasury implements our capital strategy, which itself is developed by the Group Risk Committee and approved by the Management Board. Treasury, directly or through the Group Asset and Liability Committee, manages, among other things, issuance and repurchase of shares and capital instruments, hedging of capital ratios against foreign exchange swings, setting capacities for key financial resources, design of shareholders' equity allocation, and regional capital planning. We are fully committed to maintaining our sound capitalization both from an economic and regulatory perspective. We continuously monitor and adjust our overall capital demand and supply in an effort to achieve an appropriate balance of the economic and regulatory considerations at all times and from all perspectives. These perspectives include book equity based on IFRS accounting standards, regulatory and economic capital as well as specific capital requirements from rating agencies.

Treasury manages the issuance and repurchase of capital instruments, namely Common Equity Tier 1, Additional Tier 1 and Tier 2 capital instruments as well as TLAC/MREL eligible debt instruments. Treasury constantly monitors the market for liability management trades. Such trades represent a countercyclical opportunity to create Common Equity Tier 1 capital by buying back our issuances below par.

Treasury manages the sensitivity of our capital ratios against swings in currencies. For this purpose, Treasury determines which currencies are to be hedged, develops suitable hedging strategies in close cooperation with Risk Management and finally executes these hedges. The capital invested into our foreign subsidiaries and branches in our core currencies Euro, US Dollar, Chinese Renminbi and Pound Sterling is not hedged in order to balance respective effects from movements in capital deduction items and risk weighted assets. The capital invested in non-core currencies is either partly hedged taking capital demand into account or fully hedged.

Resource limit setting

Usage of key financial resources is influenced through the following governance processes and incentives.

Target resource capacities are reviewed in our annual strategic plan in line with our CET 1 and Leverage Ratio ambitions. As a part of our quarterly process, the Group Asset and Liability Committee approves divisional resource limits for total capital demand (defined as the sum of Risk Weighted Assets (RWA) and certain RWA equivalents of Capital Deduction Items) and leverage exposure that are based on the strategic plan but adjusted for market conditions and the short-term outlook. Limits are enforced through a close monitoring process and an excess charging mechanism.

Overall regulatory capital requirements are principally driven by either our CET 1 ratio (solvency) or leverage ratio (leverage) requirements, whichever is the more binding constraint. For the internal capital allocation, the combined contribution of each segment to the Group's Common Equity Tier 1 ratio, the Group's Leverage ratio and the Group's Capital Loss under Stress are weighted to reflect their relative importance and level of constraint to the Group. Contributions to the Common Equity Tier 1 ratio and the Leverage ratio are measured through RWA and Leverage Ratio Exposure (LRE). The Group's Capital Loss under Stress is a measure of the Group's overall economic risk exposure under a defined stress scenario. Goodwill and other intangible assets are directly allocated to the respective segments, supporting the calculation of the allocated tangible shareholders equity and the respective rate of return.

Most of our subsidiaries and a number of our branches are subject to legal and regulatory capital requirements. In developing, implementing and testing our capital and liquidity, we fully take such legal and regulatory requirements into account. Any material capital requests of our branches and subsidiaries across the globe are presented to and approved by the Group Investment Committee prior to execution.

Further, Treasury is represented on the Investment Committee of the largest Deutsche Bank pension fund which sets the investment guidelines for this fund. This representation is intended to ensure that pension assets are aligned with pension liabilities, thus protecting our capital base.

Risk identification and assessment

We regularly identify risks to our business' and infrastructure's operations, also under stressed conditions, and assess the materiality of identified risks with respect to their severity and likelihood of materialization. The process incorporates input from both first line and second line of defense. The assessment of current risks is complemented by a view on emerging risks applying a forward-looking perspective. This risk identification and assessment process results in our risk inventory which captures the material risks across relevant businesses and entities. Regular updates to the risk inventory are reported to senior management together with the risk profile and inform our risk management processes.

This framework provides the basis, on which we can aggregate risks for the Group across businesses and entities. The resulting inventory of risks, after review and challenge by senior management, informs key risk management processes including the development of stress scenarios tailored to Deutsche Bank's risk profile, the calibration of risk appetite and risk profile monitoring and reporting. Risks in the inventory are also mapped to the following risk types as part of the risk type taxonomy: credit risk, market risk, operational risk, liquidity risk, business risk, reputational risk and cross risk.

Credit risk management and asset quality

Credit risk framework

Credit Risk arises from all transactions where actual, contingent or potential claims against any counterparty, borrower, obligor or issuer (which we refer to collectively as "counterparties") exist, including those claims that we plan to distribute. These transactions are typically part of our non-trading lending activities (such as loans and contingent liabilities) as well as our direct trading activity with clients (such as OTC derivatives). These also include traded bonds and debt securities. Carrying values of equity investments are also disclosed in our Credit Risk section. We manage the respective positions within our market risk and credit risk frameworks.

Based on the Risk Type Taxonomy, Credit Risk is grouped into five categories, namely default/ migration risk, country risk, transaction/settlement risk (exposure risk), mitigation (failure) risk and concentration risk. This is complemented by a regular risk identification and materiality assessment.

- Default/Migration Risk as the main element of credit risk, is the risk that a counterparty defaults on its payment obligations or experiences material credit quality deterioration increasing the likelihood of a default.
- Country Risk is the risk that otherwise solvent and willing counterparties are unable to meet their obligations due to direct sovereign intervention or policies.
- Transaction/Settlement Risk (Exposure Risk) is the risk that arises from any existing, contingent or potential future positive exposure.
- Mitigation Risk is the risk of higher losses due to risk mitigation measures not performing as anticipated.
- Concentration Risk is the risk of an adverse development in a specific single counterparty, country, industry or product leading to a disproportionate deterioration in the risk profile of Deutsche Bank's credit exposures to that counterparty, country, industry or product.

We manage our credit risk using the following philosophy and principles:

- Our Credit Risk Management function is independent from our business divisions and in each of our divisions, credit decision standards, processes and principles are consistently applied.
- A key principle of credit risk management is client credit due diligence. Our client selection is achieved in collaboration with our business division counterparts who stand as a first line of defense.
- We aim to prevent undue concentration and tail-risks (large unexpected losses) by maintaining a diversified credit portfolio. Client, industry, country and product-specific concentrations are assessed and managed against our risk appetite.
- We maintain underwriting standards aiming to avoid large undue credit risk on a counterparty and portfolio level. In this regard we extend unsecured cash positions and actively use hedging for risk mitigation purposes. Additionally, we strive to secure our derivative portfolio through collateral agreements and may additionally hedge concentration risks to further mitigate credit risks from underlying market movements.
- Every new credit facility and every extension or material change of an existing credit facility (such as its tenor, collateral structure or major covenants) to any counterparty requires credit approval at the appropriate authority level. We assign

credit approval authorities to individuals according to their qualifications, experience and training, and we review these periodically.
- We manage all our credit exposures to each obligor across our consolidated Group on the basis of the “one obligor principle” (as required under CRR Article 4(1)(39)), under which all facilities to a group of borrowers which are linked to each other (for example by one entity holding a majority of the voting rights or capital of another) are consolidated under one group.
- We have established within Credit Risk Management – where appropriate – specialized teams for deriving internal client ratings, analyzing and approving transactions, monitoring the portfolio or covering workout clients. For transaction approval purposes, structured credit risk management teams are aligned to the respective lending business areas.
- Where required, we have established processes to report credit exposures at legal entity level.

Measuring credit risk

Credit Risk is measured by credit rating, regulatory and internal capital demand and key credit metrics mentioned below.

The credit rating is an essential part of the Bank’s underwriting and credit process and builds the basis for risk appetite determination on a counterparty and portfolio level, credit decision and transaction pricing as well the determination of regulatory capital demand for credit risk. Each counterparty must be rated and each rating has to be reviewed at least annually. Ongoing monitoring of counterparties helps keep ratings up-to-date. There must be no credit limit without a credit rating. For each credit rating the appropriate rating approach has to be applied and the derived credit rating has to be established in the relevant systems. Different rating approaches have been established to best reflect the specific characteristics of exposure classes, including central governments and central banks, institutions, corporates and retail.

Counterparties in our non-homogenous portfolios are rated by our independent Credit Risk Management function. Country risk related ratings are provided by ERM Risk Research.

Our rating analysis is based on a combination of qualitative and quantitative factors. When rating a counterparty we apply in-house assessment methodologies, scorecards and our 21-grade rating scale for evaluating the credit-worthiness of our counterparties.

Changes to existing credit models and introduction of new models are approved by the Regulatory Credit Risk Model Committee (RCRMC) chaired by the Head of CRM before the models are used for credit decisions and capital calculation for the first time or before they are significantly changed. Separately, an approval by the Head of Model Risk Management is required. Where appropriate, less significant changes can be approved by a delegate of either function under a delegated authority. Proposals with high impact are recommended for approval to the Group Risk Committee. Regulatory approval may also be required. The model validation is performed independently of model development by Model Risk Management. The results of the regular validation processes as stipulated by internal policies are brought to the attention of the Regulatory Credit Risk Model Forum (RCRMF) and the RCRMC, even if the validation results do not lead to a change.

We measure risk-weighted assets to determine the regulatory capital demand for credit risk using “advanced”, “foundation” and “standard” approaches of which advanced and foundation are approved by our regulator.

The advanced Internal Ratings Based Approach (IRBA) is the most sophisticated approach available under the regulatory framework for credit risk and allows us to make use of our internal credit rating methodologies as well as internal estimates of specific further risk parameters. These methods and parameters represent long-used key components of the internal risk measurement and management process supporting the credit approval process, the economic capital and expected loss calculation and the internal monitoring and reporting of credit risk. The relevant parameters include the probability of default (PD), the loss given default (LGD) and the maturity (M) driving the regulatory risk-weight and the credit conversion factor (CCF) as part of the regulatory exposure at default (EAD) estimation. For the majority of derivative counterparty exposures as well as securities financing transactions (SFT), we make use of the internal model method (IMM) in accordance with CRR and SolvV to calculate EAD. For most of our internal rating systems more than seven years of historical information is available to assess these parameters. Our internal rating methodologies aim at point-in-time rather than a through-the-cycle rating, but in line with regulatory solvency requirements, they are calibrated based on long-term averages of observed default rates.

The foundation IRBA is an approach available under the regulatory framework for credit risk allowing institutions to make use of their internal rating methodologies while using pre-defined regulatory values for all other risk parameters. Parameters subject to internal estimates include the PD while the LGD and the CCF are defined in the regulatory framework. Foundation IRBA remains in place for some exposures stemming from ex-Postbank.

We apply the standardized approach to a subset of our credit risk exposures. The standardized approach measures credit risk either pursuant to fixed risk weights, which are predefined by the regulator, or through the application of external ratings. We assign certain credit exposures permanently to the standardized approach in accordance with Article 150 CRR. These are predominantly exposures to the Federal Republic of Germany and other German public sector entities as well as

exposures to central governments of other European Member States that meet the required conditions. These exposures make up the majority of the exposures carried in the standardized approach and receive predominantly a risk weight of zero percent. For internal purposes, however, these exposures are subject to an internal credit assessment and fully integrated in the risk management and economic capital processes.

In addition to the above described regulatory capital demand, we determine the internal capital demand for credit risk via an economic capital model.

We calculate economic capital for the default risk, country risk and settlement risk as elements of credit risk. In line with our economic capital framework, economic capital for credit risk is set at a level to absorb with a probability of 99.9 % very severe aggregate unexpected losses within one year. Our economic capital for credit risk is derived from the loss distribution of a portfolio via Monte Carlo Simulation of correlated rating migrations. The loss distribution is modeled in two steps. First, individual credit exposures are specified based on parameters for the probability of default, exposure at default and loss given default. In a second step, the probability of joint defaults is modeled through the introduction of economic factors, which correspond to geographic regions and industries. The simulation of portfolio losses is then performed by an internally developed model, which takes rating migration and maturity effects into account. Effects due to wrong-way derivatives risk (i.e., the credit exposure of a derivative in the default case is higher than in non-default scenarios) are modeled by applying our own alpha factor when deriving the exposure at default for derivatives and securities financing transactions under the CRR. We allocate expected losses and economic capital derived from loss distributions down to transaction level to enable management on transaction, customer and business level.

Besides the credit rating which is the key credit risk metric we apply for managing our credit portfolio, including transaction approval and the setting of risk appetite, we establish credit limits for all credit exposures. Credit limits set forth maximum credit exposures we are willing to assume over specified periods. In determining the credit limit for a counterparty, we consider the counterparty’s credit quality by reference to our internal credit rating. Credit limits and credit exposures are both measured on a gross and net basis where net is derived by deducting hedges and certain collateral from respective gross figures. For derivatives, we look at current market values and the potential future exposure over the relevant time horizon which is based upon our legal agreements with the counterparty. We generally also take into consideration the risk-return characteristics of individual transactions and portfolios. Risk-Return metrics explain the development of client revenues as well as capital consumption. In this regard we also look at the client revenues in relation to the balance sheet consumption.

IFRS 9 Impairment Approach

The impairment requirements of IFRS 9 apply to all credit exposures that are measured at amortized cost or fair value through other comprehensive income and to off balance sheet lending commitments, such as loan commitments and financial guarantees. For purposes of our impairment approach, we refer to these instruments as financial assets.

The Group determines its credit loss allowances in accordance with IFRS 9 as follows:

- Stage 1 reflects financial instruments where it is assumed that credit risk has not increased significantly after initial recognition.
- Stage 2 contains all financial assets, that are not defaulted, but have experienced a significant increase in credit risk since initial recognition.
- Stage 3 consists of financial assets of clients which are defaulted in accordance of Capital Requirements Regulation (CRR) under Art. 178. The Group defines these financial assets as impaired.
- Significant increase in Credit Risk is determined using quantitative and qualitative information based on the Group’s historical experience, credit risk assessment and forward-looking information.
- Purchased or Originated Credit Impaired (“POCI”) financial assets are assets where at the time of initial recognition there is objective evidence of impairment.

The IFRS 9 impairment approach is an integral part of the Group’s Credit Risk Management. The estimation of ECL (Expected Credit Loss) which is the basis for the Group’s credit loss allowance is either performed via the automated ECL calculation using the Group’s ECL engine or determined by Credit Officers. In both cases, the calculation takes place for each financial asset individually. Similarly, the determination of the need to transfer between stages is made on an individual asset basis. The Group ECL engine is used to calculate the credit loss allowance for all financial assets in the homogeneous portfolio, for all financial assets in the non-homogenous portfolios in Stage 1 and Stage 2. For every individual financial asset the credit loss allowance in our non-homogeneous portfolio in Stage 3 and for POCI assets is determined by Credit Officers.

The Group uses three main components to measure ECL. These are Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD). The Group leveraged existing parameters used for determination of capital demand under the Basel Internal Ratings Based Approach and internal risk management practices as much as possible to calculate ECL. These parameters are adjusted where necessary to comply with IFRS 9 requirements (e.g. use of point in time ratings and removal of downturn elements in the regulatory parameters). Incorporating forecasts of future economic conditions into the

measurement of expected credit losses influences the allowance for credit losses in Stage 1 and 2. In order to calculate lifetime expected credit losses, the Group's calculation includes deriving the corresponding lifetime PDs from migration matrices that reflect economic forecasts.

For details on the Group's accounting policy related to IFRS 9 Impairment, please refer to Note 1 - Significant Accounting Policies and Critical Accounting Estimates of the Consolidated Financial Statements.

Stage Determination

At initial recognition, financial assets which are not POCI are reflected in Stage 1. If there is a significant increase in credit risk, the financial asset is transferred to Stage 2. A significant increase in credit risk is determined by using rating-related and process-related indicators. In contrast, the assignment of financial assets to Stage 3 is based on the status of the obligor being in default (i.e. in case of default, all financial assets of the obligor are transferred to Stage 3). The Group has not changed existing stage trigger mechanics and rules due to COVID-19 with following exceptions: EBA compliant moratoria and concessions granted to clients whose credit standing would not be significantly affected by COVID-19. In accordance with the EBA guidance, delayed payments of interest and principle to such clients would not trigger stage migration or a default. Forbearance measures granted to clients with financial difficulties triggered by COVID-19 assuming that the respective business model and the financial situation will allow a rapid stabilization after the crisis, would not trigger a stage migration.

Rating-related indicators: Based on a dynamic change in counterparty PDs that is linked to all transactions with the counterparty, the Group compares lifetime PD at the reporting date, with lifetime PD expectations at the date of initial recognition. Based on historically observed migration behavior and a sampling of different economic scenarios, a lifetime PD distribution is obtained. A quantile of this distribution, which is defined for each counterparty class, is chosen as the lifetime PD threshold. If the remaining lifetime PD of a transaction according to current expectations exceeds this threshold, the financial asset experienced a significant increase in credit risk and is transferred to Stage 2. The quantiles used to define Stage 2 thresholds are determined using expert judgment, are validated annually and have not changed as a result of COVID-19. The threshold applied varies depending on the original credit quality of the borrower, past lifetime, remaining lifetime and counterparty class.

Process-related Indicators: Process-related indicators are derived via the use of existing risk management indicators, which allow the Group to identify whether the credit risk of financial assets has significantly increased. These include obligors being added mandatorily to a credit watchlist, being mandatorily transferred to workout status, payments being 30 days or more overdue or in forbearance. Aligned to the Group, former Postbank indicators consist of credit watchlist, which include clients with workout status and forbearance measures, and payments being 30 days or more overdue.

As long as the conditions for one or more of the process-related or rating-related indicators is fulfilled and the obligor of the financial asset has not met the definition of default, the asset will remain in Stage 2. If the indicators are no longer fulfilled and the financial asset is not defaulted, the financial asset transfers back to Stage 1. If the obligor defaults, all financial assets of the obligor are allocated to Stage 3. If at a later date a previously defaulted financial asset ceases to be classified as defaulted, it transfers back to Stage 2 or Stage 1, when probation periods defined by regulatory guidance are met.

The expected credit loss calculation for Stage 3 distinguishes between transactions in homogeneous and non-homogenous portfolios, and POCI financial assets. For transactions that are in Stage 3 and in a homogeneous portfolio, the Group uses the ECL engine to determine the credit loss allowance. Whereas the credit loss allowance for non-homogeneous portfolios in Stage 3, as well as for POCI assets are determined by Credit Officers. Since a Stage 3 transaction is defaulted, the probability of default is equal to 100 %. To incorporate the currently available information, the LGD parameters are modelled to be time-dependent, thus capture the time dependency of recovery expectation after default.

Estimation Techniques for Input Factors

The one-year PD for counterparties is derived from our internal rating systems. The Group assigns a PD to each relevant counterparty credit exposure based on a 21-grade master rating scale for all of our exposure.

The counterparty ratings assigned are derived based on internally developed rating models which specify consistent and distinct customer-relevant criteria and assign a rating grade based on a specific set of criteria as given for a certain customer. The set of criteria is generated from information sets relevant for the respective customer segments including general customer behavior, financial and external data. The methods in use range from statistical scoring models to expert-based models taking into account the relevant available quantitative and qualitative information. Expert-based models are usually applied for counterparties in the exposure classes "Central governments and central banks", "Institutions" and "Corporates" with the exception of those "Corporates" segments for which sufficient data basis is available for statistical scoring models. For the latter as well as for the retail segment statistical scoring or hybrid models combining both approaches are commonly used. Quantitative rating methodologies are developed based on applicable statistical modelling techniques, such as logistic regression.

One-year PDs are extended to multi-year PD curves using through-the-cycle (TTC) matrices and macroeconomic forecasts. Based on these forecasts, TTC matrices are transformed into point-in-time (PIT) rating migration matrices, typically for a two year period. The calculation of the PIT matrices is performed by specifying a direct link between macroeconomic variables and the default and rating behavior of counterparties. The macroeconomic forecasts adjust the distribution of the respective macroeconomic factors and consequently, the rating migration matrices that define migration and default probabilities. This approach can be interpreted as a Monte-Carlo simulation of multiple scenarios. However, for reasons of efficiency, the actual calculation is based on equivalent analytical techniques. Multi-year PDs and rating migration matrices are thus derived and applied to portfolios in scope for IFRS 9 which are categorized according to the following counterparty classes: retail Germany, retail Spain, retail Italy, financial institutions, midcaps, corporates, and sovereigns.

LGD is defined as the likely loss intensity in case of a counterparty default. It provides an estimation of the exposure that cannot be recovered in a default event and therefore captures the severity of a loss. Conceptually, LGD estimates are independent of a customer's probability of default. The LGD models ensure that the main drivers for losses (i.e., different levels and quality of collateralization and customer or product types or seniority of facility) are reflected in specific LGD factors. In our LGD models we assign collateral type specific LGD parameters to the collateralized exposure (collateral value after application of haircuts). In our LGD models used outside of former Postbank we assign collateral type specific LGD parameters to the collateralized exposure (collateral value after application of haircuts).

The Exposure at Default (EAD) over the lifetime of a financial asset is modelled taking into account expected repayment profiles. We apply specific Credit Conversion Factors (CCFs) in order to calculate an EAD value. Conceptually, the EAD is defined as the expected amount of the credit exposure to a counterparty at the time of its default. In instances where a transaction involves an unused limit, a percentage share of this unused limit is added to the outstanding amount in order to appropriately reflect the expected outstanding amount in case of a counterparty default. This reflects the assumption that for commitments, the utilization at the time of default might be higher than the current outstanding balance. In case a transaction involves an additional contingent component (i.e., guarantees) a further percentage share is applied as part of the CCF model in order to estimate the amount of guarantees drawn in case of default. The calibrations of such parameters are based on statistical experience as well as internal historical data and consider counterparty and product type specifics.

Expected Lifetime

The expected lifetime of a financial asset is a key factor in determining the lifetime expected credit losses (LTECL). Lifetime expected credit losses represent default events over the expected life of a financial asset. The Group measures expected credit losses considering the risk of default over the maximum contractual period (including any borrower's extension options) over which the Group is exposed to credit risk.

Retail overdrafts, credit card facilities and certain corporate revolving facilities typically include both a loan and an undrawn commitment component. The expected lifetime of such on-demand facilities exceeds their contractual life as they are typically cancelled only when the Group becomes aware of an increase in credit risk. The expected lifetime is estimated by taking into consideration historical information and the Group's Credit Risk Management actions such as credit limit reductions and facility cancellation. Where such facilities are subject to an individual review by Credit Risk Management, the lifetime for calculating expected credit losses is 12 months. For facilities not subject to individual review by Credit Risk Management, we apply a lifetime for calculating expected credit losses of 24 months.

Consideration of Collateralization in IFRS 9 Expected Credit Loss Calculation

The ECL engine projects the level of collateralization for each point in time in the life of a financial asset. For the reporting date, the engine uses the existing collateral distribution process applied for the DB's Economic Capital model. In this model, the liquidation value of each eligible collateral is allocated to relevant financial assets to distinguish between collateralized and uncollateralized parts of each exposure.

For personal collateral (e.g. guarantees), the ECL engine assumes that the relative level of collateralization remains stable over time. In case of an amortizing loan the absolute exposure and collateral values decrease together over time. For physical collateral (e.g. residential property), the ECL shall assume that the absolute collateral value remains constant. In case of an amortizing loan, the collateralized part of the exposure increases over time and consequently the exposure is likely to be fully collateralized at some point.

Certain financial guarantee contracts are integral to the financial assets guaranteed. In such cases, the financial guarantee is considered as collateral for the financial asset and the benefit of the guarantee is used to mitigate the ECL of the guaranteed financial asset.

For further details on how we determine the liquidation value of our collaterals please refer to section "Managing and Mitigation of Credit Risk"

Forward Looking Information

Under IFRS 9, the allowance for credit losses is based on reasonable and supportable forward looking information available without undue cost or effort, which takes into consideration past events, current conditions and forecasts of future economic conditions.

To incorporate forward looking information into the Group’s allowance for credit losses, we use two key elements:

– As its base scenario, the Group uses external survey-based macroeconomic forecasts (e.g. consensus view on GDP and unemployment rates) supplemented by market-implied projections of interest and FX rates. In addition, our scenario expansion model, which has been initially developed for stress testing, is used for forecasting macroeconomic variables that are not covered by external consensus data or market sources to determine lifetime PD’s. All forecasts are assumed to reflect the most likely development of the respective variables and are updated at least once per quarter.

– Statistical techniques are then applied to transform the base scenario into a multiple scenario analysis. The scenarios specify deviations from the baseline forecasts. The scenario distribution is then used for deriving multi-year PD curves for different rating and counterparty classes, which are applied in the calculation of expected credit losses and in the identification of significant deterioration in credit quality of financial assets as described above in the rating-related indicators.

The general use of forward looking information, including macro-economic factors, as well as adjustments taking into account extraordinary factors (e.g. COVID-19), are monitored by the Group's Risk and Finance Credit Loss Provision Forum. In certain situations, Credit Risk officers and senior management may have additional information in general or in relation to specific portfolios that are not taken into account by the statistical model. In such situations, the Group would apply a judgmental overlay.

The Group’s standard approach to incorporating macroeconomic variables into the calculation of the ECL estimate is to incorporate forecasts for the next two years, using eight discrete quarterly observations. This methodology, which reflects the historical relationship between movements in those macroeconomic variables and default rates, was developed during the implementation of IFRS 9 and applied as of December 31, 2019.

Impact of COVID-19 Pandemic on Forward Looking Information

To fight the COVID-19 pandemic in 2020, many countries imposed strict lockdowns of economic activity – particularly with regards to travel, hospitality and events. The lockdowns together with the collapse in consumer and business sentiment caused one of the most severe recessions in recent history. As the pandemic unfolded, economists slashed their forecasts for variables such as Gross Domestic Product and employment.

Downward revisions of economic forecasts accelerated in late March 2020 as it became clear that the pandemic could not be contained and countries around the world went into lockdown. The consensus data improved moderately since May 2020 when many businesses were allowed to re-open again. Moreover, many countries provided support and stimulus packages to firms, workers and to those unemployed that helped to mitigate the impact of COVID-19, which was initially not fully reflected in the consensus forecasts. Later forecasts increasingly took these stimulus packages into account which contributed to further improvements of economic forecasts.

Economists estimated another GDP contraction in the fourth quarter of 2020 of e.g. around 2-3 % Quarter-on-Quarter in the European Monetary Union (EMU) because business activity and consumer sentiment suffer from a second wave of COVID-19 infections. The aggregated medium-term outlook for 2021 and beyond is so far mitigated by better-than-expected economic data in the third quarter of 2020 and the prospect of effective vaccines against COVID-19.

Based on Management’s opinion that the standard methodology did not provide a reliable indicator for future credit losses as it took a very short term view of the development of those variables and considering regulatory guidance provided, Management determined that the most representative approach in 2020 for estimating expected credit losses was to reduce the weight of some of the short-term data (as it had lost relevance since it did not take into account the unprecedented levels of government support and fiscal stimulus being provided across the global economy) and derive adjusted inputs based on longer term averages. This approach better reflected underlying credit conditions in 2020 and avoided the build-up of unrealistically high credit reserves in the first half of the year and their subsequent release in the third and fourth quarter of 2020. As a result, the Group viewed it more appropriate to apply an overlay during 2020 to ensure its ECL provision was adequate.

The overlay is based on averaging forecasts for GDP and unemployment rates over the next three years in its ECL estimation, which is the basis for the bank’s year end 2020 Credit Loss Allowance.

The following table provides an overview of the three year forward looking information, which determines the three year average used as input for calculating and the Group’s allowance for credit losses for the year end 2020.

Please note that the economic data used in the forward-looking information for the calculation of the allowance for credit losses may differ from forecasts used in the economic outlook section. The reason is that the economic outlook is based on the specific views of DB Research economists whereas forward-looking information is derived from broader consensus and market-implied projections as aggregated, expanded and quality-assured within Risk Management.

IFRS 9 – Forward Looking Information applied for the year end 2020

	December 2020[1,2]		
	Year 1 (4 quarter avg)	Year 2 (4 quarter avg)	Year 3 (4 quarter avg)
Credit - ITX Europe 125	52.81	–	–
FX - EUR/USD	1.20	–	–
GDP Eurozone	1.38 %	4.37 %	2.32 %
GDP Germany	1.54 %	4.01 %	2.08 %
GDP Italy	1.92 %	3.80 %	1.93 %
GDP USA	2.80 %	3.35 %	2.29 %
Rate - US Treasury 2y	0.17 %	–	–
Unemployment - Eurozone	8.86 %	8.35 %	7.94 %
Unemployment - Germany	4.30 %	3.95 %	3.72 %
Unemployment - Italy	10.65 %	10.38 %	9.85 %
Unemployment - Spain	17.89 %	16.32 %	15.49 %
Unemployment - USA	6.40 %	5.19 %	4.46 %

[1] Rates, FX and credit spreads as per December 7 release; GDP, unemployment forecasts updated per December 16,2020.
[2] Year 1 equals Q4 2020 to Q3 2021, Year 2 equals Q4 2021 to Q3 2022 and Year 3 equals Q4 2022 to Q3 2023

In the third quarter 2020, the Group introduced an additional overlay and retained the overlay for the year end 2020 due to the fact that the level of uncertainty remains high, in particular as the COVID-19 pandemic, related lock-down measures and associated economic support measures offered by central governments will further hamper the ability to assess the true state of borrowers' capacity to repay their financial obligations, also taking into account the emerging downsides expected in particular as moratoria are fading out (although partially extended, e.g. in Spain and Italy) and a second wave of lockdown measures started in December 2020.

Taking into account the above mentioned overlays, the Group reported a provision for credit losses of €1.8 billion for the year ended 2020, which is a significant increase compared to € 723 million for the year ended 2019. This is primarily driven by a significant increase in Stage 3 credit loss allowances due to client defaults following the COVID-19 pandemic, predominantly in the Investment Bank and Private Bank. Provisions for performing assets were mainly driven by the impact from including the forward looking element based on consensus forecast with charges in the first half of the year and subsequent releases in the second half. The accumulated full year impact with net releases in Stage 1 and Stage 2 was fully compensated by the additional overlay recorded in 2020.

Model Sensitivity

There are two main sources of ECL volatility for Stage 1 and 2 assets. Firstly, changes to the portfolio composition, the exposure profile or counterparty ratings, which are particularly important due to potential implications on stage determination, influence the level of ECL and thus the level of our Credit Loss Allowance.

Secondly, in addition to portfolio changes, ECL is also impacted by macroeconomic forecasts. As the relevant macroeconomic variables vary by counterparty class, ECL sensitivities to macroeconomic forecasts are portfolio-specific with GDP growth rates and unemployment rates in the Eurozone and the US as dominant factors overall.

The sensitivity of our model with respect to future changes in macroeconomic variables (MEVs) is illustrated in the following table, which provides the ECL impact for Stages 1 and 2 from a Downward and Upward shift across all scenarios used in the ECL calculation. Both shifts are applied in addition to the baseline ECL as of December 31, 2020, by specifying Downward and Upward MEV values that are all either one standard deviation above or below the baseline forecasts, e.g. shifting forecasted GDP rates by 2 percentage points on average.

ECL for Stage 3 is not affected and not reflected in the following tables as its modelling is independent of the macroeconomic scenarios.

IFRS 9 – Sensitivities of Forward Looking Information applied on Stage 1 and Stage 2

	Downward shift	ECL per Dec 31, 2020	Upward shift
Corporate Bank	425	293	213
Investment Bank	462	330	244
Private Bank	1,014	788	701
Asset Management	2	2	1
Capital Release Unit	10	8	6
Corporate & Other	17	9	5
Total	1,929	1,429	1,171

	Downward shift	ECL per Dec 31, 2019	Upward shift
Corporate Bank	374	241	170
Investment Bank	438	288	198
Private Bank	890	697	572
Asset Management	4	3	2
Capital Release Unit	13	10	7
Corporate & Other	29	12	6
Total	1,747	1,250	955

Focus Industries in light of COVID-19 Pandemic

While the negative implications of the COVID-19 pandemic are materializing across economies and sectors globally, certain industries are seeing particularly severe direct or indirect impacts. These sectors accounted for approximately 30 % of group credit loss provisions in the year 2020. The information below is based on an internal risk view that is not fully congruent with the NACE (Nomenclature des Activities Economiques dans la Communate Europeenne, which is the statistical classification of economic activities in the European Union) applied elsewhere in this report, e.g. in the Asset Quality section.

- Commercial real estate (€ 27 billion loan exposure as of December 31, 2020): Commercial real estate (CRE) has been severely affected by the COVID-19 pandemic, with the strongest impact noted on hotel and retail segments given the direct impact of lockdowns, travel restrictions and social distancing measures on these property types. Borrowers in these sectors have been faced with property closures, tenant rent deferral requests and tenant defaults which in turn have triggered a large number of requests for loan modifications and resulted in a significant increase of credit loss provisions in our CRE loan portfolio. The impact on other property types including multifamily, office, industrial and logistics has been more contained. CRE exposure (comprises Commercial Real Estate Group, APAC CRE exposures in the investment bank and non-recourse CRE business in the corporate bank) accounts for 6 % of the loan book. The risk profile of the portfolio improved in the fourth quarter as a result of selective de-risking initiatives, including loan sales in the US. Portfolios are managed to tight underwriting standards with regular stress tests under conservative assumptions. Moderate pre-crisis loan-to-value ratios (LTVs) averaging slightly below 60 % provide a substantial buffer to absorb declines in collateral values which have been most pronounced in the US hotel segment. Hotel exposures are concentrated in the U.S. and benefit from significant sponsor equity in the assets and demonstrated support in most cases, although sponsor support could weaken in an extended pandemic scenario.
- Oil & gas (€ 7 billion loan exposure as of December 31, 2020): Significant fall in travel and trade volumes, as well as the wider economic downturn, led to a meaningful contraction of demand for oil and a significant fall in prices in early 2020 before recovery in the second half of the year. There have been a number of bankruptcies among smaller/ weaker companies in 2020. Our loan exposure to the sector has fallen by approximately € 1 billion in 2020 and accounts for less than 2 % of the total loan book. We have seen an ongoing downward migration of credit ratings among our clients, however, portfolio risk is mitigated by a focus on more resilient oil & gas majors and national oil & gas companies. More than 80 % of net credit limits are to investment grade rated clients. Our exposure to the higher risk “shale” companies in North America is small since we have realigned our portfolio in recent years.
- Retail (excluding food/staples) (€ 4 billion loan exposure as of December 31, 2020): The impact of lockdowns and a drop in consumer confidence have added to the structural challenges the retail industry is facing, including digitalization and shifting consumer preferences. Consequently, we are seeing a downward migration of credit ratings within our portfolio. Our loan exposure accounts for ~ 1 % of the total loan book. Portfolio risks are mitigated by a focus on strong global brands with approximately two third of net credit limits to investment grade rated clients.
- Aviation (€ 3 billion loan exposure as of December 31, 2020): The industry is going through its deepest crisis in history. The International Air Transport Association (IATA) expects substantial losses across the sector, and bankruptcies have been observed among weaker airlines. Our loan exposure accounts for under 1 % of total loan book and portfolio risks are mitigated by a significant share of secured aircraft financing which is biased towards newer/ liquid aircraft. The unsecured portfolio is focused on developed market flag carriers, many of which benefit from robust government support packages.

– Leisure (€ 2 billion loan exposure as of December 31, 2020): The industry has been hit by a very sharp decline in both business and private travel during lockdowns. It is unlikely that volumes will recover to pre-crisis levels in the near-term. Loan exposure is contained at well under 1 % of the total loan book, with a focus on industry leaders in the hotels and casinos segment, mostly domiciled in the U.S. market. We have very limited exposure to tour operators and cruise lines.

IFRS 9 - Application of EBA guidance regarding Default, Forbearance and IFRS 9 in light of COVID-19 measures

EBA's "Statement on the application of the prudential framework regarding Default, Forbearance and IFRS 9 in light of COVID-19 measures" published on March 25, 2020 states that institutions are expected to use a degree of judgement and distinguish between borrowers whose credit standing would not be significantly affected by the current situation in the long term, and those who would be unlikely to restore their creditworthiness. The Bank performed portfolio reviews and applied this regulatory guidance to a number of clients mainly in the Investment Bank and Corporate Bank.

EBA is further of the view that the public and private moratoria, as a response to COVID-19 pandemic, do not have to be automatically classified as forbearance if the moratoria are not borrower specific, based on the applicable national law or on an industry or sector-wide private initiative agreed and applied broadly by relevant credit institutions. Deutsche Bank has introduced this guidance into its internal risk management processes.

Legislative and non-legislative moratoria and public guarantee schemes in light of COVID-19 pandemic

After the breakout of the COVID-19 pandemic, a number of governments issued programs offering legislative moratoria and guarantee schemes. Non-legislative moratoria programs have been developed to support our clients as well as individual measures have been agreed with our clients.

On April 2, 2020 and June 25, 2020 EBA published its Guidelines on legislative and non-legislative moratoria on loan repayments applied in light of the COVID-19 pandemic. These guidelines provide clarity on the treatment of legislative and non-legislative moratoria applied before September 30, 2020 and supplement the EBA Guidelines on the application of the definition of default in regards to the treatment of a distressed restructuring. On September 21, 2020, EBA announced that it "will phase out its Guidelines on legislative and non-legislative payment moratoria in accordance with its end of September deadline. The regulatory treatment set out in the Guidelines will continue to apply to all payment holidays granted under eligible payment moratoria prior to September 30, 2020".

On December 2, 2020 after closely monitoring the developments of the COVID-19 pandemic and, in particular, the impact of the second COVID-19 wave and the related government restrictions taken in many EU countries, the EBA has decided to reactivate its Guidelines on legislative and non-legislative moratoria.

The following table provides an overview of active and expired loans and advances subject to EBA-compliant moratoria, loans and advances subject to COVID-19 related forbearance measures and newly originated loans and advances subject to a public guarantee scheme in the context of the COVID-19 pandemic as of December 31, 2020 and September 30, 2020.

Overview of active and expired moratoria, forbearance measures and guarantee schemes in light of COVID-19 pandemic

	April 1 to Dec 31, 2020			April 1 to Sep 30, 2020		
in € m.	Loans and advances subject to EBA-compliant moratoria	Loans and advances subject to COVID-19-related forbearance measures	Newly originated loans and advances subject to public guarantee schemes in the context of the COVID-19 crisis[1]	Loans and advances subject to EBA-compliant moratoria	Other loans and advances subject to COVID-19-related forbearance measures	Newly originated loans and advances subject to public guarantee schemes in the context of the COVID-19 crisis
Corporate Bank	610	2,956	2,362	651	2,716	1,974
Investment Bank	107	4,353	60	222	4,449	60
Private Bank	7,499	1,114	1,124	7,747	1,514	928
Capital Release Unit	433	0	0	430	20	0
Total	**8,649**	**8,424**	**3,546**	**9,050**	**8,699**	**2,962**

[1] Excluding € 0.3 billion as of December 31, 2020 and € 0.2 billion as of September 30, 2020 which qualify for derecognition as these loans meet the pass-through criteria for financial instruments under IFRS 9

EBA-compliant moratoria can be divided into legislative moratoria, which are instituted by the Government and non-legislative moratoria granted by (group of) financial institutions. The loans and advances subject to EBA-compliant moratoria shown are mainly legislative moratoria instituted by the German, Italian, Indian and Spanish governments and non-legislative moratoria in Germany, Italy and Spain.

Under the legislative moratoria, the Group has granted a postponement of interest and/or principal payments depending on the requirements defined by each individual government. The postponement of principal payments led to an extension of the loan maturity date. The German legislative moratoria were granted to consumer loan agreements and mortgages and only postponed principal payments with interest being waived during the holiday period. Whereas the Italian, Spanish and Indian moratoria deferred both principal and interest to households and financial intermediaries in Italy and Spain and to standard term and working capital loans in India. The ability to utilize the legislative German moratoria ended for all borrowers at the end of June 2020 and the legislative Indian moratoria ended at the end of August 2020. Italy has two legislative moratoria one for private households which ended December 16, 2020 and a second one for Small and Medium Sized Entities (SME) and Corporates. The moratorium for SMEs and Corporates was originally scheduled to end on September 30, 2020, but has been further extended until June 2021. Also, the Spanish government extended the legislative Spanish moratoria for SMEs and Corporates up and to 2021.

Under the non-legislative moratoria, the Group has granted a postponement of interest and/or principal payments depending on the requirements defined by local banking groups setting up the local moratoria in Germany, Italy and Spain. The non-legislative moratoria were granted to consumer loan agreements and mortgages with Private Clients only. All non-legislative moratoria were originally planned to end by yearend 2020. However, due to the development of COVID-19 a new non-legislative moratorium was launched in Italy to support consumer finance clients from January 2021 until end of March 2021.

Overall the majority of loans affected by the moratoria relate to the Private Bank. Upon granting the moratoria the carrying value of the loan was amended by scheduling out the new expected cash flows and discounting at the original effective interest rate. The difference in carrying value was taken as a loss to interest income in the Profit and Loss account (P&L). The amount was not material to the Group.

During the second half of 2020, the number of clients under moratoria has significantly reduced, from peak levels in the second quarter 2020. As of December 31, 2020, € 6 billion of moratoria already expired. More than 95% of these clients, who took advantage of moratoria have now resumed payments. The transition is actively managed whereby DB contacts each private client in order to ensure the clients are aware and able to resume payments before leaving moratoria.

COVID-19 related forbearance measures were also granted to clients which did not fulfill the EBA compliant moratoria criteria, but the Bank decided on an individual customer basis to amend the conditions of the loan. Individual COVID-19 forbearance measures were granted for borrowers in several business lines and portfolios. For the Investment Bank a significant amount of modifications were granted to Commercial Real Estate Clients, in the Private Bank to clients in the Lending business and in the Corporate Banking to Trade Finance Clients. Upon granting the modifications to the borrowers, the carrying value of the loan was amended by scheduling out the new expected cash flows and discounting at the original effective interest rate. The difference in carrying value was taken as a loss to interest income in the P&L. The amount was not material to the Group. As of December 31, 2020 forbearance measures have been granted for € 8.4 billion loans reflecting a broad range from modifications of selected covenants in the respective loan contract to payment deferrals. Also, to further strengthen credit oversight, forbearance measure flagging is now considered an additional criterion to add the exposure on a “watchlist”.

Newly originated loans and advances subject to a public guarantee scheme include loans and advances mainly guaranteed by KfW (Kreditanstalt für Wiederaufbau, a government-owned promotional). These loans were granted by the bank mainly to European clients in the Corporate Business across all industries. Similar Guarantees were also offered by the Luxembourg Public Investment Bank and by the Ministry of Economic Affairs and Digital Transformation (MINECO) of Spain. Less than 1 % of the loan population has an EBA forborne or non-performing status.

The Group has originated approximately € 3.8 billion of loans under the public guarantee scheme during 2020 and in most cases the terms of the new originated loans and advances are between two and five years. Approximately € 2.1 billion of loans were granted in Germany via programs sponsored by KfW, of which, € 0.3 billion were derecognized as the terms of the loan and guarantee met the criteria for derecognition under IFRS 9, and € 1.2 billion were originated in Spain and € 0.5 billion in Luxembourg. As of December 31, 2020, 98.7 % of the loans that were granted public guarantees in 2020 continue to make regular repayments.

Breakdown of COVID-19 related measures by stages

						Dec 31, 2020
	Legislative and non-legislative Moratoria		COVID-19 related forbearance measures		Public guarantee schemes	
in € m.	Gross Carrying Amount	Expected Credit Losses	Gross Carrying Amount	Expected Credit Losses	Gross Carrying Amount	Expected Credit Losses
Stage 1	6,464	(23)	5,746	(18)	3,135	(3)
Stage 2	1,872	(63)	1,994	(54)	360	(4)
Stage 3	313	(69)	684	(80)	51	(4)
Total	8,649	(155)	8,424	(152)	3,546	(11)

The Group continues to manage and monitor the current and future COVID-19 situation. Of the € 8.6 billion legislative and non-legislative moratoria circa € 1.5 billion exposure is still active mainly due to extensions in Italy with modest increases in Stage 3 from expired moratoria. There have been no material economic losses to date regarding voluntary forbearance where Deutsche Bank provides a range of measures not only extension of grace periods. Of those loans in forbearance, only circa 8 % of the € 8.4 billion exposures have defaulted after forbearance measures were taken. As COVID-19 forbearance measures are applied to clients with a positive post-crisis outlook, we expect no significant stage moves of these assets under the assumption of a normalized economic recovery. Additionally economic recovery regarding Deutsche Bank's participation in public guarantee schemes remains low as at December 31, 2020.

Asset quality

The Asset Quality section under IFRS 9 describes the quality of debt instruments subject to impairment, which under IFRS 9 consist of debt instruments measured at amortized cost, financial instruments at fair value through other comprehensive income (FVOCI) as well as off balance sheet lending commitments such as loan commitments and financial guarantees (hereafter collectively referred to as "Financial Assets").

Overview of financial assets subject to impairment

The following tables provide an overview of the exposure amount and allowance for credit losses by financial asset class broken down into stages as per IFRS 9 requirements.

Overview of financial assets subject to impairment

					Dec 31, 2020					Dec 31, 2019
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Amortized cost[1]										
Gross carrying amount	651,637	35,372	10,655	1,729	699,393	645,967	24,680	7,531	2,150	680,328
Allowance for credit losses[2]	544	648	3,614	139	4,946	549	492	3,015	36	4,093
of which Loans										
Gross carrying amount	385,117	34,537	10,138	1,710	431,501	400,434	23,832	7,437	2,130	433,833
Allowance for credit losses[2]	522	647	3,506	133	4,808	537	488	2,932	33	3,990
Fair value through OCI										
Fair value	55,566	163	105	0	55,834	45,083	397	23	0	45,503
Allowance for credit losses	12	6	2	0	20	16	9	10	0	35
Off-balance sheet										
Notional amount	251,545	8,723	2,587	1	262,856	251,930	5,864	1,424	0	259,218
Allowance for credit losses[3]	144	74	200	0	419	128	48	166	0	342

[1] Financial Assets at Amortized Cost consist of: Loans at Amortized Cost, Cash and central bank balances, Interbank balances (w/o central banks), Central bank funds sold and securities purchased under resale agreements, Securities borrowed and certain subcategories of Other assets.
[2] Allowance for credit losses do not include allowance for country risk amounting to € 5 million as of December 31, 2020 and € 3 million as of December 31, 2019.
[3] Allowance for credit losses do not include allowance for country risk amounting to € 4 million as of December 31, 2020 and € 4 million as of December 31, 2019.

Financial assets at amortized cost

The following tables provide an overview of the gross carrying amount and credit loss allowance by financial asset class broken down into stages as per IFRS 9 requirements.

Development of exposures and allowance for credit losses in the reporting period

					Dec 31, 2020
					Gross carrying amount
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	645,967	24,680	7,531	2,150	680,328
Movements in financial assets including new business	79,284	8,215	3,304	(166)	90,637
Transfers due to changes in creditworthiness	(7,462)	5,543	1,919	0	0
Changes due to modifications that did not result in derecognition	(0)	(3)	(31)	0	(34)
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period	(48,990)	(2,268)	(1,910)	(263)	(53,430)
Recovery of written off amounts	0	0	58	0	58
Foreign exchange and other changes	(17,162)	(795)	(216)	7	(18,165)
Balance, end of reporting period	651,637	35,372	10,655	1,729	699,393

Financial assets at amortized cost subject to impairment remained increased by € 19 billion or 3 % in 2020, which was primarily driven by Stage 2:

Stage 1 exposures slightly increased by € 6 billion or 1 %.

Stage 2 exposures increased by € 11 billion or 43 % driven by Loans at Amortized Cost in Private Bank and Corporate Bank due to the update of the macroeconomic outlook.

Stage 3 exposures increased by € 2,703 million or 28 % in 2020 driven by new defaults across business divisions, partly offset by a reduction in the POCI loan portfolio.

					Dec 31, 2019
					Gross carrying amount
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	637,037	32,335	7,452	1,963	678,787
Movements in financial assets including new business	86,882	(6,503)	1,022	418	81,819
Transfers due to changes in creditworthiness	(1,652)	327	1,325	0	0
Changes due to modifications that did not result in derecognition	(4)	(0)	(40)	0	(45)
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period	(81,545)	(1,691)	(2,343)	(272)	(85,852)
Recovery of written off amounts	0	0	70	0	70
Foreign exchange and other changes	5,249	213	45	41	5,548
Balance, end of reporting period	645,967	24,680	7,531	2,150	680,328

Financial assets at amortized cost subject to impairment remained roughly stable with a slight increase of € 2 billion in 2019 across all stages:

Stage 1 exposures decreased by € 9 billion or 1 %.

Stage 2 exposures decreased by € 8 billion or 24 % driven by Brokerage cash / margin receivables in Investment Bank as well as Loans at Amortized Cost in Corporate Bank.

Stage 3 exposures decreased by € 266 million or 3 % in 2019 driven by new defaults across business divisions, partly offset by write-offs in shipping.

					Dec 31, 2020
					Allowance for Credit Losses[3]
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	549	492	3,015	36	4,093
Movements in financial assets including new business	(44)	309	1,348	72[4]	1,686
Transfers due to changes in creditworthiness	77	(125)	49	N/M	0
Changes due to modifications that did not result in derecognition	N/M	N/M	N/M	N/M	N/M
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period[2]	0	0	(781)	0	(781)
Recovery of written off amounts	0	0	58	0	58
Foreign exchange and other changes	(38)	(28)	(75)	31	(110)
Balance, end of reporting period	544	648	3,614	139	4,946
Provision for Credit Losses excluding country risk[1]	33	184	1,397	72	1,686

[1] Movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models add up to Provision for Credit Losses excluding country risk.
[2] This position includes charge offs of allowance for credit losses.
[3] Allowance for credit losses does not include allowance for country risk amounting to € 5 million as of December 31, 2020.
[4] The total amount of undiscounted expected credit losses at initial recognition on financial assets that are purchased or originated credit-impaired initially recognized during the reporting period was € 50 million in 2020 and € 0 million in 2019.

Allowance for credit losses against financial assets at amortized cost subject to impairment increased by € 853 million or 21 % in 2020 mainly driven by Stage 3:

Stage 1 allowances remained roughly stable with a slight decrease of by € 5 million or 1 %.

Stage 2 allowances increased by € 156 million or 32 % due to the update of the macroeconomic outlook.

Stage 3 allowances increased by € 702 million or 23 % driven by new defaults across business divisions and the increase against the existing POCI loan portfolio.

Our Stage 3 coverage ratio (defined as Allowance for credit losses in Stage 3 (excluding POCI) divided by Financial assets at amortized cost in Stage 3 (excluding POCI)) amounted to 34 % in the current fiscal year, compared to 40 % in the prior year.

					Dec 31, 2019
	Allowance for Credit Losses[3]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	509	501	3,247	3	4,259
Movements in financial assets including new business	(57)	102	550	40	636
Transfers due to changes in creditworthiness	120	(106)	(14)	0	0
Changes due to modifications that did not result in derecognition	N/M	N/M	N/M	N/M	N/M
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period[2]	0	0	(872)	(26)	(898)
Recovery of written off amounts	0	0	96	0	96
Foreign exchange and other changes	(22)	(4)	8	18	0
Balance, end of reporting period	549	492	3,015	36	4,093
Provision for Credit Losses excluding country risk[1]	62	(4)	536	40	636

[1] Movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models add up to Provision for Credit Losses excluding country risk.
[2] This position includes charge offs of allowance for credit losses.
[3] Allowance for credit losses does not include allowance for country risk amounting to € 3 million as of December 31, 2019.

Allowance for credit losses against financial assets at amortized cost subject to impairment dropped by € 166 million or 4 % in 2019 mainly driven by Stage 3:

Stage 1 allowances increased by € 40 million or 8 % driven by an increase in Loans at Amortized Cost in Investment Bank and Private Bank.

Stage 2 allowances remained roughly stable with a slight decrease of € 8 million or 2%.

Stage 3 allowances decreased by € 198 million or 6 % driven by NPL sales in Private Bank as well as write-offs in shipping in Capital Release Unit, which were partly offset by new defaults in Corporate Bank and Investment Bank.

Financial assets at amortized cost by business division

										Dec 31, 2020
	Gross Carrying Amount[1]					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Corporate Bank	109,484	7,747	2,305	0	119,537	85	106	1,052	0	1,244
Investment Bank	134,634	5,832	2,023	1,459	143,948	139	92	290	139	659
Private Bank	216,412	21,328	5,954	270	243,964	311	446	2,098	0	2,855
Asset Management	2,131	57	0	0	2,188	1	1	0	0	1
Capital Release Unit	4,463	303	372	0	5,138	4	4	174	0	182
Corporate & Other	184,512	105	1	0	184,618	5	(0)	0	0	5
Total	651,637	35,372	10,655	1,729	699,393	544	648	3,614	139	4,946

[1] Gross Carrying Amount numbers per business division are reported after a reallocation of cash balances from business divisions to Corporate & Other.

										Dec 31, 2019
	Gross Carrying Amount					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Corporate Bank	174,685	4,769	1,921	0	181,375	82	63	843	0	988
Investment Bank	159,301	4,894	575	1,830	166,600	146	60	117	36	358
Private Bank	251,699	14,376	4,520	321	270,915	313	360	1,834	0	2,508
Asset Management	1,965	101	0	0	2,066	1	1	0	0	2
Capital Release Unit	16,051	378	502	0	16,930	1	7	221	0	230
Corporate & Other	42,266	163	13	0	42,442	5	2	1	0	8
Total	645,967	24,680	7,531	2,150	680,328	549	492	3,015	36	4,093

Financial assets at amortized cost by industry sector

The below table gives an overview of our asset quality by industry, and is based on the NACE code of the counterparty. NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) is a standard European industry classification system. The information below is not fully congruent to the internal risk view applied in the section “Focus industries in light of COVID-19 pandemic”.

										Dec 31, 2020
	Gross Carrying Amount					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Agriculture, forestry and fishing	538	69	39	0	646	1	1	12	0	14
Mining and quarrying	2,808	115	162	0	3,085	4	4	98	0	106
Manufacturing	23,245	2,518	1,024	138	26,925	32	42	479	3	557
Electricity, gas, steam and air conditioning supply	3,268	276	117	0	3,661	3	2	35	0	40
Water supply, sewerage, waste management and remediation activities	573	52	57	0	681	1	2	9	0	12
Construction	3,706	304	271	169	4,450	6	7	193	6	212
Wholesale and retail trade, repair of motor vehicles and motorcycles	19,049	1,066	830	46	20,991	21	20	516	2	558
Transport and storage	4,760	710	387	12	5,869	20	18	93	0	131
Accommodation and food service activities	1,871	445	90	24	2,429	5	8	22	0	35
Information and communication	5,482	207	131	0	5,820	12	4	95	0	111
Financial and insurance activities	316,950	6,336	1,159	551	324,996	88	64	285	37	474
Real estate activities	38,993	2,089	824	293	42,200	32	22	94	42	190
Professional, scientific and technical activities	6,295	1,049	223	198	7,765	8	15	97	5	125
Administrative and support service activities	8,966	1,365	409	47	10,787	14	22	88	1	125
Public administration and defense, compulsory social security	16,648	593	229	0	17,469	8	5	11	0	24
Education	179	23	3	0	205	0	1	1	0	2
Human health services and social work activities	3,104	347	15	1	3,468	4	6	7	0	17
Arts, entertainment and recreation	874	78	9	1	961	3	1	3	0	8
Other service activities	10,548	823	180	215	11,766	13	12	21	40	86
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	183,728	16,906	4,496	34	205,164	270	393	1,453	2	2,120
Activities of extraterritorial organizations and bodies	52	0	1	0	53	0	0	1	0	1
Total	651,637	35,372	10,655	1,729	699,393	544	648	3,614	139	4,946

	Dec 31, 2019									
	Gross Carrying Amount					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Agriculture, forestry and fishing	613	43	42	1	699	1	2	10	0	12
Mining and quarrying	2,647	4	141	1	2,793	4	0	15	0	19
Manufacturing	26,784	1,498	923	122	29,327	32	33	481	0	546
Electricity, gas, steam and air conditioning supply	4,609	160	70	0	4,839	4	5	4	0	13
Water supply, sewerage, waste management and remediation activities	708	11	64	0	783	1	0	10	0	11
Construction	2,987	208	307	144	3,646	4	4	227	1	235
Wholesale and retail trade, repair of motor vehicles and motorcycles	19,404	978	653	11	21,046	19	18	389	(0)	426
Transport and storage	4,259	488	249	0	4,995	6	6	64	0	76
Accommodation and food service activities	2,240	93	31	74	2,437	5	2	15	0	22
Information and communication	5,633	472	32	0	6,138	10	17	16	0	43
Financial and insurance activities	299,108	3,756	431	824	304,119	95	30	189	2	317
Real estate activities	42,868	1,831	311	399	45,410	43	13	80	15	152
Professional, scientific and technical activities	9,253	512	195	232	10,193	8	8	98	4	117
Administrative and support service activities	5,909	400	189	25	6,523	6	6	52	(5)	59
Public administration and defense, compulsory social security	20,972	794	43	0	21,809	3	5	5	0	13
Education	354	18	2	0	373	0	0	1	0	2
Human health services and social work activities	3,264	187	15	2	3,469	5	6	7	0	18
Arts, entertainment and recreation	837	24	10	0	872	3	0	4	0	7
Other service activities	8,707	387	74	210	9,378	10	8	39	19	75
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	182,912	12,817	3,748	106	199,583	290	330	1,310	(0)	1,930
Activities of extraterritorial organizations and bodies	1,895	0	1	0	1,896	0	0	1	0	1
Total	645,967	24,680	7,531	2,150	680,328	549	492	3,015	36	4,093

Financial assets at amortized cost by region

	Dec 31, 2020									
	Gross Carrying Amount					Allowance for Credit Losses				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Germany	293,760	17,709	3,840	270	315,580	252	356	1,438	52	2,098
Western Europe (excluding Germany)	130,592	7,639	3,188	1,103	142,522	152	215	1,603	77	2,048
Eastern Europe	5,175	214	90	0	5,480	7	2	42	0	51
North America	144,876	6,303	2,079	105	153,362	77	57	225	7	366
Central and South America	3,731	146	374	7	4,258	4	4	32	0	40
Asia/Pacific	57,197	2,691	973	219	61,081	31	13	273	2	318
Africa	2,617	218	11	0	2,845	5	1	1	0	7
Other	13,689	453	99	24	14,265	15	1	0	(0)	16
Total	651,637	35,372	10,655	1,729	699,393	544	648	3,614	139	4,946

in € m.	Gross Carrying Amount Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Allowance for Credit Losses Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
										Dec 31, 2019
Germany	262,104	12,872	3,259	321	278,556	266	279	1,311	(0)	1,857
Western Europe (excluding Germany)	131,432	5,516	2,979	1,631	141,558	152	150	1,418	39	1,760
Eastern Europe	5,929	230	75	0	6,234	2	5	39	0	45
North America	166,357	3,467	612	71	170,507	83	39	32	3	156
Central and South America	3,952	532	103	9	4,595	2	7	29	(1)	38
Asia/Pacific	65,128	1,862	489	119	67,597	34	10	186	(5)	225
Africa	2,637	172	13	0	2,823	7	2	1	0	10
Other	8,429	30	0	0	8,458	2	0	0	0	2
Total	645,967	24,680	7,531	2,150	680,328	549	492	3,015	36	4,093

Financial assets at amortized cost by rating class

in € m.	Gross Carrying Amount Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Allowance for Credit Losses Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
										Dec 31, 2020
iAAA–iAA	225,226	538	0	0	225,764	1	0	0	0	1
iA	88,250	734	0	0	88,983	5	0	0	0	5
iBBB	150,519	2,662	0	0	153,181	43	9	0	0	52
iBB	146,701	11,891	0	0	158,592	202	76	0	0	279
iB	36,167	13,674	0	0	49,841	240	251	0	0	492
iCCC and below	4,774	5,874	10,655	1,729	23,032	54	310	3,614	139	4,117
Total	651,637	35,372	10,655	1,729	699,393	544	648	3,614	139	4,946

in € m.	Gross Carrying Amount Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Allowance for Credit Losses Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
										Dec 31, 2019
iAAA–iAA	209,611	380	0	0	209,992	2	0	0	0	2
iA	93,098	259	0	0	93,357	7	0	0	0	7
iBBB	150,213	1,922	0	0	152,135	39	7	0	0	46
iBB	146,655	6,695	1	0	153,351	191	58	0	0	249
iB	40,495	10,625	1	1	51,122	263	192	0	0	455
iCCC and below	5,894	4,799	7,529	2,149	20,371	49	236	3,015	36	3,335
Total	645,967	24,680	7,531	2,150	680,328	549	492	3,015	36	4,093

Our existing commitments to lend additional funds to debtors with Stage 3 financial assets at amortized cost amounted to € 446 million as of December 31, 2020 and € 279 million as of December 31, 2019.

Collateral held against financial assets at amortized cost in stage 3

in € m.	Dec 31, 2020 Gross Carrying Amount	Collateral	Guarantees	Dec 31, 2019 Gross Carrying Amount	Collateral	Guarantees
Financial Assets at Amortized Cost (Stage 3)	**10,655**	**3,753**	**558**	7,531	2,855	243

[1] Stage 3 consists here only of non-POCI assets

In 2020, collateral and guarantees held against financial assets at amortized cost in stage 3 increased by € 1,213 million, or 39 %, driven by Private Bank.

Due to full collateralization we did not recognize an allowance for credit losses against Financial assets at amortized cost in Stage 3 for € 625 million in 2020 and € 832 million in 2019.

Modified Assets at Amortized Cost

A financial asset is considered modified when its contractual cash flows are renegotiated or otherwise modified. Renegotiation or modification may or may not lead to derecognition of the old and recognition of the new financial instrument. This section covers modified financial assets that have not been derecognized.

Under IFRS 9, when the terms of a Financial Asset are renegotiated or modified and the modification does not result in derecognition, a gain or loss is recognized in the income statement as the difference between the original contractual cash flows and the modified cash flows discounted at the original effective interest rate (EIR). For modified financial assets the determination of whether the asset's credit risk has increased significantly reflects the comparison of:

– The remaining lifetime probability of default (PD) at the reporting date based on the modified terms; with
– The remaining lifetime PD estimated based on data at initial recognition and based on the original contractual terms.

Modified Assets Amortized Cost

	Dec 31, 2020					Dec 31, 2019				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Amortized cost carrying amount prior to modification	0	81	73	0	153	4	1	42	0	47
Net modification gain/losses recognized	**0**	**2**	**(30)**	**0**	**(29)**	(4)	(0)	(40)	0	(45)

In 2020, we have observed the increase of € 107 million, or 228 %, in modified assets at amortized cost due to client related modifications, which were granted with no modification loss. We did not include any COVID-19 driven modifications into the above table. For further details to COVID-19 related modifications, please refer to "Legislative and non-legislative moratoria and public guarantee schemes in light of COVID-19 pandemic"

We have observed immaterial amounts of modified assets that have been upgraded to stage 1. We have not observed any subsequent re-deterioration of those assets into stages 2 and 3.

In 2019, we have observed immaterial amounts of modified assets that have been upgraded to stage 1. We have not observed any subsequent re-deterioration of those assets into stages 2 and 3.

Financial Assets at Fair value through Other Comprehensive Income

The fair value of financial assets at Fair value through Other Comprehensive Income (FVOCI) subject to impairment was € 56 billion at December 31, 2020, compared to € 46 billion at December 31, 2019. Allowance for credit losses against these assets remained at very low levels (€ 20 million as of December 31, 2020 and € 35 million as of December 31, 2019). Due to immateriality no further breakdown is provided for financial assets at FVOCI.

Off-balance sheet lending commitments and guarantee business

The following tables provide an overview of the nominal amount and credit loss allowance for our off-balance sheet financial asset class broken down into stages as per IFRS 9 requirements.

Development of nominal amount and allowance for credit losses

	Dec 31, 2020				
	Nominal Amount				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	251,930	5,864	1,424	0	259,218
Movements including new business	16,918	(2,786)	126	1	14,259
Transfers due to changes in creditworthiness	(7,247)	6,101	1,146	0	0
Changes in models	0	0	0	0	0
Foreign exchange and other changes	(10,056)	(455)	(110)	0	(10,622)
Balance, end of reporting period	251,545	8,723	2,587	1	262,856

	Dec 31, 2019				
	Nominal Amount				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	252,039	10,021	599	0	262,659
Movements including new business	(507)	(3,256)	(213)	0	(3,976)
Transfers due to changes in creditworthiness	(99)	(933)	1,032	0	0
Changes in models	0	0	0	0	0
Foreign exchange and other changes	496	33	6	0	535
Balance, end of reporting period	251,930	5,864	1,424	0	259,218

	Dec 31, 2020				
	Allowance for Credit Losses[2]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	128	48	166	0	342
Movements including new business	13	21	41	0	75
Transfers due to changes in creditworthiness	0	0	(1)	0	0
Changes in models	0	0	0	0	0
Foreign exchange and other changes	3	4	(6)	0	1
Balance, end of reporting period	144	74	200	0	419
Provision for Credit Losses excluding country risk[1]	13	22	40	0	75

[1] The above table breaks down the impact on provision for credit losses from movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models.
[2] Allowance for credit losses does not include allowance for country risk amounting to € 4 million as of December 31, 2020.

	Dec 31, 2019				
	Allowance for Credit Losses[2]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	132	73	84	0	289
Movements including new business	(13)	(5)	88	0	70
Transfers due to changes in creditworthiness	9	(12)	3	0	0
Changes in models	0	0	0	0	0
Foreign exchange and other changes	(1)	(7)	(9)	0	(17)
Balance, end of reporting period	128	48	166	0	342
Provision for Credit Losses excluding country risk[1]	(4)	(17)	90	0	70

[1] The above table breaks down the impact on provision for credit losses from movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models.
[2] Allowance for credit losses does not include allowance for country risk amounting to € 4 million as of December 31, 2019.

Legal Claims

Assets subject to enforcement activity consist of assets, which have been fully or partially written off and the Group still continues to pursue recovery of the asset. Such enforcement activity comprises for example cases where the bank continues to devote resources (e.g. our Legal Department/CRM workout unit) towards recovery, either via legal channels or third party recovery agents. Enforcement activity also applies to cases where the Bank maintains outstanding and unsettled legal claims. This is irrespective of whether amounts are expected to be recovered and the recovery timeframe. It may be common practice in certain jurisdictions for recovery cases to span several years.

Amounts outstanding on financial assets that were written off during the reporting period and are still subject to enforcement activity amounted to € 295 million in fiscal year 2020, mainly in Corporate Bank, Investment Bank and Private Bank. In 2019, legal claims amounted to € 152 million, mainly in Corporate Bank and Private Bank.

Renegotiated and forborne assets at amortized costs

For economic or legal reasons we might enter into a forbearance agreement with a borrower who faces or will face financial difficulties in order to ease the contractual obligation for a limited period of time. A case-by-case approach is applied for our corporate clients considering each transaction and client -specific facts and circumstances. For consumer loans we offer forbearances for a limited period of time, in which the total or partial outstanding or future instalments are deferred to a later point of time. However, the amount not paid including accrued interest during this period must be re-compensated at a later point of time. Repayment options include distribution over residual tenor, a one-off payment or a tenor extension. Forbearances are restricted and depending on the economic situation of the client, our risk management strategies and the local legislation. In case a forbearance agreement is entered into, an impairment measurement is conducted as described below, an impairment charge is taken if necessary and the loan is subsequently recorded as impaired.

In our management and reporting of forborne assets at amortized costs, we are following the EBA definition for forbearances and non-performing loans (Implementing Technical Standards (ITS) on Supervisory reporting on forbearance and non-performing exposures under article 99(4) of Regulation (EU) No 575/2013). Once the conditions mentioned in the ITS are met, we report the loan as being forborne; we remove the asset from our forbearance reporting, once the discontinuance criteria in the ITS are met (i.e., the contract is considered as performing, a minimum two year probation period has passed, regular payments of more than an insignificant aggregate amount of principal or interest have been made during at least half of the probation period, and none of the exposures to the debtor is more than 30 days past-due at the end of the probation period).

In 2020, forbearance measures granted as a consequence of the COVID-19 pandemic have been added to the above regulations and are included in the following table, even if these measures, in accordance with EBA guidance, do in general not trigger a stage transition. COVID-19 related moratoria in contrast are not relevant for the below table. For further details please refer to the section “Legislative and non-legislative moratoria and public guarantee schemes in light of COVID-19 pandemic”.

Forborne financial assets at amortized cost

	Dec 31, 2020						Dec 31, 2019			
	Performing		Non-performing			Total forborne loans at amortized cost	Performing	Non-performing		Total forborne loans at amortized cost
in € m.	Stage 1	Stage 2	Stage 1	Stage 2	Stage 3		Stage 2	Stage 2	Stage 3	
German	1,014	1,404	2	18	1,297	3,735	985	31	1,227	2,243
Non-German	4,515	2,388	10	35	2,775	9,723	780	59	1,714	2,552
Total	5,529	3,792	12	53	4,072	13,459	1,765	90	2,940	4,796

Development of forborne financial assets at amortized cost

in € m.	Dec 31, 2020	Dec 31, 2019
Balance beginning of period	4,796	4,841
Classified as forborne during the year	10,141	1,702
Transferred to non-forborne during the year (including repayments)	(1,371)	(1,408)
Charge-offs	(35)	(342)
Exchange rate and other movements	(72)	1
Balance end of period	13,459	4,796

Forborne assets at amortized cost increased by € 8.7 billion, predominantly due to the inclusion of Forbearance measures granted as a consequence of the COVID-19 pandemic.

Forborne assets at amortized cost slightly decreased by € 45 million, or 1 % in 2019.

Collateral Obtained

We obtain collateral on the balance sheet only in certain cases by either taking possession of collateral held as security or by calling upon other credit enhancements. Collateral obtained is made available for sale in an orderly fashion or through public auctions, with the proceeds used to repay or reduce outstanding indebtedness. Generally we do not occupy obtained properties for our business use. The residential real estate collateral obtained in 2020 refers predominantly to our exposures in Spain.

Collateral Obtained during the reporting period

in € m.	2020	2019[2]
Commercial real estate	0	0
Residential real estate[1]	3	3
Other	0	0
Total collateral obtained during the reporting period	3	3

[1] Carrying amount of foreclosed residential real estate properties amounted to € 27 million as of December 31, 2020 and € 29 million as of December 31, 2019 (restated compared to prior year disclosure).
[2] Numbers have been restated compared to prior year disclosure.

The collateral obtained, as shown in the table above, excludes collateral recorded as a result of consolidating securitization trusts under IFRS 10. In 2020 as well as in 2019 the Group did not obtain any collateral related to these trusts.

Derivatives – Credit Valuation Adjustment

We establish counterparty Credit Valuation Adjustment (CVA) for OTC derivative transactions to cover expected credit losses. The adjustment amount is determined by assessing the potential credit exposure to a given counterparty and taking into account any collateral held, the effect of any relevant netting arrangements, expected loss given default and the credit risk, based on available market information, including CDS spreads.

Treatment of default situations under derivatives

Unlike standard loan assets, we generally have more options to manage the credit risk in our derivatives transactions when movement in the current replacement costs or the behavior of our counterparty indicate that there is the risk that upcoming payment obligations under the transactions might not be honored. In these situations, we are frequently able under the relevant derivatives agreements to obtain additional collateral or to terminate and close-out the derivative transactions at short notice.

The master agreements and associated collateralization agreements for OTC derivative transactions executed with our clients typically result in the majority of our credit exposure being secured by collateral. It also provides for a broad set of standard or bespoke termination rights, which allow us to respond swiftly to a counterparty's default or to other circumstances which indicate a high probability of failure.

Our contractual termination rights are supported by internal policies and procedures with defined roles and responsibilities which ensure that potential counterparty defaults are identified and addressed in a timely fashion. These procedures include necessary settlement and trading restrictions. When our decision to terminate derivative transactions results in a residual net obligation owed by the counterparty, we restructure the obligation into a non-derivative claim and manage it through our regular work-out process. As a consequence, for accounting purposes we typically do not show any nonperforming derivatives.

Wrong-way risk occurs when exposure to a counterparty is adversely correlated with the credit quality of that counterparty. In compliance with Article 291(2) and (4) CRR we have a monthly process to monitor several layers of wrong-way risk (specific wrong-way risk, general explicit wrong-way risk at country/industry/region levels and general implicit wrong-way risk, whereby relevant exposures arising from transactions subject to wrong-way risk are automatically selected and presented for comment to the responsible credit officer). A wrong-way risk report is then sent to Credit Risk senior management on a monthly basis. In addition, we utilized our established process for calibrating our own alpha factor (as defined in Article 284 (9) CRR) to estimate the overall wrong-way risk in our derivatives and securities financing transaction portfolio. The Private Bank Germany's derivative counterparty risk is immaterial to the Group and collateral held is typically in the form of cash.

Managing and mitigation of Credit Risk

Managing Credit Risk on counterparty level

Credit-related counterparties are principally allocated to credit officers within credit teams which are organized by types of counterparty (such as financial institutions, corporates or private individuals) or economic area (e.g., emerging markets) and supported by dedicated rating analyst teams where deemed necessary. The individual credit officers have the relevant expertise and experience to manage the credit risks associated with these counterparties and their associated credit related transactions. For retail clients, credit decision making and credit monitoring is highly automated for efficiency reasons. Credit Risk Management has full oversight of the respective processes and tools used in these highly automated retail credit processes. It is the responsibility of each credit officer to undertake ongoing credit monitoring for their allocated portfolio of counterparties. We also have procedures in place intended to identify at an early stage credit exposures for which there may be an increased risk of loss.

In instances where we have identified counterparties where there is a concern that the credit quality has deteriorated or appears likely to deteriorate to the point where they present a heightened risk of loss in default, the respective exposure is generally placed on a "watchlist". We aim to identify counterparties that, on the basis of the application of our risk management tools, demonstrate the likelihood of problems well in advance in order to effectively manage the credit exposure and minimize potential losses. The objective of this early warning system is to address potential problems while adequate options for action are still available. This early risk detection is a tenet of our credit culture and is intended to ensure that greater attention is paid to such exposures.

Credit limits are established by the Credit Risk Management function via the execution of assigned credit authorities. This also applies to settlement risk that must fall within limits pre-approved by Credit Risk Management considering risk appetite and in a manner that reflects expected settlement patterns for the subject counterparty. Credit approvals are documented by the signing of the credit report by the respective credit authority holders and retained for future reference.

Credit authority is generally assigned to individuals as personal credit authority according to the individual's professional qualification, experience and training. All assigned credit authorities are reviewed on a periodic basis to help ensure that they are commensurate with the individual performance of the authority holder.

Where an individual's personal authority is insufficient to establish required credit limits, the transaction is referred to a higher credit authority holder or where necessary to an appropriate credit committee. Where personal and committee authorities are insufficient to establish appropriate limits, the case is referred to the Management Board for approval.

Mitigation of Credit Risk on counterparty level

In addition to determining counterparty credit quality and our risk appetite, we also use various credit risk mitigation techniques to optimize credit exposure and reduce potential credit losses. Credit risk mitigants are applied in the following forms:

- Comprehensive and enforceable credit documentation with adequate terms and conditions.
- Collateral held as security to reduce losses by increasing the recovery of obligations.
- Risk transfers, which shift the loss arising from the probability of default risk of an obligor to a third party including hedging executed by our Strategic Corporate Lending (SCL).
- Netting and collateral arrangements which reduce the credit exposure from derivatives and securities financing transactions (e.g. repo transactions).

- Hedging of derivatives counterparty risk including CVA, using primarily CDS contracts via our Counterparty Portfolio Management desk.

Collateral

We regularly agree on collateral to be received from or to be provided to customers in contracts that are subject to credit risk. Collateral is security in the form of an asset or third-party obligation that serves to mitigate the inherent risk of credit loss in an exposure, by either substituting the counterparty default risk or improving recoveries in the event of a default. While collateral can be an alternative source of repayment, it does not replace the necessity of high quality underwriting standards and a thorough assessment of the debt service ability of the counterparty in line with CRR Article 194 (9).

We segregate collateral received into the following two types:

- Financial and other collateral, which enables us to recover all or part of the outstanding exposure by liquidating the collateral asset provided, in cases where the counterparty is unable or unwilling to fulfill its primary obligations. Cash collateral, securities (equity, bonds), collateral assignments of other claims or inventory, equipment (i.e., plant, machinery and aircraft) and real estate typically fall into this category. All financial collateral is regularly, mostly daily, revalued and measured against the respective credit exposure. The value of other collateral, including real estate, is monitored based upon established processes that includes regular reviews or revaluations by internal and/or external experts.
- Guarantee collateral, which complements the counterparty's ability to fulfill its obligation under the legal contract and as such is provided by third parties. Letters of credit, insurance contracts, export credit insurance, guarantees, credit derivatives and risk participations typically fall into this category. Guarantee collateral with a non-investment grade rating of the guarantor is limited.

Our processes seek to ensure that the collateral we accept for risk mitigation purposes is of high quality. This includes seeking to have in place legally effective and enforceable documentation for realizable and measureable collateral assets which are evaluated regularly by dedicated teams. The assessment of the suitability of collateral for a specific transaction is part of the credit decision and must be undertaken in a conservative way, including collateral haircuts that are applied. We have collateral type specific haircuts in place which are regularly reviewed and approved. In this regard, we strive to avoid "wrong-way" risk characteristics where the counterparty's risk is positively correlated with the risk of deterioration in the collateral value. For guarantee collateral, the process for the analysis of the guarantor's creditworthiness is aligned to the credit assessment process for counterparties.

The valuation of collateral is considered under a liquidation scenario. Liquidation value is equal to the expected proceeds of collateral monetization / realization in a base case scenario, wherein a fair price is achieved through careful preparation and orderly liquidation of the collateral. Collateral can either move in value over time (dynamic value) or not (static value). The dynamic liquidation value generally includes a safety margin or haircut over realizable value to address liquidity and marketability aspects.

The Group assigns a liquidation value to eligible collateral, based on, among other things:

- the market value and / or lending value, notional amount or face value of a collateral as a starting point;
- the type of collateral; the currency mismatch, if any, between the secured exposure and the collateral; and a maturity mismatch, if any;
- the applicable legal environment or jurisdiction (onshore versus offshore collateral);
- the market liquidity and volatility in relation to agreed termination clauses;
- the correlation between the performance of the borrower and the value of the collateral, e.g., in the case of the pledge of a borrower's own shares or securities (in this case generally full correlation leads to no liquidation value);
- the quality of physical collateral and potential for litigation or environmental risks; and
- a determined collateral type specific haircut (0 – 100 %) reflecting collection risks (i.e. price risks over the average liquidation period and processing/utilization/sales cost) as specified in the respective policies.

Collateral haircut settings are typically based on available historic internal and/or external recovery data (expert opinions may also be used, where appropriate). They also incorporate a forward-looking component in the form of collection and valuation forecast provided by experts within Risk Management. When data is not sufficiently available or inconclusive, more conservative haircuts than otherwise used must be applied. Haircut settings are reviewed at least annually.

Risk transfers

Risk transfers to third parties form a key part of our overall risk management process and are executed in various forms, including outright sales, single name and portfolio hedging, and securitizations. Risk transfers are conducted by the respective business units and by Strategic Corporate Lending ("SCL"), in accordance with specifically approved mandates.

SCL manages the residual credit risk of loans and lending-related commitments of the institutional and corporate credit portfolio, the leveraged portfolio and the medium-sized German companies' portfolio across our CB and IB divisions.

Acting as a central pricing reference, SCL provides the businesses with an observed or derived capital market rate for loan applications; however, the decision of whether or not the business can enter into the credit risk remains exclusively with Credit Risk Management.

SCL is concentrating on two primary objectives within the credit risk framework to enhance risk management discipline, improve returns and use capital more efficiently:

- to reduce single-name credit risk concentrations within the credit portfolio and
- to manage credit exposures by utilizing techniques including loan sales, securitization via collateralized loan obligations, sub-participations and single-name and portfolio credit default swaps.

Netting and collateral arrangements for derivatives and Securities Financing Transactions

Netting is applicable to both exchange traded derivatives and OTC derivatives. Netting is also applied to securities financing transactions (e.g. repurchase, securities lending and margin lending transactions) as far as documentation, structure and nature of the risk mitigation allow netting with the underlying credit risk.

All exchange traded derivatives are cleared through central counterparties (CCPs), which interpose themselves between the trading entities by becoming the counterparty to each of the entities. Where legally required or where available and to the extent agreed with our counterparties, we also use CCP clearing for our OTC derivative transactions.

The Dodd-Frank Act and related Commodity Futures Trading Commission (CFTC) rules require CCP clearing in the United States for certain standardized OTC derivative transactions, including certain interest rate swaps and index credit default swaps, subject to limited exceptions when facing certain counterparties. The European Regulation (EU) No 648/2012 on OTC Derivatives, Central Counterparties and Trade Repositories (EMIR) and the Commission Delegated Regulations (EU) 2015/2205, (EU) 2015/592 and (EU) 2016/1178 based thereupon introduced mandatory CCP clearing in the EU for certain standardized OTC derivatives transactions. Mandatory CCP clearing in the EU began for certain interest rate derivatives on June 21, 2016 and for certain iTraxx-based credit derivatives and additional interest rate derivatives on February 9, 2017. Article 4 (2) of EMIR authorizes competent authorities to exempt intragroup transactions from mandatory CCP clearing, provided certain requirements, such as full consolidation of the intragroup transactions and the application of an appropriate centralized risk evaluation, measurement and control procedure are met. The Bank successfully applied for the clearing exemption for a number of its regulatory-consolidated subsidiaries with intragroup derivatives, including e.g., Deutsche Bank Securities Inc. and Deutsche Bank Luxembourg S.A. As of December 31, 2020, the Bank is allowed to make use of has obtained intragroup exemptions from the EMIR clearing obligation for 57 bilateral intragroup relationships. The extent of the exemptions differs as not all entities enter into relevant transaction types subject to the clearing obligation. Of the 57 intragroup relationships, 14 are relationships where both entities are established in the Union (EU) for which a full exemption has been granted, and 43 are relationships where one is established in a third country (“Third Country Relationship”). Third Country Relationships required repeat applications for each new asset class being subject to the clearing obligation; the process took place in the course of 2017. Such repeat applications, at the time, were been filed for 39 of the Third Country Relationships, with a number of those entities having been liquidated in the meantime. Due to “Brexit”, the status of some group entities will change from an EU entity to a third country entity. There are two affected UK group entities, but we have not applied for any EMIR clearing exemption for those entities.

The rules and regulations of CCPs typically provide for the bilateral set off of all amounts payable on the same day and in the same currency (“payment netting”) thereby reducing our settlement risk. Depending on the business model applied by the CCP, this payment netting applies either to all of our derivatives cleared by the CCP or at least to those that form part of the same class of derivatives. Many CCPs’ rules and regulations also provide for the termination, close-out and netting of all cleared transactions upon the CCP’s default (“close-out netting”), which reduces our credit risk. In our risk measurement and risk assessment processes we apply close-out netting only to the extent we believe that the relevant CCP’s close-out netting provisions are legally valid and enforceable.

In order to reduce the credit risk resulting from OTC derivative transactions, where CCP clearing is not available, we regularly seek the execution of standard master agreements (such as master agreements for derivatives published by the International Swaps and Derivatives Association, Inc. (ISDA) or the German Master Agreement for Financial Derivative Transactions) with our counterparties. A master agreement allows for the close-out netting of rights and obligations arising under derivative transactions that have been entered into under such a master agreement upon the counterparty’s default, resulting in a single net claim owed by or to the counterparty. For certain parts of the derivatives business (e.g., foreign exchange transactions), we also enter into master agreements under which payment netting applies with respect to transactions covered by such master agreements, reducing our settlement risk. In our risk measurement and risk assessment processes we apply close-out netting only to the extent we believe that the master agreement is legally valid and enforceable in all relevant jurisdictions.

We also enter into credit support annexes (CSAs) to master agreements in order to further reduce our derivatives-related credit risk. These annexes generally provide risk mitigation through periodic, usually daily, margining of the covered exposure.

The CSAs also provide for the right to terminate the related derivative transactions upon the counterparty's failure to honor a margin call. As with netting, when we believe the annex is enforceable, we reflect this in our exposure measurement.

The Dodd-Frank Act and CFTC rules thereunder, including CFTC rule § 23.504, as well as EMIR and Commission Delegated Regulation based thereupon, namely Commission Delegated Regulation (EU) 2016/2251, introduced the mandatory use of master agreements and related CSAs, which must be executed prior to or contemporaneously with entering into an uncleared OTC derivative transaction. Similar documentation is required by the U.S. margin rules adopted by U.S. prudential regulators, and will be required under SEC rules for security based swaps scheduled to become effective in 2021. Under the U.S. margin rules, we are required to post and collect initial margin for our derivatives exposures with other derivatives dealers, as well as with our counterparties that (a) are "financial end users," as that term is defined in the U.S. margin rules, and (b) have an average daily aggregate notional amount of uncleared swaps, uncleared security-based swaps, foreign exchange forwards and foreign exchange swaps exceeding U.S.$ 8 billion in June, July and August of the previous calendar year. The U.S. margin rules additionally require us to post and collect variation margin for our derivatives with other derivatives dealers and certain financial end user counterparties. These margin requirements are subject to a U.S.$ 50 million threshold for initial margin, but no threshold for variation margin, with a combined U.S.$ 500,000 minimum transfer amount. The U.S. margin requirements have been in effect for large banks since September 2016, with additional variation margin requirements having come into effect March 1, 2017 and additional initial margin requirements are being phased in from September 2017 through September 2022, with the relevant compliance dates depending in each case on the transactional volume of the parties and their affiliates. Compliance with SEC margin requirements will not be required prior to the compliance date for registration of security-based swap dealers in November 2021 at the latest.

Under Commission Delegated Regulation (EU) 2016/2251, which implements the EMIR margin requirements, the CSA must provide for daily valuation and daily variation margining based on a zero threshold and a minimum transfer amount of not more than € 500,000. For large derivative exposures exceeding € 8 billion, initial margin has to be posted as well. The variation margin requirements under EMIR apply as of March 1, 2017; the initial margin requirements will be subject to a staged phase-in until September 1, 2021. However, legislative changes have been published on February 17, 2021 that, among others, will extend deadlines into 2022. Under Article 31 of Commission Delegated Regulation (EU) 2016/2251, an EU party may decide to not exchange margin with counterparties in certain non-netting jurisdictions provided certain requirements are met. Pursuant to Article 11 (5) to (10) of EMIR competent authorities are authorized to exempt intragroup transactions from the margining obligation, provided certain requirements are met. While some of those requirements are the same as for the EMIR clearing exemptions (see above), there are additional requirements such as the absence of any current or foreseen practical or legal impediment to the prompt transfer of funds or repayment of liabilities between intragroup counterparties. The Bank is making use of this exemption. The Bank has successfully applied for the collateral exemption for some of its regulatory-consolidated subsidiaries with intragroup derivatives, including, e.g., Deutsche Bank Securities Inc. and Deutsche Bank Luxembourg S.A. As of December 31, 2020, the Bank has obtained intragroup exemptions from the EMIR collateral obligation for a number of bilateral intragroup relationships which are published under https://www.db.com/company/en/intra-group-exemptions--margining.htm. For third country subsidiaries, the intragroup exemption is currently limited until the earlier of December 21, 2020 and four months after the publication of an equivalence decision by the EU Commission under Article 13(2) EMIR, unless, in the case of an equivalence decision being applicable, a follow-up exemption application is made and granted. The pending legislative changes mentioned above extend that deadline to June 30, 2022, but re-application will be necessary also for third countries without equivalence decision. For some bilateral intragroup relationships, the EMIR margining exemption may be used based on Article 11 (5) of EMIR, i.e. without the need for any application, because both entities are established in the same EU Member State. Due to "Brexit", the status of the one intragroup entity contained in the published list will change from an EU entity to that of a third country entity. That entity has been taken off the exemption list as per December 31, 2020 and no margin exemption will be used for the time being. Certain CSAs to master agreements provide for rating-dependent triggers, where additional collateral must be pledged if a party's rating is downgraded. We also enter into master agreements that provide for an additional termination event upon a party's rating downgrade. These downgrade provisions in CSAs and master agreements usually apply to both parties but in some agreements may apply to us only. We analyze and monitor our potential contingent payment obligations resulting from a rating downgrade in our stress testing approach for liquidity risk on an ongoing basis. For an assessment of the quantitative impact of a downgrading of our credit rating please refer to table "Stress Testing Results" in the section "Liquidity Risk".

Concentrations within Credit Risk mitigation

Concentrations within credit risk mitigations taken may occur if a number of guarantors and credit derivative providers with similar economic characteristics are engaged in comparable activities with changes in economic or industry conditions affecting their ability to meet contractual obligations. We use a range of tools and metrics to monitor our credit risk mitigating activities.

For more qualitative and quantitative details in relation to the application of credit risk mitigation and potential concentration effects please refer to the section "Maximum Exposure to Credit Risk".

Managing Credit Risk on portfolio level

On a portfolio level, significant concentrations of credit risk could result from having material exposures to a number of counterparties with similar economic characteristics, or who are engaged in comparable activities, where these similarities may cause their ability to meet contractual obligations to be affected in the same manner by changes in economic or industry conditions.

Our portfolio management framework supports a comprehensive assessment of concentrations within our credit risk portfolio in order to keep concentrations within acceptable levels.

Industry risk management

To manage industry risk, we have grouped our corporate and financial institutions counterparties into various industry sub-portfolios. Portfolios are regularly reviewed with the frequency of review according to portfolio size and risk profile as well as risk developments. Larger / riskier portfolios are reviewed at least on an annual basis. Reviews highlight industry developments and risks to our credit portfolio, review cross-risk concentration risks, analyze the risk/reward profile of the portfolio and incorporate the results of an economic downside stress test. Finally, this analysis is used to define the credit strategies for the portfolio in question.

In our Industry Limit framework, thresholds are established for aggregate credit limits to counterparties within each industry sub-portfolio. For risk management purposes, the aggregation of limits across industry sectors follows an internal risk view that does not have to be congruent with NACE (Nomenclature des Activities Economiques dans la Communate Europeenne) code based view applied elsewhere in this report. Regular overviews are prepared for the Enterprise Risk Committee to discuss recent developments and to agree on actions where necessary.

Beyond credit risk, our Industry Risk Framework comprises of thresholds for Traded Credit Positions while key non-financial risks are closely monitored.

Country risk management

Avoiding undue concentrations from a regional perspective is also an integral part of our credit risk management framework. In order to achieve this, country risk thresholds are applied to Emerging Markets as well as selected Developed Markets countries (based on internal country risk ratings). Emerging Markets are divided into regions. Similar to industry risk, country portfolios are regularly reviewed with the frequency of review according to portfolio size and risk profile as well as risk developments. Larger / riskier portfolios are reviewed at least on an annual basis. These reviews assess key macroeconomic developments and outlook, review portfolio composition and cross-risk concentration risks and analyze the risk/reward profile of the portfolio. Based on this, country risk appetite and strategies are set.

In our Country Risk Framework, thresholds are established for counterparty credit risk exposures in a given country to manage the aggregated credit risk subject to country-specific economic and political events. These thresholds cover exposures to entities incorporated locally including subsidiaries of foreign multinational corporations as well as companies with significant economic or operational dependence on a specific country even though they are incorporated externally. In addition, gap risk thresholds are set to control the risk of loss due to intra-country wrong-way risk exposure. As such, for risk management purposes, the aggregation of exposures across countries follows an internal risk view that may differ from the geographical exposure view applied elsewhere in this report. Beyond credit risk, our Country Risk Framework comprises thresholds for trading positions in Emerging Markets and selective Developed Markets that measure the aggregate market value of traded credit risk positions. For Emerging Markets, thresholds are also set to measure the Profit and Loss impact under specific country stress scenarios on trading positions across the Bank’s portfolio. Furthermore thresholds are set for capital positions and intra-group funding exposure of Deutsche Bank entities in above countries given the transfer risk inherent in these cross-border positions. Key non-financial risks are closely monitored. Our country risk ratings represent a key tool in our management of country risk. They include:

- Sovereign rating (set and managed by ERM): A measure of the probability of the sovereign defaulting on its foreign or local currency obligations.
- Transfer risk rating (set and managed by ERM): A measure of the probability of a “transfer risk event”, i.e., the risk that an otherwise solvent debtor is unable to meet its obligations due to inability to obtain foreign currency or to transfer assets as a result of direct sovereign intervention.

All sovereign and transfer risk ratings are reviewed, at least on an annual basis.

Product/Asset class specific risk management

Complementary to our counterparty, industry and country risk approach, we focus on product/asset class specific risk concentrations and set limits or thresholds where required for risk management purposes. Specific risk limits are set in particular if a concentration of transactions of a specific type might lead to significant losses under certain conditions. In this respect, correlated losses might result from disruptions of the functioning of financial markets, significant moves in market

parameters to which the respective product is sensitive, macroeconomic default scenarios or other factors. Specific focus is put on transactions with underwriting risks where we underwrite commitments with the intention to sell down or distribute part of the risk to third parties. These commitments include the undertaking to provide bank loans for syndication into the debt capital market and bridge loans for the issuance of notes. The inherent risks of being unsuccessful in the distribution of the facilities or the placement of the notes, comprise of a delayed distribution, funding of the underlying loans as well as a pricing risk as some underwriting commitments are additionally exposed to market risk in the form of widening credit spreads. Where applicable, we dynamically hedge this credit spread risk to be within the approved market risk limit framework.

A major asset class, in which Deutsche Bank is active in underwriting, is leverage lending, which we mainly execute through our Leveraged Debt Capital Markets (LDCM) business unit. The business model is a fee-based, originate to distribute approach focused on the distribution of largely unfunded underwriting commitments into the capital market. The aforementioned risks regarding distribution and credit spread movement apply to this business unit, however, are managed under a range of specific notional as well as market risk limits. The latter require the business to also hedge its underwriting pipeline against market dislocations. The fee-based model of our LDCM business unit includes a restrictive approach to single-name risk concentrations retained on Deutsche Bank‘s balance sheet, which results in a diversified overall portfolio without any material concentrations. The resulting longer-term on-balance sheet portfolio is also subject to a comprehensive credit limit and hedging framework.

Deutsche Bank also assumes underwriting risk with respect to Commercial Real Estate (CRE) loans, primarily in the CRE business unit in the Investment Bank where loans may be originated with the intent to securitize in the capital markets or syndicate to other lenders. The aforementioned inherent underwriting risks such as delayed distribution and pricing risk are managed through notional caps, market risk limits and hedging against the risk of market dislocations.

In addition to underwriting risk, we also focus on concentration of transactions with specific risk dynamics (including risk to commercial real estate and risk from securitization positions).

Furthermore, DB defines its risk appetite on division, asset class (product) and business unit level. In addition, our PB and certain CB businesses are managed via product-specific strategies setting our risk appetite for sufficiently homogeneous portfolios, such as the retail portfolios of mortgages and consumer finance products as well as products for business clients. Here risk analyses are performed on portfolio level. Analysis for individual clients are of secondary importance. In Wealth Management, target levels are set for global concentrations along products as well as based on type and liquidity of collateral.

Market risk management

Market risk framework

The vast majority of our businesses are subject to market risk, defined as the potential for change in the market value of our trading and invested positions. Risk can arise from changes in interest rates, credit spreads, foreign exchange rates, equity prices, commodity prices and other relevant parameters, such as market volatility and market implied default probabilities. The market risk can affect accounting, economic and regulatory views of our exposure.

Market Risk Management is part of our independent Risk function and sits within the Market and Valuations Risk Management group. One of the primary objectives of Market Risk Management is to ensure that our business units’ risk exposure is within the approved risk appetite commensurate with its defined strategy. To achieve this objective, Market Risk Management works closely together with risk takers (“the business units”) and other control and support groups.

We distinguish between three substantially different types of market risk:

- Trading market risk arises primarily through the market-making and client facilitation activities of the Investment Bank and Corporate Bank Divisions. This involves taking positions in debt, equity, foreign exchange, other securities and commodities as well as in equivalent derivatives.
- Traded default risk arising from defaults and rating migrations relating to trading instruments.
- Nontrading market risk arises from market movements, primarily outside the activities of our trading units, in our banking book and from off-balance sheet items. This includes interest rate risk, credit spread risk, investment risk and foreign exchange risk as well as market risk arising from our pension schemes, guaranteed funds and equity compensation. Nontrading market risk also includes risk from the modeling of client deposits as well as savings and loan products.

Market Risk Management governance is designed and established to promote oversight of all market risks, effective decision-making and timely escalation to senior management.

Market Risk Management defines and implements a framework to systematically identify, assess, monitor and report our market risk. Market risk managers identify market risks through active portfolio analysis and engagement with the business units.

Market risk measurement

We aim to accurately measure all types of market risks by a comprehensive set of risk metrics embedding accounting, economic and regulatory considerations.

We measure market risks by several internally developed key risk metrics and regulatory defined market risk approaches.

Trading market risk

Our primary mechanism to manage trading market risk is the application of our risk appetite framework of which the limit framework is a key component. Our Management Board, supported by Market Risk Management, sets group-wide value-at-risk, economic capital and portfolio stress testing limits for market risk in the trading book. Market Risk Management allocates this overall appetite to our Corporate Divisions and their individual business units based on established and agreed business plans. We also have business aligned heads within Market Risk Management who establish business unit limits, by allocating the limit down to individual portfolios, geographical regions and types of market risks.

Value-at-risk, economic capital and portfolio stress testing limits are used for managing all types of market risk at an overall portfolio level. As an additional and important complementary tool for managing certain portfolios or risk types, Market Risk Management performs risk analysis and business specific stress testing. Limits are also set on sensitivity and concentration/liquidity, exposure, business-level stress testing and event risk scenarios, taking into consideration business plans and the risk vs return assessment.

Business units are responsible for adhering to the limits against which exposures are monitored and reported. The market risk limits set by Market Risk Management are monitored on a daily, weekly and monthly basis, dependent on the risk management tool being used.

Internally developed market risk models

Value-at-Risk (VaR)

VaR is a quantitative measure of the potential loss (in value) of Fair Value positions due to market movements that should not be exceeded in a defined period of time and with a defined confidence level.

Our value-at-risk for the trading businesses is based on our own internal model. In October 1998, the German Banking Supervisory Authority (now the BaFin) approved our internal model for calculating the regulatory market risk capital for our general and specific market risks based on a sensitivity based Monte Carlo approach. In October 2020, the ECB approved a significant change to our VaR model, now a Historical Simulation approach predominantly utilizing full revaluation, although some portfolios remain on a sensitivity based approach. The new approach is used for both Risk Management and Capital Requirements.

The new approach provides more accurate modelling of our risks, enhances our analysis capabilities and provides a more effective tool for risk management. Aside from enabling a more accurate view of market risk, the implementation of Historical Simulation VaR has brought about an even closer alignment of our market risk systems and models to our end of day pricing.

Risk management VaR is calibrated to a 99 % confidence level and a one day holding period. This means we estimate there is a 1 in 100 chance that a mark-to-market loss from our trading positions will be at least as large as the reported VaR. For regulatory capital purposes, our VaR model is calibrated to a 99% confidence interval and a ten day holding period.

The calculation employs a Historical Simulation technique that uses one year of historical market data as input and observed correlations between the risk factors during this one year period.

Our VaR model is designed to take into account a comprehensive set of risk factors across all asset classes. Key risk factors are swap/government curves, index and issuer-specific credit curves, single equity and index prices, foreign exchange rates, commodity prices as well as their implied volatilities. To help ensure completeness in the risk coverage, second order risk factors, e.g. money market basis, implied dividends, option-adjusted spreads and precious metals lease rates are also considered in the VaR calculation. The list of risk factors include in the VaR model is reviewed regularly and enhanced as part of ongoing model performance reviews.

The model incorporates both linear and, especially for derivatives, nonlinear impacts predominantly through a full revaluation approach but it also utilizes a sensitivity-based approach for certain portfolios. The full revaluation approach uses the historical changes to risk factors as input to pricing functions. Whilst this approach is computationally expensive, it does yield a more accurate view of market risk for nonlinear positions, especially under stressed scenarios. The sensitivity based approach uses sensitivities to underlying risk factors in combination with historical changes to those risk factors.

For each business unit a separate VaR is calculated for each risk type, e.g. interest rate risk, credit spread risk, equity risk, foreign exchange risk and commodity risk. "Diversification effect" reflects the fact that the total VaR on a given day will be lower than the sum of the VaR relating to the individual risk types. Simply adding the VaR figures of the individual risk types to arrive at an aggregate VaR would imply the assumption that the losses in all risk types occur simultaneously

The VaR enables us to apply a consistent measure across our fair value exposures. It allows a comparison of risk in different businesses, and also provides a means of aggregating and netting positions within a portfolio to reflect correlations and offsets between different asset classes. Furthermore, it facilitates comparisons of our market risk both over time and against our daily trading results.

When using VaR results a number of considerations should be taken into account. These include:

– The use of historical market data may not be a good indicator of potential future events, particularly those that are extreme in nature. This "backward-looking" limitation can cause VaR to understate future potential losses (as in 2008), but can also cause it to be overstated immediately following a period of significant stress (as in COVID-19 pandemic).
– The one day holding period does not fully capture the market risk arising during periods of illiquidity, when positions cannot be closed out or hedged within one day.
– VaR does not indicate the potential loss beyond the 99th quantile.
– Intra-day risk is not reflected in the end of day VaR calculation.
– There may be risks in the trading or banking book that are partially or not captured by the VaR model.

Our process of systematically capturing and evaluating risks currently not captured in our VaR model has been further developed and improved. An assessment is made to determine the level of materiality of these risks and material risks are prioritized for inclusion in our internal model. Risks not in VaR are monitored and assessed on a regular basis through our Risk Not In VaR (RNIV) framework. This framework has also undergone a significant overhaul in 2020. This includes aligning the methodologies with the Historical Simulation approach which in turn yields a more accurate estimate of the contribution of these missing items and their potential capitalization.

We are committed to the ongoing development of our internal risk models, and we allocate substantial resources to reviewing, validating and improving them.

Stressed Value-at-Risk

Stressed Value-at-Risk (SVaR) calculates a stressed value-at-risk measure based on a one year period of significant market stress. We calculate a stressed value-at-risk measure using a 99 % confidence level. Stressed VaR is calculated with a holding period of ten days. Our SVaR calculation utilizes the same systems, trade information and processes as those used for the calculation of value-at-risk. The only difference is that historical market data and observed correlations from a period of significant financial stress (i.e., characterized by high volatilities) is used as an input for the Historical Simulation.

The time window selection process for the stressed value-at-risk calculation is based on the identification of a time window characterized by high levels of volatility in the top value-at-risk contributors. The identified window is then further validated by comparing the SVaR results to neighboring windows using the complete Group portfolio.

Under the Historical Simulation model introduced in fourth quarter of 2020, the capital calculation for VaR has been higher than that for Stressed VaR which would normally lead to a change in the time window used for Stressed VaR. Following guidance from our regulators, the assessment of this stressed period window has been delayed until 2021 as the current VaR is already based on this more stressed period driven by COVID-19.

Incremental Risk Charge

Incremental Risk Charge captures default and credit rating migration risks for credit-sensitive positions in the trading book. We use a Monte Carlo Simulation for calculating incremental risk charge as the 99.9 % quantile of the portfolio loss distribution over a one-year capital horizon under a constant position approach and for allocating contributory incremental risk charge to individual positions.

The model captures the default and migration risk in an accurate and consistent quantitative approach for all portfolios. Important parameters for the incremental risk charge calculation are exposures, recovery rates, maturity, ratings with corresponding default and migration probabilities and parameters specifying issuer correlations.

Market risk standardized approach

The Market Risk Standardized Approach ("MRSA") is used to determine the regulatory capital charge for the specific market risk of trading book securitizations, for certain types of investment funds and for longevity risk as set out in CRR/CRD regulations.

Longevity risk is the risk of adverse changes in life expectancies resulting in a loss in value on longevity linked policies and transactions. For risk management purposes, stress testing and economic capital allocations are also used to monitor and manage longevity risk.

Market risk stress testing

Stress testing is a key risk management technique, which evaluates the potential effects of extreme market events and movements in individual risk factors. It is one of the core quantitative tools used to assess the market risk of Deutsche Bank's positions and complements VaR and Economic Capital. Market Risk Management performs several types of stress testing to capture the variety of risks (Portfolio Stress Testing, individual specific stress tests and Event Risk Scenarios) and also contributes to Group-wide stress testing. These stress tests cover a wide range of severities designed to test the earnings stability and capital adequacy of the bank.

Trading market risk economic capital (TMR EC)

Our trading market risk economic capital model-scaled Stressed VaR based EC (SVaR based EC) - comprises two core components, the "common risk" component covering risk drivers across all businesses and the "business-specific risk" component, which enriches the Common Risk via a suite of Business Specific Stress Tests (BSSTs). Both components are calibrated to historically observed severe market shocks. Common risk is calculated using a scaled version of the SVaR framework while BSSTs are designed to capture more product/business-related bespoke risks (e.g. complex basis risks) as well as higher order risks not captured in the common risk component. The SVaR based EC uses the Monte Carlo SVaR framework.

Traded default risk economic capital (TDR EC)

TDR EC captures the relevant credit exposures across our trading and fair value banking books. Trading book exposures are monitored by MRM via single name concentration and portfolio thresholds which are set based upon rating, size and liquidity. Single name concentration risk thresholds are set for two key metrics: Default Exposure, i.e., the P&L impact of an instantaneous default at the current recovery rate (RR), and bond equivalent Market Value (MV), i.e. default exposure at 0 % recovery. In order to capture diversification and concentration effects we perform a joint calculation for traded default risk economic capital and credit risk economic capital. Important parameters for the calculation of traded default risk are exposures, recovery rates and default probabilities as well as maturities. The probability of joint rating downgrades and defaults is determined by the default and rating correlations of the portfolio model. These correlations are specified through systematic factors that represent countries, geographical regions and industries.

Trading market risk reporting

Market Risk Management reporting creates transparency on the risk profile and facilitates the understanding of core market risk drivers to all levels of the organization. The Management Board and Senior Governance Committees receive regular reporting, as well as ad hoc reporting as required, on market risk, regulatory capital and stress testing. Senior Risk Committees receive risk information at a number of frequencies, including weekly or monthly.

Additionally, Market Risk Management produces daily and weekly Market Risk specific reports and daily limit utilization reports for each business owner.

Regulatory prudent valuation of assets carried at fair value

We determined the amount of the additional value adjustments based on the methodology defined in the Commission Delegated Regulation (EU) 2016/101 including the amendment via Commission Delegated Regulation (EU) 2020/866 providing for a revised aggregation factor to apply for duration of the extreme market volatility due to the COVID-19 pandemic until December 31, 2020.

As of December 31, 2020 the amount of the additional value adjustments was € 1.4 billion. The December 31, 2019 amount was € 1.7 billion. The impact of the revised aggregation factor as at December 31, 2020 was € 0.5 billion.

As of December 31, 2020 the reduction of the expected loss from subtracting the additional value adjustments was € 121 million, which partly mitigated the negative impact of the additional value adjustments on our CET 1 capital.

Nontrading market risk

Nontrading market risk arises primarily from activities outside of our trading units, in our banking book, and from certain off-balance sheet items, and embedding considerations of different accounting treatment of transactions. Significant market risk factors the Group is exposed to and are overseen by risk management groups in that area are:

– Interest rate risk (including risk from embedded optionality and changes in behavioral patterns for certain product types), credit spread risk, foreign exchange risk, equity risk (including investments in public and private equity as well as real estate, infrastructure and fund assets).
– Market risks from off-balance sheet items, such as pension schemes and guarantees, as well as structural foreign exchange risk and equity compensation risk.

As for trading market risks our risk appetite & limit framework is also applied to manage our exposure to nontrading market risk. On group level those are captured by the management board set limits for market risk economic capital capturing exposures to all market risks across asset classes as well as earnings & economic value based limits for interest rate risk in the banking books. Those limits are cascaded down by market risk management to the divisional or portfolio level. The limit framework for nontrading market risk exposure is further complemented by a set of business specific stress tests, value-at-risk & sensitivity limits monitored on a daily or monthly basis dependent on the risk measure being used.

Interest Rate Risk in the Banking Book

Interest rate risk in the banking book (IRRBB) is the current or prospective risk, to both the Group's capital and earnings, arising from movements in interest rates, which affect the Group's banking book exposures. This includes gap risk, which arises from the term structure of banking book instruments, basis risk, which describes the impact of relative changes in interest rates for financial instruments that are priced using different interest rate curves, as well as option risk, which arises from option derivative positions or from optional elements embedded in financial instruments.

The Group manages its IRRBB exposures using economic value as well as earnings based measures. Our Group Treasury function is mandated to manage the interest rate risk centrally, with Market Risk Management acting as an independent oversight function.

Economic value based measures look at the change in economic value of banking book assets, liabilities and off-balance sheet exposures resulting from interest rate movements, independent of the accounting treatment. Thereby the Group measures the change in Economic Value of Equity (ΔEVE) as the maximum decrease of the banking book economic value under the six standard scenarios defined by the European Banking Authority (EBA) in addition to internal stress scenarios for risk steering purposes.

Earnings-based measures look at the expected change in Net Interest Income (NII) resulting from interest rate movements over a defined time horizon, compared to a defined benchmark scenario. Thereby the Group measures ΔNII as the maximum reduction in NII under the six standard scenarios defined by the European Banking Authority (EBA) in addition to internal stress scenarios for risk steering purposes, compared to a market implied curve scenario, over a period of 12 months.

The Group employs mitigation techniques to hedge the interest rate risk arising from nontrading positions within given limits. The interest rate risk arising from nontrading asset and liability positions is managed through Treasury Markets & Investments. The residual interest rate risk positions are hedged with Deutsche Bank's trading books within the IB division. The treatment of interest rate risk in our trading portfolios and the application of the value-at-risk model is discussed in the "Trading Market Risk" section of this document.

Positions in our banking books as well as the hedges described in the aforementioned paragraph follow the accounting principles as detailed in the “Notes to the Consolidated Financial Statements” section of this document.

The Model Risk Management function performs independent validation of models used for IRRBB measurement, as per all market risk models, in line with Deutsche Bank’s group-wide risk governance framework.

The calculation of VaR and sensitivities of interest rate risk is performed daily, whereas the measurement and reporting of economic value interest rate and earnings risk is performed on a monthly basis. The Group generally uses the same metrics in its internal management systems as it applies for the disclosure in this report. This is applicable to both the methodology as well as the modelling assumptions used when calculating the metrics.

Deutsche Bank’s key modelling assumptions are applied to the positions in our PB and CB divisions. Those positions are subject to risk of changes in our client’s behavior with regard to their deposits as well as loan products.

The Group manages the interest rate risk exposure of its Non-Maturity Deposits (NMDs) through a replicating portfolio approach to determine the average repricing maturity of the portfolio. For the purpose of constructing the replicating portfolio, the portfolio of NMDs is clustered by dimensions such as business unit, currency, product and geographical location. The main dimensions influencing the repricing maturity are elasticity of deposit rates to market interest rates, volatility of deposit balances and observable client behavior. For the reporting period the average repricing maturity assigned across all such replicating portfolios is 2.14 years and Deutsche Bank uses 15 years as the longest repricing maturity.

In the loan and some of the term deposit products Deutsche Bank considers early prepayment/withdrawal behavior of its customers. The parameters are based on historical observations, statistical analyses and expert assessments.

Furthermore, the Group generally calculates IRRBB related metrics in contractual currencies and aggregates the resulting metrics for reporting purposes. When calculating economic value based metrics the commercial margin is excluded for material parts of the balance sheet.

Credit Spread Risk in the Banking Book

Deutsche Bank is exposed to credit spread risk of bonds held in the banking book, mainly as part of the Treasury Liquidity Reserves portfolio. The credit spread risk in the banking book is managed by the businesses, with Market Risk Management acting as an independent oversight function ensuring that the exposure is within the approved risk appetite. This risk category is closely associated with interest rate risk in the banking book as changes in the perceived credit quality of individual instruments may result in fluctuations in spreads relative to underlying interest rates. The calculation of credit spread sensitivities and value-at-risk for credit spread exposure is in general performed on a daily basis, the measurement and reporting of economic capital and stress tests are performed on a monthly basis.

Foreign exchange risk

Foreign exchange risk arises from our nontrading asset and liability positions that are denominated in currencies other than the functional currency of the respective entity. The majority of this foreign exchange risk is transferred through internal hedges to trading books within the IB division and is therefore reflected and managed via the value-at-risk figures in the trading books. The remaining foreign exchange risks that have not been transferred are mitigated through match funding the investment in the same currency, so that only residual risk remains in the portfolios. Small exceptions to above approach follow the general Market Risk Management monitoring and reporting process, as outlined for the trading portfolio.

The bulk of nontrading foreign exchange risk is related to unhedged structural foreign exchange exposure, mainly in our U.S., U.K. and China entities. Structural foreign exchange exposure arises from local capital (including retained earnings) held in the Group’s consolidated subsidiaries and branches and from investments accounted for at equity. Change in foreign exchange rates of the underlying functional currencies are booked as Currency Translation Adjustments (CTA).

The primary objective for managing our structural foreign exchange exposure is to stabilize consolidated capital ratios from the effects of fluctuations in exchange rates. Therefore the exposure remains unhedged or partially hedged for a number of currencies with considerable amounts of risk-weighted assets denominated in that currency in order to avoid volatility in the capital ratio for the specific entity and the Group as a whole.

Equity and investment risk

Nontrading equity risk arising predominantly from our non-consolidated investment holdings in the banking book and from our equity compensation plans.

Our non-consolidated equity investment holdings in the banking book are categorized into strategic and alternative investment assets. Strategic investments typically relate to acquisitions made to support our business franchise and are undertaken with a medium to long-term investment horizon. Alternative assets are comprised of principal investments and other non-strategic investment assets. Principal investments are direct investments in private equity, real estate, venture capital, hedge or mutual funds whereas assets recovered in the workout of distressed positions or other legacy investment assets in private equity and real estate are of a non-strategic nature.

Investment proposals for strategic investments as well as monitoring of progress and performance against committed targets are evaluated by the Group Investment Committee. Depending on size, strategic investments may require approval from the Group Investment Committee, the Management Board or the Supervisory Board.

CRM Principal Investments is responsible for the risk-related governance and monitoring of our alternative asset activities. The review of new or increased principal investment commitments is the task of the Principal Investment Commitment Approval Group (PICAG), established by the Enterprise Risk Committee (ERC) as a risk management forum for alternative asset investments. The PICAG approves investments under its authority or recommends decisions above its authority to the Management Board for approval. The Management Board also sets investment limits for business divisions and various portfolios of risk upon recommendation by the ERC.

The equity investment holdings are included in regular group wide stress tests and the monthly market risk economic capital calculations.

Pension risk

We are exposed to market risk from a number of defined benefit pension schemes for past and current employees. The ability of the pension schemes to meet the projected pension payments is maintained through investments and ongoing plan contributions. Market risk materializes due to a potential decline in the market value of the assets or an increase in the liability of each of the pension plans. Market Risk Management monitors and reports all market risks both on the asset and liability side of our defined benefit pension plans including interest rate risk, inflation risk, credit spread risk, equity risk and longevity risk. Overall, the Group seeks to minimize the impact of adverse market movements to key financial metric, with the primary objective on protecting the overall IFRS funded status, however in selected markets with the aim to balance competing key financial metrics. The investment managers manage the pension assets in line with investment mandates or guidelines as agreed with the pension plans' trustees and investment committees. For key defined benefit plans for which the Bank aims to protect the IFRS funded status, the Group applies a liability driven investment (LDI) approach. Risks from mismatches between fluctuations in the present value of the defined benefit obligations and plan assets due to capital market movements are minimized, subject to balancing relevant trade-offs.

For details on our defined benefit pension obligation see Note 33 “Employee Benefits” in the “Notes to the Consolidated Financial Statements” section.

Other risks in the Banking Book

Market risks in our Asset Management business primarily result from principal guaranteed funds or accounts, but also from co-investments in our funds.

Nontrading market risk economic capital

Nontrading market risk economic capital is calculated either by applying the standard traded market risk EC methodology or through the use of non-traded market risk models that are specific to each risk class and which consider, among other factors, historically observed market moves, the liquidity of each asset class, and changes in client's behavior in relation to products with behavioral optionalities.

Operational risk management

Operational risk management framework

Deutsche Bank applies the European Banking Authority's Single Rulebook definition of operational risk: "Operational risk means the risk of losses stemming from inadequate or failed internal processes, people and systems or from external events. Operational risk includes legal risks, but excludes business and reputational risk and is embedded in all banking products and activities." Operational risk forms a subset of the bank's non-financial risks (NFR).

Deutsche Bank's operational risk appetite sets out the amount of operational risk we are willing to accept as a consequence of doing business. We take on operational risks consciously, both strategically as well as in day-to-day business. While the bank may have no appetite for certain types of operational risk events (such as violations of laws or regulations and misconduct), in other cases a certain amount of operational risk must be accepted if the bank is to achieve its business objectives. In case a residual risk is assessed to be outside our risk appetite, risk reducing actions must be undertaken, including remediating the risks, insuring risks or ceasing business.

The Operational risk management framework (ORMF) is a set of interrelated tools and processes that are used to identify, assess, measure, monitor and mitigate the bank's operational risks. Its components have been designed to operate together to provide a comprehensive but risk-based approach to managing the bank's most material operational risks. ORMF components include the Group's approach to setting and adhering to operational risk appetite, the operational risk type and control taxonomies, the minimum standards for operational risk management processes including tools, and the bank's operational risk capital model.

Organizational & governance structure

While the day-to-day management of operational risk is the primary responsibility of our business divisions and infrastructure functions, where these risks are generated, Non-Financial Risk Management (NFRM) oversees the Group-wide management of operational risks, identifies and reports risk concentrations, and promotes a consistent application of the ORMF across the bank. NFRM is part of the Group risk function, the Chief Risk Office, which is headed by the Chief Risk Officer.

The Chief Risk Officer appoints the Head of NFRM, who is accountable for the design oversight and maintenance of an effective, efficient and regulatory compliant ORMF, including the operational risk capital model. The Head of NFRM monitors and challenges the ORMF's Group wide implementation and monitors overall risk levels against the bank's operational risk appetite.

The Non-Financial Risk Committee (NFRC), which is chaired by the Chief Risk Officer, is responsible for the oversight, governance and coordination of the management of operational risk in the Group on behalf of the Management Board by establishing a cross-risk perspective of the key operational risks of the Group. Its decision-making authorities include the review, advice and management of all operational risk issues that may impact the risk profile of our business divisions and infrastructure functions. Several sub-fora with an oversight and alignment function attendees from both the 1st and 2nd LoDs support the NFRC to effectively fulfil its mandate. In addition to the Group level NFRC, business divisions have established 1st LoD NFR fora for the oversight and management of operational risks on various levels of the organization.

The governance of our operational risks follows the bank's Three Lines of Defence (3LoD) approach to managing all of its financial and non-financial risks. The ORMF establishes the operational risk governance standards including the core 1st and 2nd LoD roles and their responsibilities, to ensure effective risk management and appropriate independent challenge:

Operational risk requirements for the first line of defence (1st LoD): Risk owners as the 1st LoD have full accountability for their operational risks and manage these against a defined risk specific appetite.

Operational risk owners are those roles in the bank whose activities generate – or who are exposed to – operational risks. As heads of business divisions and infrastructure functions, they must determine the appropriate organizational structure to identify their operational risk profile, actively manage these risks within their organization, take business decisions on the mitigation or acceptance of operational risks to ensure they remain within risk appetite and establish and maintain 1st LoD controls.

Operational risk requirements for the second line of Defence (2nd LoD): Risk Type Controllers (RTCs) act as the 2nd LoD control functions for all sub-risk types under the overarching risk type "operational risk".

RTCs establish the framework and define Group level risk appetite statements for the specific operational risk type they oversee. RTCs define the minimum risk management and control standards and independently monitor and challenge risk

owners' implementation of these standards in their day-to-day processes, as well as their risk-taking and management activities. RTCs provide independent operational risk oversight and prepare aggregated risk type profile reporting. RTCs monitor the risk type's profile against risk appetite and have a right to veto risk decisions leading to foreseeable risk appetite breaches. As risk type experts, RTCs define the risk type and its taxonomy and support and facilitate the implementation of the risk type framework in the 1st LoD. To maintain their independence, RTC roles are located only in infrastructure functions.

Operational risk requirements for NFRM as the RTC for the overarching risk type operational risk: As the RTC / risk control function for operational risk, NFRM establishes and maintains the overarching ORMF and determines the appropriate level of capital to underpin the Group's operational risk.

– As the 2nd LoD risk control function, NFRM defines the bank's approach to operational risk appetite and monitors its adherence, breaches and consequences. NFRM is the independent reviewer and challenger of the 1st LoD's risk and control assessments and risk management activities relating to the holistic operational risk profile of a unit (while RTCs monitor and challenge activities related to their specific risk types). NFRM provides the oversight of risk and control mitigation plans to return the bank's operational risk to its risk appetite, where required. It also establishes and regularly reports the bank's operational risk profile and operational top risks, i.e. the bank's material operational risks which are outside of risk appetite.
– As the subject matter expert for operational risk, NFRM provides independent risk views to facilitate forward-looking management of operational risks, actively engages with risk owners (1st LoD) and facilitates the implementation of risk management and control standards across the bank.
– NFRM is accountable for the design, implementation and maintenance of the approach to determine the adequate level of capital required for operational risk, for recommendation to the Management Board. This includes the calculation and allocation of operational risk capital demand and expected loss under the Advanced Measurement Approach (AMA).

Managing our operational risk

In order to manage the broad range of sub-risk types underlying operational risk, the ORMF provides a set of tools and processes that apply to all operational risk types across the bank. These enable us to determine our operational risk profile in relation to our risk appetite for operational risk, to systematically identify operational risk themes and concentrations, and to define risk mitigating measures and priorities.

In 2020, we further enhanced the management of operational risks by integrating and simplifying our risk management processes, by promoting an active and continuous dialogue between the 1st and 2nd LoDs on operational risks, by strengthening our controls, and by making the management of operational risks more transparent, meaningful and embedded in day-to-day business decisions:

Loss data collection: We collect, categorize and analyze data on internal and relevant external operational risk events (with a P&L impact ≥ €10,000) in a timely manner. Material operational risk events trigger clearly defined lessons learned and read-across analyses, which are performed in close collaboration between business partners, risk control and other infrastructure functions. Lessons learned reviews analyze the reasons for significant operational risk events, identify their root causes, and document appropriate remediation actions to reduce the likelihood of their reoccurrence. Read across reviews take the conclusions of the lessons learned process and seek to analyze whether similar risks and control weaknesses identified in a lessons learned review exist in other areas of the bank, even if they have not yet resulted in problems. This allows preventative actions to be undertaken. In 2020, we further simplified the event management processes by integrating the review of external events into our scenario analysis framework and continued the development of a new, convenient to use, event management platform.

We complement our operational risk profile by using a set of scenarios including internal scenarios and relevant external operational risk events provided by an industry database. We thereby systematically utilize information on external loss events occurring in the industry to reduce the likelihood of similar incidents happening to us, for example through particular deep dive analyses or risk profile reviews. In 2020, we implemented a redesigned approach to integrate scenario analysis more closely into day-to-day risk management processes. Scenario analysis has played an important role in assessing impacts from the COVID-19 pandemic onto our operating environment and helped us to prepare adequate crisis management decisions.

The Risk & Control Assessment process (RCA) comprises of a series of bottom-up assessments of the risks generated by business divisions and infrastructure functions (1st LoDs), the effectiveness of the controls in place to manage them, and the remediation actions required to bring the risks outside of risk appetite back into risk appetite. This enables both the 1st and 2nd LoDs to have a clear view of the bank's material operational risks. In 2020, we began implementing a dynamic trigger based approach to RCA to permit risk changes to be reflected throughout the year, thereby providing a more real time risk profile for the organization. To support this dynamic approach, we improved our reporting capabilities for greater information transparency and strengthened the usage of NFR contextual data (e.g. scenarios or controls assurance data) to inform the assessments. We further enhanced the bank's central control inventory and introduced risk-based control assurance planning across both 1st LoD and 2nd LoD functions for a subset of risk types. This improves transparency of control assurance

activities across various levels of the bank, and provides useful information on the effectiveness of the controls the bank relies on to mitigate its operational risks.

We regularly report and perform analyses on our top risks to establish that they are appropriately mitigated. As all risks, top risks are rated in terms of both the likelihood that they could occur and the impact on the bank should they do so, and through this assessment they are identified to be particularly material for the bank. The reporting provides a forward-looking perspective on the impact of planned remediation and control enhancements. It also contains emerging risks and themes that have the potential to evolve as top risks in the future. Top risk reduction programs comprise the most significant risk reduction activities that are key to bringing our operational top risk themes back within risk appetite. In 2020, we improved the criteria and process for adopting or retiring divisional and Group level top risks, in addition to a regional top risk concept.

To appropriately identify and manage risks from material change initiatives within the bank, a Transformation Risk Assessment (TRA) process is in place to assess the impact of transformation on the bank's risk profile and control environment. This process considers impacts to both financial and non-financial risk types and is applicable to initiatives including regulatory initiatives, technology migrations, risk remediation projects, strategy changes, organisational changes and real estate moves within the bank. In 2020, we expanded the scope of change initiatives that require a mandatory TRA to include all key deliverables on the transformation roadmap of the bank.

NFR appetite is the amount of non-financial risk the bank is willing to accept as a consequence of doing business. The NFR appetite framework provides a common approach to measure and monitor the level of risk appetite across the firm. NFR appetite metrics are used to monitor the operational risk profile against the bank's defined risk appetite, and to alert the organization to impending problems in a timely fashion. In 2020, we clarified the linkage between risk appetite and tolerance and increased the granularity and depth of risk appetite planning and monitoring in legal entities, branches and business units risk appetite statements.

The findings and issue management process allows the bank to mitigate the risks associated with known control weaknesses and deficiencies, and enables management to make risk-based decisions over the need for further remediation or risk acceptance. Outputs from the findings management process must be able to demonstrate to internal and external stakeholders that the bank is actively identifying its control weaknesses and taking steps to manage associated risks within acceptable levels of risk appetite. In 2020, we enabled multiple risk types to be linked to each finding, enhancing our ability to monitor risk appetite by risk type concentration. This approach also allows the 2nd LoD to review, with greater precision, the potential portfolio impact of risk acceptances on risk appetite, thus strengthening the role of the 2nd LoD in risk acceptance decisions.

Operational risk type frameworks

The ORMF provides the overarching set of standards, tools and processes that apply to the management of all operational sub-risk types. It is complemented by the operational risk type frameworks, risk management and control standards and tools set up by the respective RTCs for the operational sub-risk types they control. These operational sub-risk types are controlled by various infrastructure functions and include the following:

- The Compliance department performs an independent 2nd level control function that protects the bank's license to operate by promoting and enforcing compliance with the law and driving a culture of compliance and ethical conduct in the bank. The Compliance department assists the business divisions and works with other infrastructure functions and regulators to establish and maintain a risk-based approach to the management of the bank's compliance risks in accordance with the bank's risk appetite and to help the bank detect, mitigate and prevent breaches of laws and regulations. The Compliance department performs the following principal activities: regulatory engagement and management, collaborating with government & regulatory affairs; acting as a trusted advisor; and identifying, assessing, mitigating, monitoring and reporting on compliance risk. The results of these assessments are regularly reported to the Management Board and Supervisory Board.

- Financial crime risks are managed by our Anti-Financial Crime (AFC) function via maintenance and development of a dedicated program. The AFC program is based on regulatory and supervisory requirements. AFC has defined roles and responsibilities and established dedicated functions for the identification and management of financial crime risks resulting from money laundering, terrorism financing, non-compliance with sanctions and embargoes, the facilitation of tax evasion as well as other criminal activities including fraud, bribery and corruption and other crimes. AFC updates its strategy for financial crime prevention via regular development of internal policies processes and controls, institution-specific risk assessment and staff training.

- The Legal Department (including Group Governance and Group Data Privacy) is an infrastructure function that is mandated to provide legal advice to the Management Board, the Supervisory Board (to the extent it does not give rise to conflict of interest), business divisions and infrastructure functions and to support the Management Board in setting up and guarding the Group's governance and control frameworks in respect of the bank's legal, internal corporate governance and data privacy risks. This includes in particular but without limitation:

  - Advising the Management Board and Supervisory Board on legal aspects of their activities
  - Providing legal advice to all Deutsche Bank units to facilitate adherence to legal and regulatory requirements in relation to their activities respectively
  - Supporting other Deutsche Bank units in managing Deutsche Bank Group's interactions with regulatory authorities
  - Engaging and managing external lawyers used by Deutsche Bank Group
  - Managing Deutsche Bank Group's litigation and contentious regulatory matters, (incl. contentious HR matters), and managing Deutsche Bank Group's response to external regulatory enforcement investigations
  - Advising on legal aspects of internal investigations
  - Setting the global governance framework for Deutsche Bank Group, facilitating its cross-unit application and assessing its implementation
  - Developing and safeguarding efficient corporate governance structures suitable to support efficient decision-making, to align risk and accountability on the basis of clear and consistent roles and responsibilities
  - Maintaining Deutsche Bank Group's framework for policies and procedures and serve as guardian for Group policies and procedures
  - Ensuring appropriate quality assurance around all of the above

- NFRM Product Governance oversees the New Product Approval (NPA) and Systematic Product Review (SPR) cross-risk processes forming a control framework designed to manage the risks associated with the implementation of new products and services, changes in products and services during their lifecycles and, the process by which they are systematically reviewed. Applicable bank-wide, the cross-risk processes cover different stages of the product lifecycle with NPA focusing on pre-implementation and SPR on post-implementation. Pre-implementation, the primary objective of the NPA process is to ensure proper assessment of all risks, both financial and non-financial, in NPA relevant products and services, as well as related processes and infrastructure. Post-implementation, the SPR process focuses on the periodic review of all products to determine if they are to remain live or need to be modified or withdrawn.

- NFRM is the RTC for a number of operational resilience risks. Its mandate includes second line oversight of controls over transaction processing activities, as well as infrastructure risks to prevent technology or process disruption, maintain the confidentiality, integrity and availability of data, records and information security, and ensure business divisions and infrastructure functions have robust plans in place to recover critical business processes and functions in the event of disruption including technical or building outage, or the effects of cyber-attack or natural disaster as well as any physical security or safety risk. NFRM RTC also manages the risks arising from the bank's internal and external vendor engagements via the provision of a comprehensive third party risk management framework

Measuring our operational risks

We calculate and measure the regulatory and economic capital requirements for operational risk using the Advanced Measurement Approach (AMA) methodology. Our AMA capital calculation is based upon the loss distribution approach. Gross losses from historical internal and external loss data (Operational Riskdata eXchange Association consortium data) and external scenarios from a public database (IBM OpData) complemented by internal scenario data are used to estimate the risk profile (i.e., a loss frequency and a loss severity distribution). Our loss distribution approach model includes conservatism by recognizing losses on events that arise over multiple years as single events in our historical loss profile.

Within the loss distribution approach model, the frequency and severity distributions are combined in a Monte Carlo simulation to generate potential losses over a one year time horizon. Finally, the risk mitigating benefits of insurance are applied to each loss generated in the Monte Carlo simulation. Correlation and diversification benefits are applied to the net losses in a manner compatible with regulatory requirements to arrive at a net loss distribution at Group level, covering expected and unexpected losses. Capital is then allocated to each of the business divisions after considering qualitative adjustments and expected loss.

The regulatory and economic capital requirements for operational risk are derived from the 99.9 % percentile; see the section "Internal Capital Adequacy" for details. Both regulatory and economic capital requirements are calculated for a time horizon of one year.

The regulatory and economic capital demand calculations are performed on a quarterly basis. NFRM establishes and maintains the approach for capital demand quantification and ensures that appropriate development, validation and change governance processes are in place, whereby the validation is performed by an independent validation function and in line with the Group's model risk management process.

Drivers for operational risk capital development

In 2020, our total operational risk losses decreased by 8 % compared with 2019. They were predominantly driven by losses and provisions arising from civil litigation and regulatory enforcement. Such losses still make up 73 % of operational risk losses and account for the majority of operational risk regulatory and economic capital demand, being more heavily reliant on our long-term loss history. For a description of our current legal and regulatory proceedings, please see section “Current Individual Proceedings” in Note 27 “Provisions” to the consolidated financial statements. The operational risk losses from civil litigation and regulatory enforcement decreased by € 74 million or 21 % while our non-legal operational risk losses increased by € 42 million or 63 % compared to 2019, primarily as a result of COVID-19 related expenses. Excluding the effects of COVID-19, non-legal operational risk losses were broadly flat.

In view of the relevance of legal risks within our operational risk profile, we dedicate specific attention to the management and measurement of our open civil litigation and regulatory enforcement matters where the Bank relies both on information from internal as well as external data sources to consider developments in legal matters that affect the Bank specifically but also the banking industry as a whole. Reflecting the multi-year nature of legal proceedings the measurement of these risks furthermore takes into account changing levels of certainty by capturing the risks at various stages throughout the lifecycle of a legal matter.

Conceptually, the Bank measures operational risk including legal risk by determining the maximum loss that will not be exceeded with a given probability. This maximum loss amount includes a component that due to the IFRS criteria is reflected in our financial statements and a component that is expressed as regulatory or economic capital demand beyond the amount reflected as provisions within our financial statements.

The legal losses which the Bank expects with a likelihood of more than 50 % are already reflected in our IFRS group financial statements. These losses include net changes in provisions for existing and new cases in a specific period where the loss is deemed probable and is reliably measurable in accordance with IAS 37. The development of our legal provisions for civil litigations and regulatory enforcement is outlined in detail in Note 29 “Provisions” to the consolidated financial statements.

Uncertain legal losses which are not reflected in our financial statements as provisions because they do not meet the recognition criteria under IAS 37 are expressed as “regulatory or economic capital demand”.

To quantify the litigation losses in the AMA model, the bank takes into account historical losses, provisions, contingent liabilities and legal forecasts. Legal forecasts are generally comprised of ranges of potential losses from legal matters that are not deemed probable but are reasonably possible. Reasonably possible losses may result from ongoing and new legal matters which are reviewed at least quarterly by the attorneys handling the legal matters.

We include the legal forecasts in the “relevant loss data” used in our AMA model. The projection range of the legal forecasts is not restricted to the one year capital time horizon but goes beyond and conservatively assumes early settlement of the underlying losses in the reporting period - thus considering the multi-year nature of legal matters.

Liquidity risk management

Liquidity risk arises from our potential inability to meet payment obligations when they come due or only being able to meet these obligations at excessive costs. The objective of the Group’s liquidity risk management framework is to ensure that the Group can fulfill its payment obligations at all times and can manage liquidity and funding risks within its risk appetite. The framework considers relevant and significant drivers of liquidity risk, whether on-balance sheet or off-balance sheet.

Liquidity risk management framework

In accordance with the ECB’s SREP, Deutsche Bank has implemented an Internal Liquidity Adequacy Assessment Process (ILAAP), which is reviewed at least annually and approved by the Management Board. The ILAAP provides comprehensive documentation and assessment of the Bank’s Liquidity Risk Management framework, including: identifying the key liquidity and funding risks to which the Group is exposed; describing how these risks are identified, monitored and measured and describing the techniques and resources used to manage and mitigate these risks.

The Management Board defines the liquidity and funding risk strategy for the Bank as well as the risk appetite, based on recommendations made by the Group Risk Committee (GRC). The Management Board reviews and approves the risk appetite at least annually. The risk appetite is applied to the Group to monitor and control liquidity risk as well as our long-term funding and issuance plan.

Treasury is mandated to manage the overall liquidity and funding position of the Bank, with Liquidity Risk Management (LRM) acting as an independent control function. LRM is responsible for reviewing the liquidity risk framework, proposing the risk appetite, limits and stress test scenarios to GRC and the validation of Liquidity Risk models which are developed by Treasury, to measure and manage the Group's liquidity risk profile.

Deutsche Banks has a dedicated Stress Testing and Risk Appetite Framework set by LRM, which ensures the Bank's liquidity position is balanced throughout the Group and across currencies. Treasury manages liquidity and funding, in accordance with the Management Board-approved risk appetite across a range of relevant metrics, and implements a number of tools including business level risk appetites, to ensure compliance. As such, Treasury works closely with LRM and business divisions, to identify, analyze and monitor underlying liquidity risk characteristics within business portfolios. These parties are engaged in regular dialogue regarding changes in the Bank's position arising from business activities and market circumstances.

The Management Board is informed about the performance against the key liquidity metrics for both internal and market indicators for which limits and thresholds are approved by either GRC or Management Board, via a weekly Liquidity Dashboard. Liquidity & Treasury Reporting & Analysis (LTRA) has overall accountability for the accurate and timely delivery of both external regulatory liquidity reporting and the internal management reporting of liquidity risk for DB Group. In addition LTRA ensure the development of management information systems (MIS) and analysis to support the liquidity risk framework and its governance for both Treasury and LRM.

Treasury, LRM and LTRA maintain a Liquidity policy landscape which articulates the overarching guiding principles for the robust and rigorous management of the Bank's liquidity. The landscape outlines approaches to liquidity risk management and practices and is reviewed on an annual basis.

As part of the annual strategic planning process, Treasury project the development of the key liquidity and funding metrics including the USD currency exposure based on anticipated business consumption to ensure that the plan is in compliance with our risk appetite.

Deutsche Bank has a wide range of funding sources, including retail and institutional deposits, unsecured and secured wholesale funding and debt issuance in the capital markets. Group ALCo is the Bank's decisive Governance body that has been mandated by Management Board to optimize the sourcing and deployment of the Bank's balance sheet and financial resources in line with the Management Board risk appetite and strategy. As such, it has the overarching responsibilities to define, approve and optimize the Bank`s funding strategy.

Short-term liquidity and wholesale funding

Deutsche Bank tracks all contractual cash flows from wholesale funding sources, on a daily basis, over a 12-month horizon. For this purpose, we consider wholesale funding to include unsecured liabilities largely raised by Treasury Markets Pool, as well as secured liabilities primarily raised by our Investment Bank Division. Our wholesale funding counterparties typically include corporates, banks and other financial institutions, governments and sovereigns.

The Group has implemented a set of limits to restrict the Bank's exposure to wholesale counterparties, which have historically shown to be the most susceptible to market stress. The wholesale funding limits are monitored daily, and apply to the total combined currency amount of all wholesale funding currently outstanding, both secured and unsecured with specific tenor limits. Our Liquidity Reserves are the primary mitigants against potential stress in the short-term.

The tables in section "Liquidity Risk Exposure: Funding Diversification" show the contractual maturity of our short-term wholesale funding and capital markets issuance.

Liquidity stress testing and scenario analysis

Global internal liquidity stress testing and scenario analysis is used for measuring liquidity risk and evaluating the Group's short-term liquidity position within the liquidity framework. This complements the daily operational cash management process. The long-term liquidity strategy based on contractual and behavioral modelled cash flow information is represented by a long term funding analysis known as the Funding Matrix (refer to Funding Risk Management below).

Our global liquidity stress testing process is managed by Treasury in accordance with the Management Board approved risk appetite. Treasury is responsible for the design of the overall methodology, the choice of liquidity risk drivers and the determination of appropriate assumptions (parameters) to translate input data into stress testing output. LRM is responsible for the definition of the stress scenarios and the independent validation of liquidity risk models. LTRA is responsible for implementing these methodologies and performing the stress test calculation in conjunction with Treasury, LRM and IT.

We use stress testing and scenario analysis to evaluate the impact of sudden and severe stress events on our liquidity position. Deutsche Bank has selected four scenarios to calculate the Group's stressed Net Liquidity Position ("sNLP"). These scenarios capture the historical experience of Deutsche Bank during periods of idiosyncratic and/or market-wide stress and are assumed to be both plausible and sufficiently severe as to materially impact the Group's liquidity position. The most severe scenario assesses the potential consequences of a combined market-wide and idiosyncratic stress event, including downgrades of our credit rating. Under each of the scenarios we consider the impact of a liquidity stress event over different time horizons and across multiple liquidity risk drivers, covering all of our business, product areas and balance sheet. The output from scenario analysis feeds the Group Wide Stress Test, which considers the impact of scenarios on all risk stripes.

In addition, we include the potential funding requirements from contingent liquidity risks which might arise, including drawdowns on credit facilities, increased collateral requirements under derivative agreements, and outflows from deposits with a contractual rating linked trigger. We then take into consideration Countermeasures which are the actions we would take to counterbalance the outflows incurred. Countermeasures include utilizing the Liquidity Reserve and generating liquidity from unencumbered, marketable assets.

Stress testing is conducted at a global level and for defined material legal entities covering an eight-week stress horizon. In addition to the consolidated currency stress test, stress tests for material currencies (EUR, USD and GBP) are performed. We also perform stress testing out to 12 months in the U.S. Ad-hoc analysis may be conducted to reflect the impact of potential downside events that could affect the Bank's liquidity for instance the COVID-19 pandemic and Brexit. Our suite of stress testing scenarios and assumptions are reviewed on a regular basis and are updated when enhancements are made to stress testing methodologies.

On a daily basis the liquidity stress test is calculated over a 12 month period however the initial eight-weeks, is considered the most critical time span during a liquidity crisis. Relevant stress assumptions are applied to reflect liquidity flows from risk drivers and on-balance sheet and off-balance sheet products.

Complementing daily liquidity stress testing, the Bank also conducts regular Group Wide Stress Testing (GWST) run by Enterprise Risk Management (ERM) analyzing liquidity risks in conjunction with the other defined risk types and evaluating their impact to both capital and liquidity positions as described in Risk and Capital Framework chapter.

The tables in section "Liquidity Risk Exposure: Stress Testing and Scenario Analysis" show the results of our internal global liquidity stress test under the various different scenarios.

Liquidity coverage ratio

In addition to our internal stress test result, the Group has a Management Board-approved risk appetite for the Liquidity Coverage Ratio (LCR). The LCR is intended to promote the short-term resilience of a Bank's liquidity risk profile over a 30 day stress scenario. The ratio is defined as the amount of High Quality Liquid Assets (HQLA) that could be used to raise liquidity in a stressed scenario, measured against the total volume of net cash outflows, arising from both contractual and modelled exposures.

This requirement has been implemented into European law, via the Commission Delegated Regulation (EU) 2015/61, adopted in October 2014. Compliance with the LCR was required in the EU from October 1, 2015.

The LCR complements the internal stress testing framework. By maintaining a ratio in excess of minimum regulatory requirements, the LCR seeks to ensure that the Group holds adequate liquidity resources to mitigate a short-term liquidity stress.

Key differences between the internal liquidity stress test and LCR include the time horizon (eight weeks versus 30 days), classification and haircut differences between Liquidity Reserves and the LCR HQLA, outflow rates for various categories of funding, and inflow assumption for various assets (for example, loan repayments). Our liquidity stress test also includes outflows related to intraday liquidity assumptions, which are not explicitly captured in the LCR.

Funding risk management

Deutsche Bank's primary tool for monitoring and managing longer term funding risk is the Funding Matrix. The Funding Matrix assesses the Group's structural funding profile for the greater than one year time horizon. To produce the Funding Matrix, all funding-relevant assets and liabilities are mapped into time buckets corresponding to their contractual or modeled maturities. This allows the Group to identify expected excesses and shortfalls in term liabilities over assets in each time bucket, facilitating the management of potential liquidity exposures.

The liquidity profile is based on contractual cash flow information. If the contractual maturity profile of a product does not adequately reflect the liquidity profile, it is replaced by modeling assumptions. Short-term balance sheet items (<1yr) or matched funded structures (asset and liabilities directly matched with no liquidity risk) are excluded from the term analysis.

The bottom-up assessment by individual business line is combined with a top-down reconciliation against the Group's IFRS balance sheet. From the cumulative term profile of assets and liabilities beyond 1 year, long-funded surpluses or short-funded gaps in the Group's maturity structure can be identified. The cumulative profile is thereby built up starting from the greater than 10 year bucket down to the greater than 1 year bucket.

The strategic liquidity planning process, which incorporates the development of funding supply and demand across business units, together with the Bank's targeted key liquidity and funding metrics, provides the key input parameter for our annual capital markets issuance plan. Upon approval by the Management Board the capital markets issuance plan establishes issuance targets for securities by tenor, volume, currency and instrument.

Capital markets issuance

Debt issuance, encompassing senior unsecured bonds, covered bonds as well as capital securities, is a key source of term funding for the Bank and is managed directly by Treasury. At least once a year Treasury, after endorsement at ALCo, submits an annual long-term Funding Plan to the GRC for recommendation and then to the Management Board for approval. This plan is driven by global and local funding and liquidity requirements based on expected business development. Our capital markets issuance portfolio is dynamically managed through our yearly issuance plans to avoid excessive maturity concentrations.

Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) is a regulatory metric for assessing a Bank's structural funding profile. The NSFR is intended to reduce medium to long-term funding risks by requiring banks to maintain a stable funding profile in relation to their on- and off-balance sheet activities. The ratio is defined as the amount of Available Stable Funding (the portion of capital and liabilities expected to be a stable source of funding), relative to the amount of Required Stable Funding (a function of the liquidity characteristics of various assets held).

An NFSR limit has been set for Group as well as for DBAG in anticipation of this regulatory requirement. The NSFR will come into effect as of June 28, 2021, after which the Bank will be required to maintain a 100 % ratio. Therefore NSFR risk appetite levels shall serve as a threshold until then and as a limit from June 28, 2021 onwards.

Funding diversification

Diversification of our funding profile in terms of investor types, regions and products is an important element of our liquidity risk management framework. Our most stable funding sources for which the Bank has introduced a minimum risk appetite stem from capital markets issuances and equity, as well as from retail, and transaction banking clients. Other customer deposits and secured funding and short positions are additional sources of funding. Unsecured wholesale funding represents unsecured wholesale liabilities sourced primarily by our Treasury Pool Management team. Given the relatively short-term nature of these liabilities, they are predominantly used to fund liquid trading assets.

To promote the additional diversification of our refinancing activities, we hold a license to issue mortgage Pfandbriefe. We continue to run a program for the purpose of issuing Covered Bonds under Spanish law (Cedulas) and participate in the TLTRO III program. Additionally, we expanded in 2020 our potential investor base by introducing our Sustainable Finance Framework and issued a Green Bond in June 2020.

Unsecured wholesale funding comprises a range of institutional products, such as Certificate of Deposits (CDs), Commercial Papers (CPs) as well as Money Market deposits.

To avoid any unwanted reliance on these short-term funding sources, and to promote a sound funding profile which complies with the defined risk appetite, we have implemented limits (across tenors) on these funding sources which are derived from our daily stress testing analysis. In addition, we limit the total volume of unsecured wholesale funding to manage the reliance on this funding source as part of the overall funding diversification.

The chart "Liquidity Risk Exposure: Funding Diversification" shows the composition of our external funding sources that contribute to the liquidity risk position, both in EUR billion and as a percentage of our total external funding sources.

Funds transfer pricing

The funds transfer pricing framework applies to all businesses/regions and promotes pricing of (i) assets in accordance with their underlying liquidity risk, (ii) liabilities in accordance with their liquidity value and (iii) contingent liquidity exposures in accordance with the cost of providing for appropriate liquidity reserves.

Within this framework funding and liquidity risk costs and benefits are allocated to the firm’s business units based on rates which reflect the economic costs of liquidity for Deutsche Bank. Treasury might set further financial incentives in line with the Bank’s liquidity risk guidelines. While the framework promotes a diligent group-wide allocation of the Bank's funding costs to the liquidity users, it also provides an incentive-based framework for businesses generating stable long-term and stress compliant funding.

In the third quarter of 2019, the internal FTP framework was changed in order to enhance its effectiveness as a management tool, as well as to better support funding cost optimization. Additional details are included in Note 4 „Business segments and related information“ of the consolidated financial statements.

Liquidity reserves

Liquidity reserves comprise available cash and cash equivalents, unencumbered highly liquid securities (including government and agency bonds and government guarantees) and other unencumbered central bank eligible assets. Certain intraday requirements and Mandatory Minimum Reserves are directly deducted in the calculation of the Liquidity Reserves while other intraday outflows are represented in our internal liquidity model.

We hold the vast majority of our liquidity reserves centrally across major currencies at the central bank accounts of our parent and our foreign branches in the key locations in which we are active and in a dedicated Treasury-owned Strategic Liquidity Reserve (SLR), set up exclusively to serve as a mitigant during periods of stress. To ensure a prudent composition of liquidity reserves across asset classes, we maintain minimum cash thresholds for the material currencies.

Asset encumbrance

Encumbered assets primarily comprise those on- and off-balance sheet assets that are pledged as collateral against secured funding, collateral swaps, and other collateralized obligations. We generally encumber loans to support long-term capital markets secured issuance such as covered bonds or other self-securitization structures, while financing debt and equity inventory on a secured basis is a regular activity for our Investment Bank business. Additionally, in line with the EBA technical standards on regulatory asset encumbrance reporting, assets pledged with settlement systems are considered encumbered assets, including default funds and initial margins, as well as other assets pledged which cannot be freely withdrawn such as mandatory minimum reserves at central banks. We also include derivative margin receivable assets as encumbered under these EBA guidelines.

Business (strategic) risk management

Strategic risk is the risk of a shortfall in earnings (excluding other material risks) due to incorrect business plans (owing to flawed assumptions), ineffective plan execution or a lack of responsiveness to material plan deviations. Strategic risk arises from the exposure of the bank to the macroeconomic environment, changes in the competitive landscape, and regulatory and technological developments. Additionally, it could occur due to errors in strategic positioning, the bank’s failure to execute its planned strategy and/or a failure to effectively address under-performance versus plan targets.

A Strategic and Capital plan is developed annually and presented to the Management Board for discussion and approval. The final plan is then presented to the Supervisory Board. During the year, execution of business strategies is regularly monitored to assess the performance against strategic objectives and to seek to ensure we remain on track to achieve targets. A more comprehensive description of this process is detailed in the section ‘Strategic and Capital Plan’.

The risk type controller for strategic risk is Enterprise Risk Management (ERM) in Risk. Finance, together with the Divisions, are the key risk managers of the associated risk.

Model risk management

Introduction

Model risk is the potential for adverse consequences from decisions based on incorrect or misused model outputs. Model risk can lead to: financial loss, poor business or strategic decision making, or damage to our reputation.

Deutsche Bank uses models for a broad range of decision making activities, such as: underwriting credits; valuing exposures, instruments and positions; measuring risk; managing and safeguarding client assets, and determining capital and reserve adequacy. The term ‘model’ refers to a quantitative method, system, or approach that applies statistical, economic, financial, or mathematical theories, techniques, and assumptions to process input data into quantitative estimates. Models are simplified representations of real-world relationships, and are based on assumptions and judgment. Accordingly, the bank is exposed to model risk, which must be identified, measured and controlled appropriately.

Model risk management oversight is provided by all levels of management, including the Management Board. Management of model risk is underpinned by a framework designed and monitored by 2nd Line of Defence, including components across the lifecycle of a model. The model risk management framework is formalized within policies and procedures, and overseen by a robust governance structure.

Model Risk Management Governance and Structure

Model risk is one of the bank’s five main risk types, overseen by the Chief Risk Officer through the setting of a qualitative risk appetite statement and managed through:

- Model risk policies and procedures, aligned to regulatory requirements, with clear roles and responsibilities for stakeholders;
- Model risk governance, including senior forums for monitoring and escalation of model risk related topics, as well as monthly updates to the Management Board on the model risk appetite metrics and periodic model risk updates to the Supervisory Board;
- Inventorization of all models, supporting ongoing model risk framework components including risk assessment and attestation;
- Independent model validation providing effective challenge, identifying models’ limitations and weaknesses, resulting in findings and conditions for use, such as adjustments or overlays.

Developments during the reporting period:

In 2020, a new bank-wide ‘Group Model Risk Council’ has been established to improve oversight, monitoring and governance on model risk. The model risk framework has been further improved to drive consistency of model development, validation as well as risk management approaches across the bank.

Reputational risk management

Within our risk management process, reputational risk is defined as the risk of possible damage to Deutsche Bank’s brand and reputation, and the associated risk to earnings, capital or liquidity arising from any association, action or inaction which could be perceived by stakeholders to be inappropriate, unethical or inconsistent with the DB’s values and beliefs.

Deutsche Bank seeks to ensure that reputational risk is as low as reasonably possible. Reputational risk cannot be precluded as it can be driven by unforeseeable changes in perception of our practices by our various stakeholders (e.g. public, clients, shareholders and regulators). Deutsche Bank strives to promote sustainable standards that will enhance profitability and minimize reputational risk.

The Reputational Risk Framework (the Framework) is in place to manage the process through which active decisions are taken on matters which may pose a reputational risk, before the event, and in doing so to prevent damage to Deutsche Bank's reputation wherever possible. The Framework provides consistent standards for the identification, assessment and management of reputational risk issues. Reputational impacts which may arise as a consequence of a failure from another risk type, control or process are addressed separately via the associated risk type framework and are therefore not addressed in this section. The reputational risk could arise from multiple sources including, but not limited to, potential issues with the profile of the counterparty, the business purpose / economic substance of the transaction or product, high risk industries, environmental and social considerations, and the nature of the transaction or product or its structure and terms.

The modelling and quantitative measurement of reputational risk internal capital is implicitly covered in our economic capital framework primarily within operational and strategic risk.

Governance and organizational structure

The Framework is applicable across all Business Divisions and Regions. DWS-specific matters are reviewed by a DWS-dedicated reputational risk committee and escalated to the DWS Executive Board where required.

Whilst every employee has a responsibility to protect our reputation, the primary responsibility for the identification, assessment, management, monitoring and, if necessary, referring or reporting of reputational risk matters lies with Deutsche Bank's Business Divisions as the primary risk owners. Each Business Division has an established process through which matters, which are deemed to be a moderate or greater reputational risk are assessed, the Unit Reputational Risk Assessment Process (Unit RRAP).

The Unit RRAP is required to refer any material reputational risk matters to the respective Regional Reputational Risk Committee (RRRC). The Framework also sets out a number of matters which are considered inherently higher risk from a reputational risk perspective and are therefore mandatory referrals to the RRRCs. The RRRCs, which are 2nd LoD Committees, are responsible for ensuring the oversight, governance and coordination of the management of reputational risk in the respective region of Deutsche Bank. The RRRCs meet, as a minimum, on a quarterly basis with ad hoc meetings as required. The Group Reputational Risk Committee (GRRC) is responsible for ensuring the oversight, governance and coordination of the management of reputational risk at Deutsche Bank on behalf of the Group Risk Committee and the Management Board. Additionally, the GRRC reviews cases with a Group wide impact and in exceptional circumstances, those that could not be resolved at a regional level.

Risk concentration and risk diversification

Risk concentrations

Risk concentrations refer to clusters of the same or similar risk drivers within specific risk types (intra-risk concentrations in credit, market, operational, liquidity and business risks) as well as across different risk types (inter-risk concentrations). They occur within and across counterparties, businesses, regions/countries, industries and products. The management and monitoring of risk concentrations is achieved through a quantitative and qualitative approach, as follows:

- Intra-risk concentrations are assessed, monitored and mitigated by the individual risk functions (credit, market, operational, liquidity and strategic risk management). This is supported by limit setting on different levels and/or management according to each risk type.
- Inter-risk concentrations are managed through quantitative top-down stress-testing and qualitative bottom-up reviews, identifying and assessing risk themes independent of any risk type and providing a holistic view across the bank.

The most senior governance body for the oversight of risk concentrations throughout 2020 was the Enterprise Risk Committee (ERC), which is a subcommittee of the Group Risk Committee (GRC).

Risk type diversification benefit

The risk type diversification benefit quantifies diversification effects between credit, market, operational and strategic risk in economic capital caused by non-perfect correlations between these risk types. The calculation of the risk type diversification benefit is intended to ensure that the standalone economic capital figures for the individual risk types are aggregated in an economically meaningful way.

Risk and capital performance

Capital, Leverage ratio, TLAC and MREL

Own funds

The calculation of our own funds incorporates the capital requirements following the "Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms" (Capital Requirements Regulation or "CRR") and the "Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms" (Capital Requirements Directive or "CRD") which have been further amended with subsequent Regulations and Directives. The CRD has been implemented into German law. The information in this section as well as in the section "Development of risk-weighted Assets" is based on the regulatory principles of consolidation.

This section refers to the capital adequacy of the group of entities consolidated for banking regulatory purposes pursuant to the CRR and the German Banking Act ("Kreditwesengesetz" or "KWG"). Therein not included are insurance companies or companies outside the finance sector.

The total own funds pursuant to the effective regulations as of year-end 2020 comprises Tier 1 and Tier 2 (T2) capital. Tier 1 capital is subdivided into Common Equity Tier 1 (CET 1) capital and Additional Tier 1 (AT1) capital.

Common Equity Tier 1 (CET 1) capital consists primarily of common share capital (reduced by own holdings) including related share premium accounts, retained earnings (including losses for the financial year, if any) and accumulated other comprehensive income, subject to regulatory adjustments (i.e. prudential filters and deductions), as well as minority interests qualifying for inclusion in consolidated CET1 capital. Prudential filters for CET 1 capital, according to Articles 32 to 35 CRR, include (i) securitization gains on sale, (ii) cash flow hedges and changes in the value of own liabilities, and (iii) additional value adjustments. CET 1 capital deductions for instance includes (i) intangible assets, (ii) deferred tax assets that rely on future profitability, (iii) negative amounts resulting from the calculation of expected loss amounts, (iv) net defined benefit pension fund assets, (v) reciprocal cross holdings in the capital of financial sector entities and, (vi) significant and non-significant investments in the capital (CET 1, AT1, T2) of financial sector entities above certain thresholds. All items not deducted (i.e., amounts below the threshold) are subject to risk-weighting.

Additional Tier 1 (AT1) capital consists of AT1 capital instruments and related share premium accounts as well as noncontrolling interests qualifying for inclusion in consolidated AT1 capital and during the transitional period grandfathered instruments. To qualify as AT1 capital under CRR/CRD, instruments must have principal loss absorption through a conversion to common shares or a write-down mechanism allocating losses at a trigger point and must also meet further requirements (perpetual with no incentive to redeem; institution must have full dividend/coupon discretion at all times, etc.).

Tier 2 (T2) capital comprises eligible capital instruments, the related share premium accounts and subordinated long-term debt, certain loan loss provisions and noncontrolling interests that qualify for inclusion in consolidated T2 capital. To qualify as T2 capital, capital instruments or subordinated debt must have an original maturity of at least five years. Moreover, eligible capital instruments may inter alia not contain an incentive to redeem, a right of investors to accelerate repayment, or a credit sensitive dividend feature

We present in this report certain figures based on the CRR definition of own fund instruments applicable for Additional Tier 1 (AT1) capital and Tier 2 (T2) capital and figures based thereon, including Tier 1, Total Capital and Leverage Ratio) on a "fully loaded" basis. We calculate such "fully loaded" figures excluding the transitional arrangements for own fund instruments as provided in the currently applicable CRR/CRD. For CET 1 instruments there are no transitional provisions.

Transitional arrangements are applicable for AT1 and T2 instruments. Capital instruments issued on or prior to December 31, 2011, that no longer qualify as AT1 or T2 capital under the fully loaded CRR/CRD as currently applicable are subject to grandfathering rules during the transitional period and are being phased out from 2013 to 2022 with their recognition capped at 20 % in 2020 and 10 % in 2021 (in relation to the portfolio eligible for grandfathering which was still in issue on December 31, 2012). The current CRR as applicable since June 27, 2019 provides further grandfathering rules for AT1 and T2 instruments issued prior to June 27, 2019. Thereunder, AT1 and T2 instruments issued through special purpose entities are grandfathered until December 31, 2021, and AT1 and T2 instruments that do not meet certain new requirements that apply since June 27, 2019 continue to qualify until June 26, 2025. Instruments issued under UK law which do not fulfill all CRR requirements after the UK has left the European Union are also excluded from our fully loaded definition. Our CET 1 and RWA figures show no difference between CRR/CRD as currently applicable and fully loaded CRR/CRD based on our definition of "fully loaded".

For the comparative numbers as per year-end 2019 we still applied our earlier concept of fully loaded, defined as excluding the transitional arrangements for own funds instruments introduced by the CRR/CRD applicable until June 26, 2019, but reflecting the transitional arrangements introduced by the amendments to the CRR/CRD applicable from June 27, 2019 and further amendments thereafter.

We believe that these “fully loaded” calculations provide useful information to investors as they reflect our progress against the regulatory capital standards and as many of our competitors have been describing calculations on a “fully loaded” basis. As our competitors’ assumptions and estimates regarding “fully loaded” calculations may vary, however, our “fully loaded” measures may not be comparable with similarly labelled measures used by our competitors.

Capital instruments

Our Management Board received approval from the 2019 Annual General Meeting to buy back up to 206.7 million shares before the end of April 2024. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. During the period from the 2019 Annual General Meeting until the 2020 Annual General Meeting (May 20, 2020), 33.8 million shares were purchased. The shares purchased were used for equity compensation purposes in the same period or are to be used in the upcoming period so that the number of shares held in Treasury from buybacks was 10.5 million as of the 2020 Annual General Meeting.

The 2020 Annual General Meeting granted our Management Board the approval to buy back up to 206.7 million shares before the end of April 2025. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. These authorizations substitute the authorizations of the previous year. During the period from the 2020 Annual General Meeting until December 31, 2020, there were not any shares purchased. The shares in inventory are to be used in this period or the upcoming period for equity compensation purposes; the number of shares held in Treasury from buybacks was 1.3 million as of December 31, 2020.

Since the 2017 Annual General Meeting, and as of December 31, 2020, authorized capital available to the Management Board is € 2,560 million (1,000 million shares). As of December 31, 2020, the conditional capital against cash stands at € 512 million (200 million shares). Additional conditional capital for equity compensation amounts to € 51.2 million (20 million shares). Further, the 2018 Annual General Meeting authorized the issuance of participatory notes and other Hybrid Debt Securities that fulfil the regulatory requirements to qualify as Additional Tier 1 capital with an equivalent value of € 8.0 billion.

Our legacy Hybrid Tier 1 capital instruments (substantially all noncumulative trust preferred securities) are not recognized under fully loaded CRR/CRD rules as Additional Tier 1 capital, mainly because they have no write-down or equity conversion feature. During the transitional phase-out period the maximum recognizable amount of Additional Tier 1 instruments from Basel 2.5 compliant issuances as of December 31, 2012 will be reduced at the beginning of each financial year by 10 % or € 1.3 billion, through 2022. For December 31, 2020, this resulted in eligible Additional Tier 1 instruments of € 6.8 billion (i.e. € 5.7 billion newly issued AT1 Notes plus € 1.1 billion of legacy Hybrid Tier 1 instruments recognizable during the transition period). Additional Tier 1 instruments recognized under fully loaded CRR/CRD rules amounted to € 5.7 billion as of December 31, 2020. In 2020, the bank issued AT1 notes amounting to U.S.$ 1.3 billion or an equivalent amount of € 1.2 billion. Furthermore, the bank redeemed legacy Hybrid Tier 1 instruments with a notional of U.S.$ 0.8 billion and an eligible equivalent amount of € 0.7 billion.

The total of our Tier 2 capital instruments as of December 31, 2020 recognized during the transition period under CRR/CRD was € 6.9 billion (nominal value of € 7.7 billion). Tier 2 instruments recognized under fully loaded CRR/CRD rules amounted to € 6.6 billion (nominal value of € 7.4 billion). In 2020, the bank issued Tier 2 capital instruments with a nominal value of U.S.$ 0.5 billion (equivalent amount of € 0.4 billion) and € 1.3 billion.

Minimum capital requirements and additional capital buffers

The Pillar 1 CET 1 minimum capital requirement applicable to the Group is 4.50 % of risk-weighted assets (RWA). The Pillar 1 total capital requirement of 8.00 % demands further resources that may be met with up to 1.50 % Additional Tier 1 capital and up to 2.00 % Tier 2 capital.

Failure to meet minimum capital requirements can result in supervisory measures such as restrictions of profit distributions or limitations on certain businesses such as lending. We complied with the regulatory capital adequacy requirements in 2020.

In addition to these minimum capital requirements, the following combined capital buffer requirements were fully effective beginning 2020 onwards. The buffer requirements must be met in addition to the Pillar 1 minimum capital requirements, but can be drawn down in times of economic stress.

The capital conservation buffer is implemented in Section 10c German Banking Act, based on Article 129 CRD and equals a requirement of 2.50 % CET 1 capital of RWA in 2020 and onwards.

The countercyclical capital buffer is deployed in a jurisdiction when excess credit growth is associated with an increase in system-wide risk. It may vary between 0 % and 2.50 % CET 1 capital of RWA by 2020. In exceptional cases, it could also be higher than 2.50 %. The institution-specific countercyclical buffer that applies to Deutsche Bank is the weighted average of the countercyclical capital buffers that apply in the jurisdictions where our relevant credit exposures are located. As per December 31, 2020, the institution-specific countercyclical capital buffer was at 0.02 %.

In addition to the aforementioned buffers, national authorities, such as the BaFin, may require a systemic risk buffer to prevent and mitigate long-term non-cyclical systemic or macro-prudential risks that are not covered by the CRR. They can require an additional buffer of up to 5.00 % CET 1 capital of RWA. As of the year-end 2020, no systemic risk buffer applied to Deutsche Bank.

Deutsche Bank continues to be designated as a global systemically important institution (G-SII) by the German Federal Financial Supervisory Authority (BaFin) in agreement with the Deutsche Bundesbank, resulting in a G-SII buffer requirement of 2.00 % CET 1 capital of RWA in 2020. This is in line with the FSB assessment of systemic importance based on the indicators as published in 2017. According to the recent FSB assessment based on the indicators as published in 2019, the G-SII buffer requirement for Deutsche Bank is reduced to 1.50 %, which will become effective from January 1, 2021. This assessment has been confirmed by the FSB in 2020. We will continue to publish our indicators on our website.

Additionally, Deutsche Bank AG has been classified by BaFin in agreement with the Deutsche Bundesbank as an “other systemically important institution” (O-SII) with an additional capital buffer requirement of 2.00 % in 2020 that has to be met on a consolidated level. Unless certain exceptions apply, only the higher of the systemic risk buffer, G-SII buffer and O-SII buffer must be applied.

In addition, pursuant to the Pillar 2 Supervisory Review and Evaluation Process (SREP), the European Central Bank (ECB) may impose capital requirements on individual banks which are more stringent than statutory requirements (so-called Pillar 2 requirement).

On December 9, 2019, Deutsche Bank was informed by the ECB of its decision regarding prudential minimum capital requirements for 2020 that applied from January 1, 2020 onwards, following the results of the 2019 SREP. The decision acknowledges the progress Deutsche Bank has made since the first SREP assessment in 2016, leading to a decrease in the ECB’s Pillar 2 Requirement (P2R) from 2.75 % to 2.50 % CET 1 capital of RWA, effective as of January 1, 2020. As a result, Deutsche Bank was required to maintain a CET 1 ratio of at least 11.58 % on a consolidated basis. This CET 1 capital requirement comprised the Pillar 1 minimum capital requirement of 4.50 %, the lowered Pillar 2 requirement (SREP add-on) of 2.50 %, the capital conservation buffer of 2.50 %, the countercyclical buffer of 0.08 % as of January 1 2020 (subject to changes throughout the year) and the G-SII buffer of 2.00 %. Correspondingly, 2020 requirements for Deutsche Bank's Tier 1 capital ratio were at 13.08 % and for its total capital ratio at 15.08 %.

On March 12, 2020, the ECB announced various supervisory measures in reaction to the COVID-19 pandemic. Related to that, Deutsche Bank was informed by the ECB of its decision to implement Article 104a of the Directive (EU) 2019/878 of the European Parliament (CRDV) with effect from March 12, 2020. The decision requires Deutsche Bank to fulfil its unchanged 2.50 % Pillar 2 requirement (SREP add-on) with at least 56.25 % CET 1, 18.75 % Additional Tier 1 and 25 % Tier 2 capital. As of December 31, 2020, Deutsche Bank needs to maintain on a consolidated basis a CET 1 ratio of at least 10.42 %, a Tier 1 ratio of at least 12.39 % and a Total Capital ratio of at least 15.02 %. The CET 1 requirement comprises the Pillar 1 minimum capital requirement of 4.50 %, the Pillar 2 requirement (SREP add-on) of 1.41 %, the capital conservation buffer of 2.50 %, the countercyclical buffer (subject to changes throughout the year) of 0.02 % and the higher of our G-SII/O-SII buffer of 2.00 %. Correspondingly, the Tier 1 capital requirement includes additionally a Tier 1 minimum capital requirement of 1.50 % plus a Pillar 2 requirement of 0.47 %, and the Total Capital requirement includes further a Tier 2 minimum capital requirement of 2.00 % and a Pillar 2 requirement of 0.63 %. Also, the ECB communicated to Deutsche Bank that its individual expectation to hold a further Pillar 2 CET 1 capital add-on, commonly referred to as ‘Pillar 2 guidance’ will be seen as guidance only and until further notice a breach of this guidance will not trigger the need to provide a capital restoration plan or a need to execute measures to re-build CET 1 capital. The ECB has further communicated that once this period of financial distress is over, banks will be granted sufficient time to build up the buffers again.

In December 2020 the ECB informed Deutsche Bank that these capital requirements will remain unchanged in 2021 with no update of requirements as part of the 2020 SREP, for which, in light of the pandemic and the unique economic and financial situation it has generated, and in line with the European Banking Authority’s (EBA’s) statement of April 22, 2020, the ECB has adopted a “pragmatic approach”, based on which in principle no new decisions are issued in the 2020 cycle with the 2019 SREP decisions continuing to apply, amended by the above mentioned additional supervisory measures announced on March 12, 2020.

It should be noted that the Financial Stability Board has announced in 2019 that our G-SII buffer will be reduced to 1.5 % starting January 1, 2021. This does not change the capital requirements as the O-SII buffer remains at 2.0 % as the higher of the G-SII, O-SII, and systemic risk buffer.

The following table gives an overview of the different Pillar 1 and Pillar 2 minimum capital requirements (but excluding the Pillar 2 guidance) as well as capital buffer requirements applicable to Deutsche Bank for years 2020 and 2021:

Overview total capital requirements and capital buffers

	2020	2021
Pillar 1		
Minimum CET 1 requirement	4.50 %	4.50 %
Combined buffer requirement	4.52 %	4.52 %
Capital Conservation Buffer	2.50 %	2.50 %
Countercyclical Buffer	0.02 %	0.02 %
Maximum of:	2.00 %	2.00 %
G-SII Buffer	2.00 %	1.50 %
O-SII Buffer	2.00 %	2.00 %
Systemic Risk Buffer	0.00 %	0.00 %
Pillar 2		
Pillar 2 SREP Add-on of CET 1 capital (excluding the "Pillar 2" guidance)	2.50 %	2.50 %
of which covered by CET 1 capital	1.41 %	1.41 %
of which covered by Tier 1 capital	1.88 %	1.88 %
of which covered by Tier 2 capital	0.63 %	0.63 %
Total CET 1 requirement from Pillar 1 and 2[3]	**10.42 %**	10.42 %
Total Tier 1 requirement from Pillar 1 and 2	**12.39 %**	12.39 %
Total capital requirement from Pillar 1 and 2	**15.02 %**	15.02 %

[1] Deutsche Bank's countercyclical buffer requirement is subject to country-specific buffer rates decreed by EBA and the Basel Committee of Banking Supervision (BCBS) as well as Deutsche Bank's relevant credit exposures as per respective reporting date. The countercyclical buffer rate for 2021 has been assumed to be 0.02 % as per beginning of the year 2021. The countercyclical buffer is subject to changes throughout the year depending on its constituents.
[2] The systemic risk buffer has been assumed to remain at 0 % for the projected year 2021, subject to changes based on further directives.
[3] The total Pillar 1 and Pillar 2 CET 1 requirement (excluding the "Pillar 2" guidance) is calculated as the sum of the SREP requirement, the higher of the G-SII, O-SII and systemic risk buffer requirement as well as the countercyclical buffer requirement.

Development of own funds

Our Total Regulatory capital as of December 31, 2020 amounted to € 58.5 billion compared to € 56.5 billion at the end of December 31, 2019. Our Tier 1 capital as of December 31, 2020 amounted to € 51.5 billion, consisting of a Common Equity Tier 1 (CET 1) capital of € 44.7 billion and Additional Tier 1 (AT1) capital of € 6.8 billion. The Tier 1 capital was € 1.0 billion higher than at the end of December 31, 2019, driven by an increase in CET 1 capital of € 0.6 billion and an increase in AT1 capital of € 0.5 billion since year end 2019.

The CET 1 capital increase of € 0.6 billion was largely the result of benefits from the regulatory changes. Our capital increased as respective deductions of goodwill and other intangible assets lowered by € 1.6 billion due to regulatory changes from software assets due to an amended Art. 36 (1) (b) CRR. An additional increase of € 0.4 billion resulted from the regulatory requirement of valuing subsidiaries and participations that are only consolidated under IFRS at-equity rather than at-cost and a further increase of € 0.1 billion as of year-end 2020 as we make use of the IFRS 9 transitional provision as per Article 473a of the CRR. Our decreased regulatory adjustment of € 0.3 billion from prudential filters (mainly additional value adjustments) were the result of a temporary change of the EBA technical standard on the aggregation methodology of prudential valuations following the disruptions caused by the COVID-19 pandemic and markets normalizing in the second half of 2020. Further increase of € 0.3 billion was driven by re-measurement gains related to defined benefit pension plan and unrealized gains from financial instruments at fair value through other comprehensive income of € 0.2 billion driven mainly by falling interest rates and narrowing credit spreads compared to 2019.

These positive impacts were partly offset by negative effects from Currency Translation Adjustments of € 1.7 billion with some positive foreign exchange counter-effects in capital deduction items of € 0.4 billion. Furthermore our CET 1 capital decreased by € 0.7 billion from a deduction as per ECB's supervisory recommendation for prudential provisioning of non-performing exposures and € 0.3 billion due to payment of our AT1 coupon in the second quarter of 2020 which was not accrued in CET 1 capital as a consequence of the negative net income in financial year 2019 following Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

The € 0.5 billion increase in AT1 capital was mainly the result of an issued AT1 capital instruments with a notional amount of U.S.$ 1.3 billion (€ 1.2 billion) during the first quarter of 2020 partially offset by call and redemption of one legacy hybrid Tier 1 instrument, recognizable as AT1 capital during the transition period, with a notional amount of € 0.7 billion in the second quarter of 2020.

Our fully loaded Total Regulatory capital as of December 31, 2020 was € 57.1 billion, compared to € 56.5 billion at the end of December 31, 2019. Our fully loaded Tier 1 capital as of December 31, 2020 was € 50.4 billion, compared to € 48.7 billion at the end of December 31, 2019. Our fully loaded AT1 capital amounted to € 5.7 billion as of December 31, 2020 which increased compared to € 4.6 billion at the end of December 31, 2019 due to the above mentioned issuance. Our CET 1 capital amounted to € 44.7 billion as of December 31, 2020, compared to € 44.1 billion at the end of December 31, 2019.

Please note: In our CET 1 capital amounting to € 44.7 billion at December 31, 2020, we reflected a full year profit of € 84 million in line with ECB Decision (EU) 2015/656 and Article 26(2) CRR. If we would have considered a dividend payment of zero, which is expected for the financial year 2020, our CET 1 capital would have amounted to € 44.9 billion. On the basis of this revised CET1 capital our key regulatory metrics would have amounted to the following: CET 1 ratio 13.6 %, Tier 1 ratio 15.7 %, Total Capital ratio 17.8 %, fully loaded Leverage Ratio 4.7 %, TLAC ratio 32.0 % and MREL 10.3 %. In order to comply with recent EBA/ECB guidance we will provide an updated Pillar 3 Report in 2021.

Own Funds Template (incl. RWA and capital ratios)

in € m.	Dec 31, 2020 CRR/CRD fully-loaded[3]	Dec 31, 2020 CRR/CRD	Dec 31, 2019 CRR/CRD fully loaded[3]	Dec 31, 2019 CRR/CRD
Common Equity Tier 1 (CET 1) capital: instruments and reserves				
Capital instruments, related share premium accounts and other reserves	45,890	45,890	45,780	45,780
Retained earnings	9,784	9,784	14,814	14,814
Accumulated other comprehensive income (loss), net of tax	(1,118)	(1,118)	537	537
Independently reviewed interim profits net of any foreseeable charge or dividend[1]	84	84	(5,390)	(5,390)
Other	805	805	837	837
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	**55,444**	**55,444**	56,579	56,579
Common Equity Tier 1 (CET 1) capital: regulatory adjustments				
Additional value adjustments (negative amount)	(1,430)	(1,430)	(1,738)	(1,738)
Other prudential filters (other than additional value adjustments)	(112)	(112)	(150)	(150)
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	(4,635)	(4,635)	(6,515)	(6,515)
Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (negative amount)	(1,353)	(1,353)	(1,126)	(1,126)
Negative amounts resulting from the calculation of expected loss amounts	(99)	(99)	(259)	(259)
Defined benefit pension fund assets (net of related tax liabilities) (negative amount)	(772)	(772)	(892)	(892)
Direct, indirect and synthetic holdings by an institution of own CET 1 instruments (negative amount)	0	0	(15)	(15)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above the 10 % / 15 % thresholds and net of eligible short positions) (negative amount)	0	0	0	0
Deferred tax assets arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (amount above the 10 % / 15 % thresholds) (negative amount)	(92)	(92)	(319)	(319)
Other regulatory adjustments[2]	(2,252)	(2,252)	(1,417)	(1,417)
Total regulatory adjustments to Common Equity Tier 1 (CET 1) capital	**(10,745)**	**(10,745)**	(12,430)	(12,430)
Common Equity Tier 1 (CET 1) capital	**44,700**	**44,700**	44,148	44,148
Additional Tier 1 (AT1) capital: instruments				
Capital instruments and the related share premium accounts	5,828	5,828	4,676	4,676
Amount of qualifying items referred to in Art. 484 (4) CRR and the related share premium accounts subject to phase out from AT1	N/M	1,100	N/M	1,813
Additional Tier 1 (AT1) capital before regulatory adjustments	**5,828**	**6,928**	4,676	6,489
Additional Tier 1 (AT1) capital: regulatory adjustments				
Direct, indirect and synthetic holdings by an institution of own AT1 instruments (negative amount)	(80)	(80)	(91)	(91)
Residual amounts deducted from AT1 capital with regard to deduction from CET 1 capital during the transitional period pursuant to Art. 472 CRR	N/M	N/M	N/M	N/M
Other regulatory adjustments	0	0	0	0
Total regulatory adjustments to Additional Tier 1 (AT1) capital	**(80)**	**(80)**	(91)	(91)
Additional Tier 1 (AT1) capital	**5,748**	**6,848**	4,584	6,397
Tier 1 capital (T1 = CET 1 + AT1)	**50,448**	**51,548**	48,733	50,546
Tier 2 (T2) capital	**6,623**	**6,944**	7,770	5,957
Total capital (TC = T1 + T2)	**57,071**	**58,492**	56,503	56,503
Total risk-weighted assets	**328,951**	**328,951**	324,015	324,015
Capital ratios				
Common Equity Tier 1 capital ratio (as a percentage of risk-weighted assets)	13.6	13.6	13.6	13.6
Tier 1 capital ratio (as a percentage of risk-weighted assets)	15.3	15.7	15.0	15.6
Total capital ratio (as a percentage of risk-weighted assets)	17.3	17.8	17.4	17.4

N/M – Not meaningful
[1] Full year profit is recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).
[2] Includes € 0.4 billion capital deduction effective from April 2019 and € 0.3 billion effective from October 2016 based on regular ECB review, € 0.9 billion capital deduction based on ECB guidance on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme effective from January 2018 onwards and € 0.7 billion capital deduction effective from December 2020 based on ECB's supervisory recommendation for a prudential provisioning of non-performing exposures. Effective June 30, 2020, we make use of the IFRS 9 transitional provision as per Article 473a of the CRR resulting in CET 1 increase of € 0.1 billion as of December 31, 2020.
[3] For the understanding of the term "fully-loaded" please refer to our definition as provided in section "Own Funds" of this report.

Reconciliation of shareholders' equity to Own Funds

in € m.	Dec 31, 2020	CRR/CRD Dec 31, 2019
Total shareholders' equity per accounting balance sheet (IASB IFRS)	**54,774**	55,857
Difference between equity per IASB IFRS / EU IFRS[4]	12	0
Total shareholders' equity per accounting balance sheet (EU IFRS)	**54,786**	55,857
Deconsolidation/Consolidation of entities[3]	265	(116)
Of which:		
Additional paid-in capital	0	(12)
Retained earnings	265	(220)
Accumulated other comprehensive income (loss), net of tax	0	116
Total shareholders' equity per regulatory balance sheet	**55,050**	55,741
Minority Interests (amount allowed in consolidated CET 1)	805	837
Accrual for dividend and AT1 coupons[1]	(411)	0
Reversal of deconsolidation/consolidation of the position Accumulated other comprehensive income (loss), net of tax, during transitional period	0	0
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	**55,444**	56,579
Additional value adjustments	(1,430)	(1,738)
Other prudential filters (other than additional value adjustments)	(112)	(150)
Regulatory adjustments relating to unrealized gains and losses pursuant to Art. 467 and 468 CRR	0	0
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	(4,635)	(6,515)
Deferred tax assets that rely on future profitability	(1,445)	(1,445)
Defined benefit pension fund assets (net of related tax liabilities) (negative amount)	(772)	(892)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Other regulatory adjustments[2]	(2,351)	(1,692)
Common Equity Tier 1 capital	**44,700**	44,148

[1] Full year profit is recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).
[2] Includes € 0.4 billion capital deduction effective from April 2019 and € 0.3 billion effective from October 2016 based on regular ECB review, € 0.9 billion capital deduction based on ECB guidance on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme effective from January 2018 onwards, € 0.1 billion negative amounts resulting from the calculation of expected loss amounts and € 0.7 billion capital deduction effective from December 2020 based on ECB's supervisory recommendation for a prudential provisioning of non-performing exposures. Effective June 30, 2020, we make use of the IFRS 9 transitional provision as per Article 473a of the CRR resulting in CET 1 increase of € 0.1 billion as of December 31, 2020.
[3] Includes € 0.4 billion increase due to regulatory changes from cost to at-equity treatment of subsidiaries and participations that are only consolidated under IFRS.
[4] Differences in "equity per balance sheet" result entirely from deviations in profit (loss) after taxes due to the application of EU carve-out rules as set forth in the chapter "Basis of preparation/impact of changes in accounting principles". These rules were initially applied in the first quarter 2020.

Development of Own Funds

in € m.	twelve months ended Dec 31, 2020	CRR/CRD twelve months ended Dec 31, 2019
Common Equity Tier 1 (CET 1) capital - opening amount	**44,148**	47,486
Common shares, net effect	0	0
Additional paid-in capital	113	253
Retained earnings	854	(6,873)
Common shares in treasury, net effect/(+) sales (–) purchase	(3)	11
Movements in accumulated other comprehensive income	(1,655)	155
Accrual for dividend and Additional Tier 1 (AT1) coupons [1]	(411)	0
Additional value adjustments	308	(234)
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	1,880	2,051
Deferred tax assets that rely on future profitability (excluding those arising from temporary differences)	(227)	1,632
Negative amounts resulting from the calculation of expected loss amounts	160	108
Defined benefit pension fund assets (net of related tax liabilities) (negative amount)	119	219
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Securitization positions not included in risk-weighted assets	0	0
Deferred tax assets arising from temporary differences (amount above 10 % and 15 % threshold, net of related tax liabilities where the conditions in Art. 38 (3) CRR are met)	227	(319)
Other, including regulatory adjustments	(814)	(341)
Common Equity Tier 1 (CET 1) capital - closing amount	**44,700**	44,148
Additional Tier 1 (AT1) Capital – opening amount	**6,397**	7,604
New Additional Tier 1 eligible capital issues	1,134	0
Matured and called instruments	(713)	(1,210)
Transitional arrangements	0	0
Of which:		
Goodwill and other intangible assets (net of related tax liabilities)	0	0
Other, including regulatory adjustments	30	3
Additional Tier 1 (AT1) Capital – closing amount	**6,848**	6,397
Tier 1 capital	**51,548**	50,546
Tier 2 (T2) capital – closing amount	**6,944**	5,957
Total regulatory capital	**58,492**	56,503

[1] Full year profit is recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

Minimum loss coverage for Non Performing Exposure (NPE)

In April 2019, the EU published final regulations for a prudential backstop reserve for non-performing exposure (NPE), which will result in a Pillar 1 deduction from CET 1 capital when a minimum loss coverage requirement is not met. It is applied to exposures originated and defaulted after April 26, 2019

In addition, in March 2018, the ECB published its “Addendum to the ECB Guidance to banks on non-performing loans: supervisory expectations for prudential provisioning of non-performing exposures” and in August 2019, its “Communication on supervisory coverage expectations for NPEs”.

The ECB guidance issued is applicable to all newly defaulted loans after April 1, 2018 and, similar to the EU rules, it requires banks to take measures in case a minimum impairment coverage requirement is not met. Within the annual SREP discussions ECB may impose Pillar 2 measures on banks in case ECB is not confident with measure taken by the individual bank.

For the year end 2020, we introduced a framework to determine the prudential provisioning of non-performing exposure as a Pillar 2 measure as requested in the before mentioned ECB’s guidance and SREP recommendation.

The shortfall between the minimum loss coverage requirements for non-performing exposure and the risk reserves recorded in line with the IFRS 9 for defaulted (Stage 3) assets amounted to € 740 million as of December 31, 2020 and was deducted from CET 1. This additional CET 1 charge can be considered as additional loss reserve and leads to a € 499 million RWA relief.

Non-performing exposure loss coverage

	Dec 31, 2020			
in € m. (unless stated otherwise)	Exposure value	Total minimum coverage requirement	Available coverage	Applicable amount of insufficient coverage
Corporate Bank	2,852	377	1,058	63
Investment Bank	13,510	7,816	10,574	255
Private Bank	6,123	1,269	2,011	361
Asset Management	0	0	0	0
Capital Release Unit	422	183	182	60
Corporate & Other	1	1	0	1
Total	22,907	9,646	13,825	740

Development of risk-weighted assets

The table below provides an overview of RWA broken down by risk type and business division. It includes the aggregated effects of the segmental reallocation of infrastructure related positions, if applicable, as well as reallocations between the segments.

Risk-weighted assets by risk type and business division

	Dec 31, 2020						
in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total
Credit Risk	50,799	70,746	68,353	6,224	7,214	19,371	222,708
Settlement Risk	0	0	0	0	1	54	56
Credit Valuation Adjustment (CVA)	75	6,302	92	198	1,599	125	8,392
Market Risk	385	24,323	548	31	1,470	2,139	28,897
Operational Risk	6,029	27,115	8,081	3,544	24,130	0	68,899
Total	57,288	128,487	77,074	9,997	34,415	21,690	328,951

	Dec 31, 2019						
in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total
Credit Risk	48,633	69,507	66,925	4,873	13,155	17,967	221,060
Settlement Risk	0	192	0	0	6	44	242
Credit Valuation Adjustment (CVA)	48	2,009	103	56	2,450	17	4,683
Market Risk	530	20,390	89	28	4,331	0	25,368
Operational Risk	7,312	26,525	8,325	4,570	25,931	0	72,662
Total	56,522	118,622	75,442	9,527	45,874	18,029	324,015

Our RWA were € 329.0 billion as of December 31, 2020, compared to € 324.0 billion at the end of 2019. The increase of € 4.9 billion was primarily driven by higher RWA for credit valuation adjustment, market risk and credit risk, partially offset by decreased RWA for operational risk. CVA RWA increased by € 3.7 billion as a result of model-related changes. Market risk RWA increased by € 3.5 billion and was primarily driven by the incremental risk charge and the model change from a Monte Carlo simulation to a historical simulation for VaR and SVaR components. The increase in credit risk RWA by € 1.6 billion was driven by the introduction of the new framework for securitization positions, impacts on rating migrations on the back of the repercussion of the prevailing COVID-19 pandemic, method changes for software assets and certain equity investments as well as exposure increases across all businesses. This is partly offset by positive impacts due to application of the "quick fix" amendment of the CRR (Regulation (EU) 2020/873) in relation to certain small or medium-sized enterprise (SME) exposures, where risk weight-reducing scaling factors were applied. Moreover, the decommissioning of our dilution risk model, benefits from the non-performing loan (NPL) backstop implementation as well as de-risking initiatives contributed to this offset. The operational risk RWA reduction of € 3.8 billion was mainly driven by a more favourable development of our internal loss profile feeding into our capital model as well as a model change roll-out of the external loss data classification in alignment with recent regulatory requirements. This was partially offset by the reduced expected loss deductible and the adverse impact on the forward looking component.

The tables below provide an analysis of key drivers for risk-weighted asset movements observed for credit risk, credit valuation adjustments as well as market and operational risk in the reporting period. They also show the corresponding movements in capital requirements, derived from the RWA by an 8 % capital ratio.

Development of risk-weighted assets for Credit Risk including Counterparty Credit Risk

	Dec 31, 2020		Dec 31, 2019	
in € m.	Credit risk RWA	Capital requirements	Credit risk RWA	Capital requirements
Credit risk RWA balance, beginning of year	221,060	17,685	212,827	17,026
Book size	4,659	373	3,192	255
Book quality	1,160	93	(4,700)	(376)
Model updates	(2,072)	(166)	4,867	389
Methodology and policy	6,542	523	2,693	215
Acquisition and disposals	(1,672)	(134)	(300)	(24)
Foreign exchange movements	(7,237)	(579)	2,069	166
Other	268	21	413	33
Credit risk RWA balance, end of year	222,708	17,817	221,060	17,685

Of which: Development of risk-weighted assets for Counterparty Credit Risk

	Dec 31, 2020		Dec 31, 2019	
in € m.	Counterparty credit risk RWA	Capital requirements	Counterparty credit risk RWA	Capital requirements
Counterparty credit risk RWA balance, beginning of year	23,698	1,896	25,282	2,023
Book size	1,784	143	(1,708)	(137)
Book quality	(594)	(48)	(12)	(1)
Model updates	(643)	(51)	318	25
Methodology and policy	669	54	(507)	(41)
Acquisition and disposals	0	0	0	0
Foreign exchange movements	(1,100)	(88)	326	26
Other	0	0	0	0
Counterparty credit risk RWA balance, end of year	23,814	1,905	23,698	1,896

The classifications of key drivers for the RWA credit risk development table are fully aligned with the recommendations of the Enhanced Disclosure Task Force (EDTF). Organic changes in our portfolio size and composition are considered in the category "book size". The category "book quality" mainly represents the effects from portfolio rating migrations, loss given default, model parameter recalibrations as well as collateral and netting coverage activities. "Model updates" include model refinements and advanced model roll out. RWA movements resulting from externally, regulatory-driven changes, e.g. applying new regulations, are considered in the "methodology and policy" section. "Acquisition and disposals" is reserved to show significant exposure movements which can be clearly assigned to new businesses or disposal-related activities. Changes that cannot be attributed to the above categories are reflected in the category "other".

The increase in RWA for credit risk by 0.7 % or € 1.6 billion since December 31, 2019 is mainly driven by the categories "methodology and policy", "book size" as well as "book quality" related changes offset by FX related movements, changes shown in the categories "model updates" and "acquisition and disposals". The category "methodology and policy" reflects mainly updates to the framework for securitization positions, regulatory prudent valuation of software assets and the changed treatment of equity investments. This was partly offset by the benefit from the non-performing loan (NPL) backstop implementation. The increase in the category "book size" reflects business growth in our core business segments. The category "book quality" includes increases resulting from parameter recalibrations and data enhancements. These increases

were partly offset by a decrease resulting from foreign exchange movements. The category "model updates" reflects the decommissioning of our dilution risk model and further refinements to our risk models based on regulatory parameter updates. Furthermore, "acquisition and disposals" provides for a reduction in credit risk RWA particularly within Private Bank and our Capital Release Unit.

The increase in counterparty credit risk is mainly driven by "book size" reflecting growth across core businesses as well as "methodology and policy"-related updates for collateral. This was offset by changes to "model updates" particularly on concentration risk as well as "book quality". In addition the category foreign exchange movements contributed to the offset.

Based on the CRR/CRD regulatory framework, we are required to calculate RWA using the CVA which takes into account the credit quality of our counterparties. RWA for CVA covers the risk of mark-to-market losses on the expected counterparty risk in connection with OTC derivative exposures. We calculate the majority of the CVA based on our own internal model as approved by the BaFin.

Development of risk-weighted assets for Credit Valuation Adjustment

	Dec 31, 2020		Dec 31, 2019	
in € m.	CVA RWA	Capital requirements	CVA RWA	Capital requirements
CVA RWA balance, beginning of year	**4,683**	**374**	7,997	640
Movement in risk levels	(3,338)	(267)	(1,423)	(114)
Market data changes and recalibrations	0	0	0	0
Model updates	5,787	463	0	0
Methodology and policy	1,260	101	(1,891)	(151)
Acquisitions and disposals	0	0	0	0
Foreign exchange movements	0	0	0	0
CVA RWA balance, end of year	**8,392**	**671**	4,683	374

The development of CVA RWA is broken down into a number of categories: "Movement in risk levels", which includes changes to the portfolio size and composition; "Market data changes and calibrations", which includes changes in market data levels and volatilities as well as recalibrations; "Model updates" refers to changes to either the IMM credit exposure models or the value-at-risk models that are used for CVA RWA; "Methodology and policy" relates to changes to the regulation. Any significant business acquisitions or disposals would be presented in the category with that name.

As of December 31, 2020, the RWA for CVA amounted to € 8.4 billion, representing an increase of € 3.7 billion (79 %) compared with € 4.7 billion for December 31, 2019. The overall increase was primarily driven by model enhancements linked to the introduction of the Historical Simulation VaR in 2020, and increased volatility observed due to the COVID-19 market turbulence and additional hedging activity.

Development of risk-weighted assets for Market Risk

						Dec 31, 2020
in € m.	VaR	SVaR	IRC	Other	Total RWA	Total capital requirements
Market risk RWA balance, beginning of year	4,273	13,734	4,868	2,493	25,368	2,029
Movement in risk levels	(4,775)	(2,397)	2,698	570	(3,902)	(311)
Market data changes and recalibrations	4,237	0	0	(131)	4,105	328
Model updates/changes	(107)	547	(561)	0	(121)	(10)
Methodology and policy	8,481	(4,901)	0	(15)	3,565	285
Acquisitions and disposals	0	0	0	0	0	0
Foreign exchange movements	0	0	0	(118)	(118)	(9)
Other	0	0	0	0	0	0
Market risk RWA balance, end of year	12,109	6,983	7,005	2,799	28,897	2,312

						Dec 31, 2019
in € m.	VaR	SVaR	IRC	Other	Total RWA	Total capital requirements
Market risk RWA balance, beginning of year	5,368	16,426	10,068	5,673	37,535	3,003
Movement in risk levels	(1,021)	(1,879)	(5,222)	(2,973)	(11,095)	(888)
Market data changes and recalibrations	(81)	0	0	(315)	(396)	(32)
Model updates/changes	7	(813)	22	0	(784)	(63)
Methodology and policy	0	0	0	120	120	10
Acquisitions and disposals	0	0	0	0	0	0
Foreign exchange movements	0	0	0	(11)	(11)	(1)
Other	0	0	0	0	0	0
Market risk RWA balance, end of year	4,273	13,734	4,868	2,493	25,368	2,029

The analysis for market risk covers movements in our internal models for value-at-risk (VaR), stressed value-at-risk (SVaR), incremental risk charge (IRC) as well as results from the market risk standardized approach (MRSA), which is captured in the table under the category "Other". MRSA is used to determine the regulatory capital charge for the specific market risk of trading book securitizations, for certain types of investment funds and for longevity risk as set out in CRR/CRD regulations.

The market risk RWA movements due to changes in market data levels, volatilities, correlations, liquidity and ratings are included under the "Market data changes and recalibrations" category. Changes to our market risk RWA internal models, such as methodology enhancements or risk scope extensions, are included in the category of "Model updates". In the "Methodology and policy" category we reflect regulatory driven changes to our market risk RWA models and calculations. Significant new businesses and disposals would be assigned to the line item "Acquisition and disposals". The impacts of "Foreign exchange movements" are only calculated for the CRM and Standardized approach methods.

As of December 31, 2020 the RWA for market risk was € 28.9 billion which has increased by € 3.5 billion (+14 %) since December 31, 2019. The increase was driven by the "Market data changes and recalibrations" category across value-at-risk driven by the COVID-19 related market volatility and by the "Methodology and policy" category driven by the go-live of Historical Simulation model. The offset from the "Movement in risk levels" category across value-at-risk and stressed value-at-risk reflect the portfolio de-risking activities over 2020; while an increase in incremental risk charge was driven by increases in sovereign exposures.

Development of risk-weighted assets for operational risk

	Dec 31, 2020		Dec 31, 2019	
in € m.	Operational risk RWA	Capital requirements	Operational risk RWA	Capital requirements
Operational risk RWA balance, beginning of year	72,662	5,813	91,989	7,359
Loss profile changes (internal and external)	(4,677)	(374)	(8,185)	(655)
Expected loss development	1,164	93	1,747	140
Forward looking risk component	533	43	1,879	150
Model updates	(784)	(63)	(14,768)	(1,181)
Methodology and policy	0	0	0	0
Acquisitions and disposals	0	0	0	0
Operational risk RWA balance, end of year	68,899	5,512	72,662	5,813

Changes in internal and external loss events are reflected in the category "Loss profile changes". The category "Expected loss development" is based on divisional business plans as well as historical losses and is deducted from the AMA capital figure within certain constraints. The category "Forward looking risk component" reflects qualitative adjustments and, as such, the effectiveness and performance of the day-to-day operational risk management activities via NFR appetite metrics and RCA scores, focusing on the business environment and internal control factors. The category "Model updates" covers model refinements, such as the implementation of model changes. The category "Methodology and policy" represents externally driven changes such as regulatory add-ons. The category "Acquisition and disposals" represents significant exposure movements which can be clearly assigned to new or disposed businesses.

The overall RWA decrease of € 3.8 billion was driven by several effects. A reduced litigation intensity throughout the industry as well as provision and legal forecast levels below previous years for Deutsche Bank led to a lighter loss profile feeding into our capital model. These loss profile changes (internal and external) reduced our RWA for Operational Risk by € 4.7 billion.

The RWA decrease of € 0.8 billion from model updates was largely driven by the full roll-out of the external loss data classification process, which we had started to introduce in 2019. Two other model updates with smaller capital impact enhanced and simplified our methodology for the sub-allocation of OR RWA within business divisions and aligned our OR event frequency dependence modelling to AMA EBA Regulatory Technical Standard requirements.

The expected loss deductible reduction was driven by a positive outlook of operational risk loss development, leading to an RWA increase of € 1.2 billion. The forward looking component was adversely impacted by slightly weaker NFR appetite metrics and RCA scores, resulting in an RWA increase of € 0.5 billion.

Economic Capital

Economic Capital Adequacy

Our internal capital adequacy assessment process (ICAAP) aims at maintaining the continuity of Deutsche Bank on an ongoing basis. We assess our internal capital adequacy from an economic perspective as the ratio of our economic capital supply divided by our internal economic capital demand as shown in the table below.

Total economic capital supply and demand

in € m. (unless stated otherwise)	Dec 31, 2020	Dec 31, 2019
Components of economic capital supply		
Shareholders' equity	54,786	55,857
Noncontrolling interests[1]	880	953
AT1 coupons accruals	(242)	(222)
Gain on sale of securitisations, cash flow hedges	(11)	(23)
Fair value gains on own debt and debt valuation adjustments, subject to own credit risk	(100)	(127)
Additional valuation adjustments	(1,430)	(1,738)
Intangible assets	(3,463)	(7,029)
IFRS deferred tax assets excl. temporary differences	(1,503)	(1,254)
Expected loss shortfall	(99)	(259)
Defined benefit pension fund assets	(772)	(892)
Holdings of own common equity tier 1 capital instruments	0	(0)
Other adjustments[2]	(1,566)	(1,417)
Additional tier 1 equity instruments[3]	4,659	3,732
Economic capital supply	**51,138**	47,581
Components of economic capital demand		
Credit risk	11,636	10,757
Market risk	10,894	11,767
Operational risk	5,512	5,813
Business risk	5,949	6,374
Diversification benefit	(5,429)	(5,535)
Total economic capital demand	**28,560**	29,176
Economic capital adequacy ratio	**179 %**	163 %

[1] Includes noncontrolling interest up to the economic capital requirement for each subsidiary.
[2] Includes € 0.4 billion capital deduction effective from April 2019 and € 0.3 billion effective from October 2016 based on regular ECB review and € 0.9 billion capital deduction based on ECB guidance on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme effective from January 2018 onwards.
[3] De-recognition of Additional Tier 1 equity instruments from economic capital supply temporarily paused during 2020.

The economic capital adequacy ratio was 179 % as of December 31, 2020, compared with 163 % as of December 31, 2019. The change in the ratio was mainly due to an increase in capital supply and a decrease in capital demand. The economic capital supply increased by € 3.6 billion and was primarily driven by lower capital deductions of intangible assets of € 3.6 billion which mainly reflects the methodology decision to recognize software assets in economic capital supply and the decrease in prudential filters (additional valuation adjustment) of € 0.3 billion which were the result of a temporary change of the EBA technical standard on the aggregation methodology of prudential valuations following the disruptions caused by the COVID-19 pandemic and markets normalizing in the second half of 2020. Additionally, capital increased from the recognition of newly issued Additional Tier 1 capital instruments of € 0.9 billion during the first quarter of 2020. These positive impacts were partly offset by reduction of € 1.1 billion from our IFRS shareholders' equity mainly due to negative effects from Currency Translation Adjustments of € 1.7 billion with some positive offset from our net income of € 0.5 billion. The decrease in capital demand was driven by lower economic capital demand as explained in the section "Risk Profile".

The above capital adequacy measures apply to the consolidated Deutsche Bank Group as a whole and form an integral part of our risk and capital management framework.

Leverage ratio

We manage our balance sheet on a Group level and, where applicable, locally in each region. In the allocation of financial resources we favor business portfolios with the highest positive impact on our profitability and shareholder value. We monitor and analyze balance sheet developments and track certain market-observed balance sheet ratios. Based on this we trigger discussion and management action by the Group Risk Committee (GRC).

Leverage Ratio according to CRR/CRD framework

The non-risk based leverage ratio is intended to act as a supplementary measure to the risk based capital requirements. Its objectives are to constrain the build-up of leverage in the banking sector, helping avoid destabilizing deleveraging processes which can damage the broader financial system and the economy, and to reinforce the risk based requirements with a simple, non-risk based "backstop" measure.

A minimum leverage ratio requirement of 3 % was introduced that will be effective starting with June 28, 2021. From January 1, 2023 an additional leverage ratio buffer requirement of 50 % of the applicable G-SIB buffer rate will apply. It is currently expected that this additional requirement will equal 0.75 %.

We calculate our leverage ratio exposure in accordance with Article 429 of the CRR as per Delegated Regulation (EU) 2015/62 of October 10, 2014 published in the Official Journal of the European Union on January 17, 2015 and amended by Regulation (EU) 2020/873 published in the Official Journal of the European Union on June 24, 2020.

Our total leverage ratio exposure includes derivatives, securities financing transactions (SFTs), off-balance sheet exposure and other on-balance sheet exposure (excluding derivatives and SFTs).

The leverage exposure for derivatives is calculated by using the regulatory mark-to-market method for derivatives comprising the current replacement cost plus a regulatory defined add-on for the potential future exposure. Variation margin received in cash from counterparties is deducted from the current replacement cost portion of the leverage ratio exposure measure and variation margin paid to counterparties is deducted from the leverage ratio exposure measure related to receivables recognized as an asset on the balance sheet, provided certain conditions are met. Deductions of receivables for cash variation margin provided in derivatives transactions are shown under derivative exposure in the table “Leverage ratio common disclosure” below. The effective notional amount of written credit derivatives, i.e., the notional reduced by any negative fair value changes that have been incorporated in Tier 1 capital is included in the leverage ratio exposure measure; the resulting exposure measure is further reduced by the effective notional amount of purchased credit derivative protection on the same reference name provided certain conditions are met.

The securities financing transaction (SFT) component includes the gross receivables for SFTs, which are netted with SFT payables if specific conditions are met. In addition to the gross exposure a regulatory add-on for the counterparty credit risk is included.

The off-balance sheet exposure component follows the credit risk conversion factors (CCF) of the standardized approach for credit risk (0 %, 20 %, 50 %, or 100 %), which depend on the risk category subject to a floor of 10 %.

The on-balance sheet exposures (excluding derivatives and SFTs) component reflects the accounting values of the assets (excluding derivatives, SFTs and regular-way purchases and sales awaiting settlement) as well as regulatory adjustments for asset amounts deducted in determining Tier 1 capital. The exposure value of regular-way purchases and sales awaiting settlement is determined as offset between those cash receivables and cash payables where the related regular-way sales and purchases are both settlement on a delivery-versus payment basis.

The Group excludes certain Euro-based exposures to Eurosystem central banks from the leverage exposure having obtained permission from the European Central Bank in accordance with ECB’s Decision (EU) 2020/1306. This temporary exclusion was firstly introduced in the third quarter of 2020 and currently applies until June 27, 2021.

The following tables show the leverage ratio exposure and the leverage ratio. The Leverage ratio common disclosure table provides the leverage ratio on a fully-loaded and phase-in basis with the fully-loaded and phase-in Tier 1 Capital, respectively, in the numerator. For further details on Tier 1 capital please also refer to the section “Development of Own Funds”.

Summary reconciliation of accounting assets and leverage ratio exposures

in € bn.	Dec 31, 2020	Dec 31, 2019
Total assets as per published financial statements	**1,325**	1,298
Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	1	(1)
Adjustments for derivative financial instruments	(206)	(188)
Adjustment for securities financing transactions (SFTs)	10	6
Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	101	103
Other adjustments	(153)	(50)
Leverage ratio total exposure measure	**1,078**	1,168

Leverage ratio common disclosure

in € bn. (unless stated otherwise)	Dec 31, 2020	Dec 31, 2019
Total derivative exposures	99	113
Total securities financing transaction exposures	83	93
Total off-balance sheet exposures	101	103
Other Assets	803	869
Asset amounts deducted in determining Tier 1 capital	(8)	(10)
Tier 1 capital (fully loaded)	50.4	48.7
Leverage ratio total exposure measure	1,078	1,168
Leverage ratio (fully loaded, in %)	4.7	4.2
Tier 1 capital (phase-in)	51.5	50.5
Leverage ratio total exposure measure	1,078	1,168
Leverage ratio (phase-in, in %)	4.8	4.3

Description of the factors that had an impact on the leverage ratio in 2020

As of December 31, 2020, our fully loaded leverage ratio was 4.7 % compared to 4.2 % as of December 31, 2019. This takes, into account a fully loaded Tier 1 capital of € 50.4 billion over an applicable exposure measure of € 1,078 billion as of December 31, 2020 (€ 48.7 billion and € 1,168 billion as of December 31, 2019, respectively).

Our leverage ratio according to transitional provisions was 4.8 % as of December 31, 2020 (4.3 % as of December 31, 2019), calculated as Tier 1 capital according to transitional rules of € 51.5 billion over an applicable exposure measure of € 1,078 billion (€ 50.5 billion and € 1,168 billion as of December 31, 2019, respectively).

Over the year 2020, our leverage exposure decreased by € 90 billion to € 1,078 billion, mainly driven by the application of the “quick fix” amendment of the CRR (Regulation (EU) 2020/873, Article 500b) approved by ECB-Decision (EU) 2020/1306, allowing the temporary exclusion of certain central bank exposures contributing a reduction of € 85 billion. Without this temporary exclusion, our Leverage exposure decreased by € 5 billion in the year 2020, primarily driven by the leverage exposure related to derivatives which decreased by € 14 billion (€ 7 billion excluding deductions of receivables assets for cash variation margin provided in derivatives transactions) mainly from lower add-ons for potential future exposure. The movements in the securities financing transactions (SFT) and other assets categories largely reflect the development of our balance sheet (for additional information please refer to section “Movements in assets and liabilities” in this report): Cash and central bank/interbank balances increased by € 28 billion and Financial assets at fair value through OCI grew by € 11 billion. This was partly offset by decreases in SFT-related items (Securities purchased under resale agreements, Securities borrowed and Receivables from prime brokerage) by € 10 billion, Non-derivative trading assets by € 4 billion and Loans by € 3 billion. The remaining asset items decreased by € 5 billion, largely related to Held-to-collect debt securities. Pending settlements decreased by € 7 billion - despite being almost unchanged on a gross basis - due to application of the “quick fix” amendment of the CRR (Regulation (EU) 2020/873, Article 500d), allowing the netting of cash receivables and cash payables where the related regular-way sales and purchases are both settled on a delivery-versus-payment basis. Furthermore, Off-balance sheet exposures decreased by € 1 billion corresponding to lower notional amounts for irrevocable lending commitments.

The decrease in leverage exposure in 2020 included a negative foreign exchange impact of € 43 billion mainly due to the weakening of the U.S. Dollar versus the Euro. The effects from foreign exchange rate movements are embedded in the movement of the leverage exposure items discussed in this section.

For main drivers of the Tier 1 capital development please refer to section “Development of Own Funds”.

Minimum Requirement of own funds and Eligible Liabilities (“MREL”) and Total Loss Absorbing Capacity (“TLAC”)

MREL Requirements

The minimum requirement for own funds and eligible liabilities (“MREL”) requirement was introduced by the European Union’s regulation establishing uniform rules and a uniform procedure for the resolution of credit institutions (Single Resolution Mechanism Regulation or “SRM Regulation”) and the European Union’s Directive establishing a framework for the recovery and resolution of credit institutions (Bank Recovery and Resolution Directive or “BRRD”) as implemented into German law by the German Recovery and Resolution Act.

The currently required level of MREL is determined by the competent resolution authorities for each supervised bank individually on a case-by-case basis, depending on the respective preferred resolution strategy. In the case of Deutsche Bank AG, MREL is determined by the Single Resolution Board (“SRB”). While there is no statutory minimum level of MREL, the SRM Regulation, BRRD and a delegated regulation set out criteria which the resolution authority must consider when determining the relevant required level of MREL. Guidance is provided through an MREL policy published annually by the SRB. Any binding MREL ratio determined by the SRB is communicated to Deutsche Bank via the German Federal Financial Supervisory Authority (BaFin).

In the second quarter of 2018, Deutsche Bank AG’s binding MREL ratio requirement on a consolidated basis has been set at 9.14 % of Total Liabilities and Own Funds (“TLOF”) applicable immediately. TLOF principally consists of total liabilities after derivatives netting, plus own funds, i.e. regulatory capital.

As a results of its regular annual review, the SRB has revised Deutsche Bank AG’s binding MREL ratio requirement in the last quarter of 2019 applicable immediately. The MREL ratio requirement on a consolidated basis has been lowered to 8.58 % of TLOF of which 6.11 % of TLOF now have to be met with own funds and subordinated instruments as an additional requirement.

As announced by the SRB the next update of Deutsche Bank AG’s binding MREL and subordinated MREL requirement is expected in the first half of 2021 and will for the first time reflect the legal changes of the banking reform package via amendments to the Single Resolution Mechanism Regulation and the Bank Recovery and Resolution Directive provided in June 2019 with the publication of Regulation (EU) 2019/877 and Directive (EU) 2019/879. As a result the MREL and subordinated MREL requirement will no longer be expressed as a percentage of TLOF but as a percentage of Risk Weighted Assets (RWA) and Leverage Ratio Exposure (LRE). This will lead to a higher MREL and subordinated MREL requirement in 2021 compared to 2020.

TLAC Requirements

Since June 27, 2019, Deutsche Bank, as a global systemically important bank, has also become subject to global minimum standards for its Total Loss-Absorbing Capacity (“TLAC”). The TLAC requirement has been implemented with the banking reform package via amendments to the Capital Requirements Regulation and the Capital Requirements Directive provided in June 2019 with the publication of Regulation (EU) 2019/876 and Directive (EU) 2019/878.

This TLAC requirement is based on both risk-based and non-risk-based denominators and set at the higher-of 16 % of risk weighted assets plus the combined buffer requirements and 6.00 % of the leverage exposure for a transition period until December 31, 2021. Thereafter, the higher-of 18 % of risk weighted assets plus the combined buffer requirements and 6.75 % of the leverage exposure are to be met.

MREL ratio development

As of December 31, 2020, TLOF were € 1,019 billion and available MREL were € 109 billion, corresponding to a ratio of 10.67 %. This means that Deutsche Bank has a comfortable MREL surplus of € 21 billion above our MREL requirement of € 87 billion (i.e. 8.58 % of TLOF). € 105 billion of our available MREL were own funds and subordinated liabilities, corresponding to a MREL subordination ratio of 10.31 %, a buffer of € 43 billion over our subordination requirement of € 62 billion (i.e. 6.11 % of TLOF). Compared to December 31, 2019 the surpluses above both our MREL requirement and our subordinated MREL requirement have been reduced to more moderate levels. This was achieved through new issuances not fully replacing eligible liabilities falling below the one year maturity threshold for MREL eligibility. This also impacted the development of the TLAC ratio.

TLAC ratio development

As of December 31, 2020, TLAC was € 105 billion and the corresponding TLAC ratios were 31.9 % (RWA based) and 9.7 % (Leverage exposure based). This means that Deutsche Bank has a comfortable TLAC surplus of € 38 billion over its total loss absorbing capacity minimum requirement of € 67 billion (20.52 % RWA based).

MREL and TLAC disclosure

in € m. (unless stated otherwise)	Dec 31, 2020	Dec 31, 2019
Regulatory capital elements of TLAC/MREL		
Common Equity Tier 1 capital (CET 1)	44,700	44,148
Additional Tier 1 (AT1) capital instruments eligible under TLAC/MREL	6,848	6,397
Tier 2 (T2) capital instruments eligible under TLAC/MREL		
Tier 2 (T2) capital instruments before TLAC/MREL adjustments	6,944	5,957
Tier 2 (T2) capital instruments adjustments for TLAC/MREL	518	16
Tier 2 (T2) capital instruments eligible under TLAC/MREL	7,462	5,973
Total regulatory capital elements of TLAC/MREL	59,010	56,519
Other elements of TLAC/MREL		
Senior non-preferred plain vanilla	46,048	55,803
Holdings of eligible liabilities instruments of other G-SIIs (TLAC only)	0	–
Total Loss Absorbing Capacity (TLAC)	105,058	112,322
Add back of holdings of eligible liabilities instruments of other G-SIIs (TLAC only)	0	0
Available Own Funds and subordinated Eligible Liabilities (subordinated MREL)	105,058	112,322
Senior preferred plain vanilla	3,658	2,856
Available Minimum Own Funds and Eligible Liabilities (MREL)	108,716	115,178
Risk Weighted Assets (RWA)	328,951	324,015
Leverage Ratio Exposure (LRE)	1,078,268	1,168,040
Total liabilities and own funds after prudential netting (TLOF)	1,018,558	995,513
TLAC ratio		
TLAC ratio (as percentage of RWA)	31.94	34.67
TLAC requirement (as percentage of RWA)	20.52	20.58
TLAC ratio (as percentage of Leverage Exposure)	9.74	9.62
TLAC requirement (as percentage of Leverage Exposure)	6.00	6.00
TLAC surplus over RWA requirement	37,562	45,639
TLAC surplus over LRE requirement	40,362	42,239
MREL subordination		
MREL subordination ratio (as percentage of TLOF)	10.31	11.28
MREL subordination requirement (as percentage of TLOF)	6.11	6.11
Surplus over MREL subordination requirement	42,824	51,496
MREL ratio		
MREL ratio (as percentage of TLOF)	10.67	11.57
MREL requirement (as percentage of TLOF)	8.58	8.58
MREL surplus over requirement	21,323	29,763

Own Funds and Eligible Liabilities

In order to meet the MREL and TLAC requirement, Deutsche Bank needs to ensure that a sufficient amount of eligible instruments is maintained. Instruments eligible for MREL and TLAC are regulatory capital instruments (“own funds”) and liabilities that meet certain criteria, which are referred to as eligible liabilities.

Own funds used for MREL and TLAC include the full amount of Tier 2 capital instruments with a remaining maturity of greater than 1 year and less than 5 years which are reflected in regulatory capital on a pro-rata basis only.

Eligible liabilities are liabilities issued out of the resolution entity Deutsche Bank AG that meet eligibility criteria which are supposed to ensure that they are structurally suited as loss-absorbing capital. As a result, eligible liabilities exclude deposits which are covered by an deposit protection scheme or which are preferred under German insolvency law (e.g., deposits from private individuals as well as small and medium-size enterprises). Among other things, secured liabilities, derivatives liabilities and debt instruments with embedded derivatives (e.g. structured notes) are generally excluded as well. In addition, eligible liabilities must have a remaining time to maturity of at least one year and must either be issued under the law of a Member State of the European Union or must include a bail-in clause in their contractual terms to make write-down or conversion effective. As a consequence, € 4 bn eligible liabilities issued under UK law will lose recognition for MREL after Brexit starting

January 2021 in case they are issued after January 1, 2015 (the effective date of the German transposition of the Bank Recovery and Resolution Directive) and do not include an enforceable and effective bail-in clause

In addition, eligible liabilities need to be subordinated in order to be counted against the TLAC and new MREL subordination requirements. Effective January 1, 2017, the German Banking Act provided for a new class of statutorily subordinated debt securities that rank as “senior non-preferred” below the bank’s other senior liabilities (but in priority to the bank’s contractually subordinated liabilities, such as those qualifying as Tier 2 instruments). Following a harmonization effort by the European Union implemented in Germany effective July 21, 2018, banks are permitted to now decide if a specific issuance of eligible senior debt will be in the non-preferred or in the preferred category. Any such “senior non-preferred” debt instruments issued by Deutsche Bank AG under such new rules rank on parity with its outstanding debt instruments that were classified as “senior non-preferred” under the prior rules. All of these “senior non-preferred” issuances meet the TLAC and MREL subordination criteria.

Credit risk exposure

We define our credit exposure by taking into account all transactions where losses might occur due to the fact that counterparties may not fulfill their contractual payment obligations as defined under ‘Credit Risk Framework’.

Maximum Exposure to Credit Risk

The maximum exposure to credit risk table shows the direct exposure before consideration of associated collateral held and other credit enhancements (netting and hedges) that do not qualify for offset in our financial statements for the periods specified. The netting credit enhancement component includes the effects of legally enforceable netting agreements as well as the offset of negative mark-to-markets from derivatives against pledged cash collateral. The collateral credit enhancement component mainly includes real estate, collateral in the form of cash as well as securities-related collateral. In relation to collateral we apply internally determined haircuts and additionally cap all collateral values at the level of the respective collateralized exposure.

Maximum Exposure to Credit Risk

	Dec 31, 2020					
			Credit Enhancements			
in € m.	Maximum exposure to credit risk[1]	Subject to impairment	Netting	Collateral	Guarantees and Credit derivatives[2]	Total credit enhancements
Financial assets at amortized cost[3]						
Cash and central bank balances	166,211	166,211	–	0	–	0
Interbank balances (w/o central banks)	9,132	9,132	–	0	0	0
Central bank funds sold and securities purchased under resale agreements	8,535	8,535	–	8,173	–	8,173
Securities borrowed	0	0	–	0	–	0
Loans	431,503	431,503	–	228,513	30,119	258,632
Other assets subject to credit risk[4,5]	96,355	85,106	43,277	902	55	44,234
Total financial assets at amortized cost[3]	711,736	700,487	43,277	237,588	30,174	311,039
Financial assets at fair value through profit or loss[6]						
Trading assets	94,757	–	–	2,998	1,248	4,246
Positive market values from derivative financial instruments	343,493	–	262,525	52,329	83	314,937
Non-trading financial assets mandatory at fair value through profit or loss	75,116	–	993	62,036	244	63,273
Of which:						
Securities purchased under resale agreement	46,057	–	993	44,967	0	45,960
Securities borrowed	17,009	–	–	16,730	0	16,730
Loans	2,192	–	–	272	244	516
Financial assets designated at fair value through profit or loss	437	–	–	0	0	0
Total financial assets at fair value through profit or loss	513,803	–	263,518	117,363	1,575	382,456
Financial assets at fair value through OCI	55,834	55,834	0	1,581	1,153	2,734
Of which:						
Securities purchased under resale agreement	1,543	1,543	–	0	0	0
Securities borrowed	0	0	–	0	0	0
Loans	4,635	4,635	–	1,581	1,153	2,734
Total financial assets at fair value through OCI	55,834	55,834	–	1,581	1,153	2,734
Financial guarantees and other credit related contingent liabilities[7]	47,978	47,978	–	2,327	6,157	8,484
Revocable and irrevocable lending commitments and other credit related commitments[7]	215,877	214,898	–	15,345	5,779	21,124
Total off-balance sheet	263,855	262,876	–	17,672	11,936	29,608
Maximum exposure to credit risk	1,545,228	1,019,197	306,795	374,204	44,838	725,837

[1] Does not include credit derivative notional sold (€ 395,636 million) and credit derivative notional bought protection.
[2] Bought Credit protection is reflected with the notional of the underlying.
[3] All amounts at gross value before deductions of allowance for credit losses.
[4] All amounts at amortized cost (gross) except for qualifying hedge derivatives, which are reflected at Fair value through P&L.
[5] Includes Asset Held for Sale regardless of accounting classification.
[6] Excludes equities, other equity interests and commodities.
[7] Figures are reflected at notional amounts.

						Dec 31, 2019
			Credit Enhancements			
in € m.	Maximum exposure to credit risk[1]	Subject to impairment	Netting	Collateral	Guarantees and Credit derivatives[2]	Total credit enhancements
Financial assets at amortized cost[3]						
Cash and central bank balances	137,596	137,596	–	0	–	0
Interbank balances (w/o central banks)	9,642	9,642	–	0	0	0
Central bank funds sold and securities purchased under resale agreements	13,800	13,800	–	13,650	–	13,650
Securities borrowed	428	428	–	303	–	303
Loans	433,834	433,834	–	228,620	27,984	256,605
Other assets subject to credit risk[4,5]	96,779	85,028	37,267	1,524	42	38,833
Total financial assets at amortized cost[3]	692,079	680,328	37,267	244,098	28,026	309,392
Financial assets at fair value through profit or loss[6]						
Trading assets	93,369	–	–	1,480	861	2,340
Positive market values from derivative financial instruments	332,931	–	262,326	48,608	134	311,068
Non-trading financial assets mandatory at fair value through profit or loss	84,359	–	853	69,645	259	70,757
Of which:						
Securities purchased under resale agreement	53,366	–	853	51,659	0	52,512
Securities borrowed	17,918	–	–	17,599	0	17,599
Loans	3,174	–	–	290	259	550
Financial assets designated at fair value through profit or loss	7	–	–	0	0	0
Total financial assets at fair value through profit or loss	510,665	–	263,180	119,732	1,254	384,166
Financial assets at fair value through OCI	45,503	45,503	0	1,622	1,267	2,889
Of which:						
Securities purchased under resale agreement	1,415	1,415	–	0	0	0
Securities borrowed	0	0	–	0	0	0
Loans	4,874	4,874	–	1,622	1,267	2,889
Total financial assets at fair value through OCI	45,503	45,503	–	1,622	1,267	2,889
Financial guarantees and other credit related contingent liabilities[7]	49,232	49,232	–	2,994	6,138	9,132
Revocable and irrevocable lending commitments and other credit related commitments[7]	211,440	209,986	–	15,217	4,984	20,202
Total off-balance sheet	260,672	259,218	–	18,211	11,122	29,333
Maximum exposure to credit risk	1,508,920	985,049	300,447	383,663	41,670	725,780

1 Does not include credit derivative notional sold (€ 356,362 million) and credit derivative notional bought protection.
2 Bought Credit protection is reflected with the notional of the underlying.
3 All amounts at gross value before deductions of allowance for credit losses.
4 All amounts at amortized cost (gross) except for qualifying hedge derivatives, which are reflected at Fair value through P&L.
5 Includes Asset Held for Sale regardless of accounting classification.
6 Excludes equities, other equity interests and commodities.
7 Figures are reflected at notional amounts.

The overall increase in maximum exposure to credit risk for December 31, 2020 was € 36.6 billion mainly driven by an increase of € 28.6 billion in cash and central bank balances, € 10.5 billion in positive market values from derivatives and € 10.3 billion in financial assets at fair value through other comprehensive income, mainly in debt securities. These increases were offset by reductions in central bank funds sold, securities purchased under resale agreements and securities borrowed across all applicable measurement categories by € 13.8 billion and loans at amortized cost by € 2.3 billion.

Included in the category of trading assets as of December 31, 2020, were traded bonds of € 83.5 billion(€ 80.7 billion as of December 31, 2019) of which over 84 % were investment-grade (over 81 % as of December 31, 2019).

Credit Enhancements are split into three categories: netting, collateral and guarantees / credit derivatives. Haircuts, parameter setting for regular margin calls as well as expert judgments for collateral valuation are employed to prevent market developments from leading to a build-up of uncollateralized exposures. All categories are monitored and reviewed regularly. Overall credit enhancements received are diversified and of adequate quality being largely cash, highly rated government bonds and third-party guarantees mostly from well rated banks and insurance companies. These financial institutions are domiciled mainly in European countries and the United States. Furthermore we have collateral pools of highly liquid assets and mortgages (principally consisting of residential properties mainly in Germany) for the homogeneous retail portfolio.

Main credit exposure categories

The tables in this section show details about several of our main credit exposure categories, namely Loans, Revocable and Irrevocable Lending Commitments, Contingent Liabilities Over-The-Counter (“OTC”) Derivatives, Debt Securities and Repo and repo-style transactions:

- “Loans” are gross loans as reported on our balance sheet at amortized cost, loans at fair value through profit and loss and loans at fair value through other comprehensive income before deduction of allowance for credit losses. This includes “Traded loans” that are bought and held for the purpose of selling them in the near term, or the material risks of which have all been hedged or sold. From a regulatory perspective the latter category principally covers trading book positions.
- “Revocable and irrevocable lending commitments” consist of the undrawn portion of revocable and irrevocable lending-related commitments.
- “Contingent liabilities” consist of financial and performance guarantees, standby letters of credit and other similar arrangements (mainly indemnity agreements).
- “OTC derivatives” are our credit exposures from over-the-counter derivative transactions that we have entered into, after netting and cash collateral received. On our balance sheet, these are included in financial assets at fair value through profit or loss or, for derivatives qualifying for hedge accounting, in other assets, in either case only applying cash collateral received and netting eligible under IFRS.
- “Debt securities” include debentures, bonds, deposits, notes or commercial paper, which are issued for a fixed term and redeemable by the issuer, as reported on our balance sheet within accounting categories at amortized cost and at fair value through other comprehensive income before deduction of allowance for credit losses, it also includes category at fair value through profit and loss. This includes “Traded bonds”, which are bonds, deposits, notes or commercial paper that are bought and held for the purpose of selling them in the near term. From a regulatory perspective the latter category principally covers trading book positions.
- “Repo and repo-style transactions” consist of reverse repurchase transactions, as well as securities or commodities borrowing transactions, only applying collateral received and netting eligible under IFRS.

Although considered in the monitoring of maximum credit exposures, the following are not included in the details of our main credit exposure: brokerage and securities related receivables, cash and central bank balances, interbank balances (without central banks), assets held for sale, accrued interest receivables, traditional securitization positions. Consequently, the gross exposure of OTC derivatives (prior to netting and cash collateral) as of December 31, 2020 of € 1.4 billion (€ 1.8 billion as of December 31, 2019) which is part of the “asset held for sale” classification is not included in our main credit exposure. This exposure is associated with the Prime Finance platform being transferred to BNP Paribas. For further information please refer to Note 24 “Non-Current Assets and Disposal Groups Held for Sale” to the consolidated financial statement.

Main Credit Exposure Categories by Business Divisions

							Dec 31, 2020
	Loans				Off-balance sheet		OTC derivatives
in € m.	at amortized cost[1]	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI[2]	Revocable and irrevocable lending commitments[3]	Contingent liabilities	at fair value through P&L[4]
Corporate Bank	114,491	621	784	4,393	130,690	44,293	299
Investment Bank	69,309	6,366	1,618	220	45,053	1,889	22,533
Private Bank	237,194	0	7	0	37,315	1,625	440
Asset Management	20	0	0	0	121	9	0
Capital Release Unit	2,807	1,352	220	22	1,592	38	9,388
Corporate & Other	7,682	0	0	0	1,106	123	268
Total	431,503	8,339	2,629	4,635	215,877	47,978	32,928

…

							Dec 31, 2020
	Debt Securities			Repo and repo-style transactions[7]			Total
in € m.	at amortized cost[5]	at fair value through P&L	at fair value through OCI[6]	at amortized cost	at fair value through P&L	at fair value through OCI	
Corporate Bank	733	68	0	345	0	0	296,717
Investment Bank	2,078	86,579	980	7,356	59,974	0	303,956
Private Bank	521	2	1	10	0	0	277,115
Asset Management	0	2,850	198	0	0	0	3,198
Capital Release Unit	0	1,404	0	1	3,091	0	19,915
Corporate & Other	9,294	4,443	48,476	824	0	1,543	73,760
Total	12,625	95,347	49,656	8,535	63,066	1,543	974,661

[1] Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 11.9 billion as of December 31, 2020.
[2] Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 90.3 million as of December 31, 2020
[3] Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 2.6 billion as of December 31, 2020.
[4] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[5] Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 360.4 million as of December 31, 2020.
[6] Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 15.1 million as of December 31, 2020.
[7] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

in € m.	Loans: at amortized cost[1]	Loans: trading - at fair value through P&L	Loans: Designated / mandatory at fair value through P&L	Loans: at fair value through OCI[2]	Off-balance sheet: Revocable and irrevocable lending commitments[3]	Off-balance sheet: Contingent liabilities	OTC derivatives: at fair value through P&L[4]
							Dec 31, 2019
Corporate Bank	118,311	427	480	4,549	120,073	44,917	216
Investment Bank	75,145	10,091	1,597	174	51,701	2,005	13,506
Private Bank	229,746	(0)	7	0	35,550	1,996	262
Asset Management	57	0	0	0	121	10	2
Capital Release Unit	3,555	1,827	1,096	150	2,901	51	13,904
Corporate & Other	7,020	0	0	0	1,094	253	148
Total	433,834	12,346	3,181	4,874	211,440	49,232	28,039

…

in € m.	Debt Securities: at amortized cost[5]	Debt Securities: at fair value through P&L	Debt Securities: at fair value through OCI[6]	Repo and repo-style transactions[7]: at amortized cost	Repo and repo-style transactions[7]: at fair value through P&L	Repo and repo-style transactions[7]: at fair value through OCI	Total
							Dec 31, 2019
Corporate Bank	859	14	0	583	0	0	290,429
Investment Bank	2,242	83,039	543	7,842	68,199	0	316,085
Private Bank	4,019	18	2,951	4,082	0	0	278,632
Asset Management	0	556	0	0	0	0	746
Capital Release Unit	61	1,440	9	521	3,085	0	28,601
Corporate & Other	17,119	4,767	35,712	1,201	0	1,415	68,728
Total	24,300	89,835	39,214	14,228	71,284	1,415	983,222

[1] Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 9.6 billion as of December 31, 2019.
[2] Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 22 million as of December 31, 2019
[3] Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 1.4 billion as of December 31, 2019.
[4] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[5] Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 96 million as of December 31, 2019.
[6] Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 1.4 million as of December 31, 2019.
[7] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

Our total credit exposure decreased by € 8.6 billion year-on-year.

— In terms of business divisions total main credit exposure decreased by € 12.1 billion in the Investment Bank, € 8.7 billion in the Capital Release Unit, € 1.5 billion in the Private Bank, partially offset by an increase in the Corporate Bank by € 6.3 billion, € 5.0 billion in Corporate & Other and € 2.5 billion in Asset Management. The business division Corporate & Other primarily contains exposures in treasury.
— From a product perspective credit exposure decreases have been observed for repo and repo-style transactions and loans while OTC derivatives, debt securities and off balance sheet position increased.

Main Credit Exposure Categories by Industry Sectors

The below tables give an overview of our credit exposure by industry based on the NACE code of the counterparty. NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) is a standard European industry classification system and does not have to be congruent with an internal risk based view applied elsewhere in this report.

							Dec 31, 2020
				Loans		Off-balance sheet	OTC derivatives
in € m.	at amortized cost[1]	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI[2]	Revocable and irrevocable lending commitments[3]	Contingent liabilities	at fair value through P&L[4]
Agriculture, forestry and fishing	637	0	0	0	544	40	3
Mining and quarrying	2,871	250	8	15	5,148	1,370	34
Manufacturing	26,050	525	354	1,111	52,722	10,314	4,677
Electricity, gas, steam and air conditioning supply	3,419	295	51	0	5,080	1,783	614
Water supply, sewerage, waste management and remediation activities	681	0	0	0	396	156	80
Construction	4,440	243	2	22	2,672	2,490	438
Wholesale and retail trade, repair of motor vehicles and motorcycles	20,697	330	83	913	15,672	5,025	614
Transport and storage	5,575	427	69	312	5,235	978	715
Accommodation and food service activities	2,427	60	0	27	1,203	158	27
Information and communication	5,525	308	3	404	14,030	2,072	887
Financial and insurance activities	84,724	2,860	1,823	813	56,024	19,467	18,042
Real estate activities	36,571	989	46	339	5,776	312	1,401
Professional, scientific and technical activities	7,707	228	0	12	4,919	1,915	147
Administrative and support service activities	9,112	333	66	56	4,266	453	672
Public administration and defense, compulsory social security	6,139	828	13	433	2,983	93	3,094
Education	205	0	0	0	126	14	459
Human health services and social work activities	3,436	68	26	0	2,373	127	484
Arts, entertainment and recreation	929	22	0	0	1,105	59	30
Other service activities	5,353	551	84	177	4,305	877	131
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	205,004	22	0	2	31,298	272	325
Activities of extraterritorial organizations and bodies	1	0	0	0	0	2	54
Total	431,503	8,339	2,629	4,635	215,877	47,978	32,928

							Dec 31, 2020
			Debt Securities			Repo and repo-style transactions[7]	Total
in € m.	at amortized cost[5]	at fair value through P&L	at fair value through OCI[6]	at amortized cost	at fair value through P&L	at fair value through OCI	
Agriculture, forestry and fishing	0	6	0	0	0	0	1,230
Mining and quarrying	0	354	2	0	0	0	10,053
Manufacturing	0	995	39	0	0	0	96,788
Electricity, gas, steam and air conditioning supply	0	437	1	0	0	0	11,679
Water supply, sewerage, waste management and remediation activities	0	40	0	0	0	0	1,354
Construction	0	565	70	0	0	0	10,944
Wholesale and retail trade, repair of motor vehicles and motorcycles	0	213	2	0	0	0	43,548
Transport and storage	203	811	26	0	0	0	14,351
Accommodation and food service activities	0	63	0	0	0	0	3,964
Information and communication	8	514	5	0	0	0	23,756
Financial and insurance activities	3,167	20,866	8,114	8,428	61,801	1,543	287,672
Real estate activities	333	3,047	109	0	0	0	48,924
Professional, scientific and technical activities	25	105	25	8	0	0	15,091
Administrative and support service activities	36	270	3	99	0	0	15,367
Public administration and defense, compulsory social security	8,670	61,459	40,574	0	1,089	0	125,374
Education	0	120	21	0	0	0	945
Human health services and social work activities	0	473	0	0	0	0	6,987
Arts, entertainment and recreation	31	83	0	0	0	0	2,258
Other service activities	110	3,654	162	0	176	0	15,580
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	0	0	0	0	0	0	236,923
Activities of extraterritorial organizations and bodies	40	1,272	503	0	0	0	1,873
Total	12,625	95,347	49,656	8,535	63,066	1,543	974,661

[1] Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 11.9 billion as of December 31, 2020.
[2] Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 90.3 million as of December 31, 2020
[3] Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 2.6 billion as of December 31, 2020.
[4] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[5] Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 360.4 million as of December 31, 2020.
[6] Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 15.1 million as of December 31, 2020.
[7] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

							Dec 31, 2019
				Loans		Off-balance sheet	OTC derivatives
in € m.	at amortized cost[1]	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI[2]	Revocable and irrevocable lending commitments[3]	Contingent liabilities	at fair value through P&L[4]
Agriculture, forestry and fishing	676	0	0	0	874	39	1
Mining and quarrying	2,537	274	135	80	4,606	1,223	22
Manufacturing	28,412	418	84	1,285	51,627	12,180	1,169
Electricity, gas, steam and air conditioning supply	4,115	401	60	0	5,774	1,630	589
Water supply, sewerage, waste management and remediation activities	833	10	0	0	486	136	68
Construction	3,810	259	27	14	2,876	2,174	364
Wholesale and retail trade, repair of motor vehicles and motorcycles	20,990	624	97	858	12,669	5,087	306
Transport and storage	4,872	534	54	150	5,066	996	1,213
Accommodation and food service activities	2,565	40	0	29	1,935	191	49
Information and communication	5,783	434	1	358	14,460	2,640	919
Financial and insurance activities	90,962	4,015	2,521	936	57,295	19,036	17,286
Real estate activities	41,670	3,236	49	198	5,600	306	1,516
Professional, scientific and technical activities	7,307	91	0	32	4,429	1,890	48
Administrative and support service activities	6,833	102	106	22	4,070	373	502
Public administration and defense, compulsory social security	6,437	1,071	15	489	2,650	109	2,586
Education	327	0	0	0	95	18	397
Human health services and social work activities	3,503	63	2	63	2,476	124	352
Arts, entertainment and recreation	843	24	0	0	1,309	44	23
Other service activities	4,677	707	24	358	3,428	733	130
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	196,680	45	5	2	29,713	301	324
Activities of extraterritorial organizations and bodies	3	0	0	0	3	4	176
Total	433,834	12,346	3,181	4,874	211,440	49,232	28,039

							Dec 31, 2019
			Debt Securities			Repo and repo-style transactions[7]	Total
in € m.	at amortized cost[5]	at fair value through P&L	at fair value through OCI[6]	at amortized cost	at fair value through P&L	at fair value through OCI	
Agriculture, forestry and fishing	0	4	0	0	0	0	1,593
Mining and quarrying	115	369	7	0	0	0	9,369
Manufacturing	371	1,029	51	0	0	0	96,626
Electricity, gas, steam and air conditioning supply	420	668	1	0	0	0	13,659
Water supply, sewerage, waste management and remediation activities	5	27	0	0	0	0	1,565
Construction	26	263	68	0	0	0	9,880
Wholesale and retail trade, repair of motor vehicles and motorcycles	68	226	15	0	0	0	40,938
Transport and storage	194	431	47	0	0	0	13,557
Accommodation and food service activities	21	33	0	0	0	0	4,863
Information and communication	126	478	36	0	9	0	25,244
Financial and insurance activities	7,915	18,296	11,118	14,228	70,224	1,415	315,247
Real estate activities	387	2,327	81	0	0	0	55,371
Professional, scientific and technical activities	10	194	10	0	0	0	14,009
Administrative and support service activities	59	133	3	0	0	0	12,203
Public administration and defense, compulsory social security	12,492	59,381	24,814	0	948	0	110,992
Education	0	194	0	0	0	0	1,032
Human health services and social work activities	0	461	0	0	0	0	7,044
Arts, entertainment and recreation	55	125	0	0	0	0	2,423
Other service activities	143	3,421	246	0	5	0	13,871
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	0	0	0	0	0	0	227,071
Activities of extraterritorial organizations and bodies	1,893	1,772	2,718	0	96	0	6,665
Total	24,300	89,835	39,214	14,228	71,284	1,415	983,222

[1] Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 9.6 billion as of December 31, 2019.
[2] Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 22 million as of December 31, 2019
[3] Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 1.4 billion as of December 31, 2019.
[4] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[5] Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 96 million as of December 31, 2019.
[6] Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 1.4 million as of December 31, 2019.
[7] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

The portfolio is subject to the same credit underwriting requirements stipulated in our “Principles for Managing Credit Risk”, including various controls according to single name, country, industry and product/asset class-specific concentration.

Material transactions, such as loans underwritten with the intention to sell down or distribute part of the risk to third parties, are subject to review and approval by senior credit risk management professionals and (depending upon size) an underwriting committee and/or the Management Board. High emphasis is placed on structuring and pricing such transactions so that de-risking can be achieved in a timely manner and – where DB takes market price risk – to mitigate such market risk.

Our amortized cost loan exposure within above categories is mostly to good quality borrowers. Moreover, with the focus on the Corporate Bank and Investment Bank, loan exposure is subject to further risk mitigation through our Strategic Corporate Lending unit (“SCL”).

Our household loans exposure is principally associated with our Private Bank portfolios.

Our amortized cost loan exposure of € 36.5 billion to Real Estate activities above is based on NACE code classification. We also provide an understanding of our Commercial Real Estate exposures across the Commercial Real Estate Group, APAC

CRE exposures in the Investment Bank and non-recourse CRE business in the Corporate Bank. Please refer to the chapter "Focus Industries in light of COVID-19 Pandemic" for further information on Commercial Real Estate exposures.

Our commercial real estate loans, primarily originated in the U.S. and Europe, are generally secured by first mortgages on the underlying real estate property. Deutsche Bank originates fixed and floating rate loans and selectively acquires (generally at substantial discount) sub- /non-performing loans sold by financial institutions. The underwriting process is stringent and the exposure is managed under separate portfolio limits. Credit underwriting policy guidelines provide that LTV ratios of generally less than 75 % are maintained. Additionally, given the significance of the underlying collateral, independent external appraisals are commissioned for all secured loans by a valuation team (part of the independent Credit Risk Management function) which is also responsible for reviewing and challenging the reported real estate values regularly. Deutsche Bank originates loans for distribution in the banking market or via securitization. In this context Deutsche Bank frequently retains a portion of the syndicated loans while securitized positions may be entirely sold (except where regulation requires retention of economic risk). Mezzanine or other junior tranches of debt are retained only in exceptional cases. The bank also participates in conservatively underwritten unsecured lines of credit to well-capitalized real estate investment trusts and other real estate operating companies.

Commercial real estate property valuations and rental incomes can be significantly impacted by macro-economic conditions and idiosyncratic events affecting the underlying properties. Accordingly, the portfolio is categorized as higher risk and hence subject to the aforementioned tight restrictions on concentration.

Our credit exposure to our ten largest counterparties accounted for 9 % of our aggregated total credit exposure in these categories as of December 31, 2020 compared with 8 % as of December 31, 2019. Our top ten counterparty exposures were with well-rated counterparties or otherwise related to structured trades which show high levels of risk mitigation.

Overall credit exposure to the industry sector Financial and Insurance Activities comprises of predominantly investment-grade exposures. The total Loans across all applicable measurement categories amounts to € 90.2 billion, Total Repo and repo style transaction across all applicable measurement categories amounts to € 71.8 billion and off balance sheet activities amounts to € 75.5 billion as of December 31, 2020 within Financial and Insurance activities and is principally associated with Investment Bank and Corporate Bank Portfolios, the same are majorly held in North America and Europe region.

Main credit exposure categories by geographical region

							Dec 31, 2020
				Loans		Off-balance sheet	OTC derivatives
in € m.	at amortized cost[1]	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI[2]	Revocable and irrevocable lending commitments[3]	Contingent liabilities	at fair value through P&L[4]
Europe	317,281	3,092	1,519	1,615	128,440	29,529	20,283
Of which:							
Germany	224,274	340	57	347	75,531	12,195	1,715
United Kingdom	5,796	160	341	64	9,820	2,327	7,102
France	3,460	65	33	187	6,103	1,383	1,331
Luxembourg	10,097	546	252	0	4,839	1,251	701
Italy	23,442	340	66	0	3,600	3,888	1,854
Netherlands	9,679	79	222	554	9,890	1,727	1,942
Spain	17,134	304	0	28	3,755	2,763	1,094
Ireland	4,173	190	200	127	2,023	200	465
Switzerland	6,817	39	19	150	4,518	1,762	268
Poland	2,421	0	1	0	374	128	17
Belgium	1,133	4	0	53	1,566	679	295
Other Europe	8,856	1,025	327	103	6,420	1,226	3,497
North America	73,742	3,266	841	1,896	78,079	7,430	9,420
Of which:							
U.S.	61,137	2,926	784	1,792	73,215	7,033	8,496
Cayman Islands	3,790	113	3	0	2,131	25	246
Canada	887	37	0	91	1,790	47	303
Other North America	7,928	191	54	13	943	326	374
Asia/Pacific	34,194	1,248	237	992	7,813	9,960	2,766
Of which:							
Japan	1,385	17	0	89	415	483	312
Australia	1,525	258	36	35	1,785	367	542
India	6,355	54	21	32	1,110	2,253	149
China	4,764	6	149	46	684	1,780	658
Singapore	5,309	210	30	28	918	685	248
Hong Kong	2,872	109	0	61	986	671	186
Other Asia/Pacific	11,984	593	0	702	1,914	3,721	670
Other geographical areas	6,285	734	31	133	1,545	1,059	460
Total	431,503	8,339	2,629	4,635	215,877	47,978	32,928

							Dec 31, 2020
			Debt Securities			Repo and repo-style transactions[7]	Total
in € m.	at amortized cost[5]	at fair value through P&L	at fair value through OCI[6]	at amortized cost	at fair value through P&L	at fair value through OCI	
Europe	2,468	46,446	31,868	2,180	21,696	498	606,915
Of which:							
Germany	544	8,257	10,467	263	1,078	10	335,078
United Kingdom	890	7,980	2,776	0	11,352	0	48,607
France	2	8,136	5,216	0	5,981	0	31,898
Luxembourg	41	2,509	1,412	0	819	0	22,466
Italy	117	5,908	1,496	108	478	0	41,297
Netherlands	112	3,486	118	0	33	0	27,843
Spain	0	3,053	3,088	1,077	500	0	32,796
Ireland	680	1,415	136	0	396	0	10,004
Switzerland	4	637	4	0	79	0	14,299
Poland	0	112	1,993	0	0	0	5,047
Belgium	40	1,575	1,616	0	5	0	6,966
Other Europe	38	3,380	3,546	731	975	488	30,612
North America	7,727	27,547	11,798	2,780	31,907	0	256,433
Of which:							
U.S.	7,351	26,408	11,197	1,814	29,370	0	231,523
Cayman Islands	359	567	0	885	2,086	0	10,206
Canada	0	417	543	0	451	0	4,567
Other North America	16	155	58	81	0	0	10,137
Asia/Pacific	2,431	19,246	5,740	3,353	9,426	646	98,052
Of which:							
Japan	64	2,807	25	0	6,283	0	11,881
Australia	1,545	2,535	860	0	659	0	10,149
India	349	3,284	2,047	0	128	396	16,177
China	0	3,012	309	0	421	0	11,830
Singapore	78	2,067	472	0	105	0	10,152
Hong Kong	207	725	286	60	12	0	6,175
Other Asia/Pacific	188	4,816	1,740	3,293	1,817	250	31,689
Other geographical areas	0	2,107	250	223	37	399	13,262
Total	12,625	95,347	49,656	8,535	63,066	1,543	974,661

[1] Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 11.9 billion as of December 31, 2020.
[2] Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 90.3 million as of December 31, 2020
[3] Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 2.6 billion as of December 31, 2020.
[4] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[5] Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 360.4 million as of December 31, 2020.
[6] Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 15.1 million as of December 31, 2020.
[7] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

							Dec 31, 2019
	Loans				Off-balance sheet		OTC derivatives
in € m.	at amortized cost[1]	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI[2]	Revocable and irrevocable lending commitments[3]	Contingent liabilities	at fair value through P&L[4]
Europe	307,871	4,469	2,435	1,778	114,586	29,836	18,964
Of which:							
Germany	214,155	316	5	245	65,468	12,078	1,572
United Kingdom	7,927	607	373	230	7,960	2,587	6,337
France	3,106	70	0	209	5,905	1,322	1,264
Luxembourg	8,320	1,193	1,084	46	4,374	652	859
Italy	22,347	298	109	0	3,127	3,721	1,389
Netherlands	9,679	83	162	457	9,015	1,805	2,123
Spain	17,265	257	54	59	2,262	3,246	916
Ireland	4,783	157	280	124	2,241	172	545
Switzerland	6,818	30	85	262	5,880	2,213	194
Poland	2,771	0	5	0	316	130	60
Belgium	1,347	0	0	67	1,773	421	285
Other Europe	9,352	1,458	279	78	6,267	1,489	3,420
North America	79,522	4,543	483	2,155	88,260	8,332	6,628
Of which:							
U.S.	66,991	3,891	389	2,016	83,894	7,842	4,943
Cayman Islands	3,560	318	30	0	764	20	481
Canada	1,155	23	0	116	2,230	81	1,007
Other North America	7,816	310	64	22	1,371	389	197
Asia/Pacific	39,584	1,780	248	820	6,962	9,652	1,946
Of which:							
Japan	1,752	16	0	112	599	333	405
Australia	1,577	320	63	0	1,587	104	357
India	7,717	126	149	0	646	2,392	128
China	4,816	38	0	45	725	1,503	308
Singapore	5,722	185	37	30	761	833	210
Hong Kong	4,315	380	0	18	1,182	628	146
Other Asia/Pacific	13,685	714	0	614	1,461	3,860	392
Other geographical areas	6,857	1,554	14	122	1,632	1,412	501
Total	433,834	12,346	3,181	4,874	211,440	49,232	28,039

							Dec 31, 2019
			Debt Securities			Repo and repo-style transactions[7]	Total
in € m.	at amortized cost[5]	at fair value through P&L	at fair value through OCI[6]	at amortized cost	at fair value through P&L	at fair value through OCI	
Europe	11,267	37,936	24,791	7,884	15,046	390	577,251
Of which:							
Germany	3,986	5,353	6,864	4,488	661	28	315,219
United Kingdom	2,647	9,712	2,273	604	6,522	0	47,778
France	705	4,714	6,302	319	2,748	0	26,664
Luxembourg	969	3,094	3,099	121	861	0	24,673
Italy	288	5,388	916	144	679	0	38,406
Netherlands	726	2,051	584	297	100	0	27,082
Spain	139	2,010	513	1,082	501	0	28,303
Ireland	636	1,321	19	0	1,140	0	11,418
Switzerland	51	679	101	0	69	0	16,382
Poland	0	30	1,988	0	0	0	5,301
Belgium	204	854	577	0	0	0	5,528
Other Europe	917	2,730	1,554	829	1,765	362	30,499
North America	9,985	31,654	8,325	3,140	42,038	0	285,065
Of which:							
U.S.	9,574	30,600	7,718	1,750	19,661	0	239,267
Cayman Islands	393	509	9	1,293	22,132	0	29,510
Canada	0	277	599	0	240	0	5,730
Other North America	18	268	0	97	5	0	10,558
Asia/Pacific	3,048	18,130	5,471	3,114	13,980	659	105,394
Of which:							
Japan	69	2,582	9	173	9,451	0	15,500
Australia	1,906	3,867	653	155	331	94	11,014
India	656	1,862	1,998	0	202	306	16,182
China	0	1,345	0	0	983	0	9,763
Singapore	11	1,305	874	0	290	0	10,260
Hong Kong	224	517	287	0	1	0	7,699
Other Asia/Pacific	182	6,653	1,649	2,786	2,721	258	34,977
Other geographical areas	0	2,115	627	90	220	367	15,512
Total	24,300	89,835	39,214	14,228	71,284	1,415	983,222

[1] Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 9.6 billion as of December 31, 2019.
[2] Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 22 million as of December 31, 2019
[3] Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 1.4 billion as of December 31, 2019.
[4] Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.
[5] Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 96 million as of December 31, 2019.
[6] Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 1.4 million as of December 31, 2019.
[7] Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

The tables above give an overview of our credit exposure by geographical region, allocated based on the counterparty's country of domicile, see also section "Credit Exposure to Certain Eurozone Countries" of this report for a detailed discussion of the "country of domicile view". Aforementioned domicile view does not have to be congruent with an internal risk based view applied elsewhere in this report

Our largest concentration of credit risk within loans from a regional perspective is in our home market Germany, with a significant share in households, which includes the majority of our mortgage lending and home loan business.

Within OTC derivatives, tradable assets as well as repo and repo-style transactions, our largest concentrations from a regional perspective were in Europe and North America.

Credit exposure to certain Eurozone countries

Certain Eurozone countries are presented within the table below due to previous focus relating to sovereign risk.

In our "country of domicile view" we aggregate credit risk exposures to counterparties by allocating them to the domicile of the primary counterparty, irrespective of any link to other counterparties, or in relation to credit default swaps underlying reference assets from these Eurozone countries. Hence we also include counterparties whose group parent is located outside of these countries and exposures to special purpose entities whose underlying assets are from entities domiciled in other countries.

The following table, which is based on the country of domicile view, presents our gross position, the included amount thereof of undrawn / contingent exposure and our net exposure to these Eurozone countries. The gross exposure reflects our net credit risk exposure grossed up for net credit derivative protection purchased with underlying reference assets domiciled in one of these countries, guarantees received and collateral. Such collateral is particularly held with respect to the retail portfolio, but also for financial institutions predominantly based on derivative margining arrangements, as well as for corporates. In addition, the amounts also reflect the allowance for credit losses. In some cases, our counterparties' ability to draw on undrawn commitments is limited by terms included in the specific contractual documentation. Net credit exposures are presented after effects of collateral held, guarantees received and further risk mitigation, including net notional amounts of credit derivatives for protection sold/bought. The provided gross and net exposures to certain European countries do not include credit derivative tranches which, by design, are structured to be credit risk neutral. Additionally, the tranche and correlated nature of these positions does not allow a meaningful disaggregated notional presentation by country, e.g., as identical notional exposures represent different levels of risk for different tranche levels.

Gross position, included undrawn exposure and net exposure to certain Eurozone countries – Country of Domicile View

	Sovereign		Financial Institutions		Corporates		Retail		Other		Total	
in € m.	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020[1]	Dec 31, 2019
Greece												
Gross	1,055	437	2,023	1,342	337	464	4	4	11	0	3,429	2,248
Undrawn / contingent	0	0	61	42	2	7	2	1	0	0	64	51
Net	1,055	437	360	323	8	14	2	2	11	0	1,437	776
Ireland												
Gross	197	302	194	1,280	6,089	7,256	21	26	3,610	3,501	10,111	12,364
Undrawn / contingent	0	0	45	16	1,807	2,439	2	2	613	531	2,467	2,988
Net	217	270	135	649	3,787	4,156	5	6	3,501	3,397	7,646	8,478
Italy												
Gross	5,726	6,260	4,501	3,805	14,514	13,331	17,639	18,451	262	95	42,641	41,941
Undrawn / contingent	0	0	62	38	5,935	5,384	1,739	1,733	0	0	7,737	7,154
Net	4,133	5,341	403	487	8,666	8,209	10,379	10,715	261	95	23,841	24,848
Portugal												
Gross	212	228	83	84	689	860	12	11	93	208	1,088	1,390
Undrawn / contingent	0	0	20	26	303	342	2	2	0	0	325	370
Net	186	281	90	85	628	638	4	4	93	208	1,001	1,217
Spain												
Gross	4,448	1,226	1,921	1,513	14,250	12,942	10,039	9,948	249	258	30,907	25,888
Undrawn / contingent	1	0	91	112	5,831	4,611	732	523	0	3	6,655	5,249
Net	4,332	1,191	726	467	10,038	8,514	2,529	2,536	287	310	17,912	13,019
Total gross	**11,637**	8,452	**8,722**	8,023	**35,879**	34,853	**27,715**	28,440	**4,224**	4,063	**88,177**	83,832
Total Undrawn / contingent	**1**	1	**280**	233	**13,877**	12,783	**2,476**	2,260	**614**	534	**17,248**	15,811
Total net[3]	**9,922**	7,521	**1,714**	2,011	**23,126**	21,532	**12,920**	13,264	**4,153**	4,010	**51,836**	48,338

[1] Approximately 74 % of the overall exposure as per December 31, 2020 will mature within the next 5 years.
[2] Other exposures to Ireland include exposures to counterparties where the domicile of the group parent is located outside of Ireland as well as exposures to special purpose entities whose underlying assets are from entities domiciled in other countries.
[3] Total net exposure excludes credit valuation reserves for derivatives amounting to € 45.2 million as of December 31, 2020 and € 49.8 million as of December 31, 2019.

Net exposure to the above selected Eurozone countries increased by € 3.5 billion in 2020 driven by increased exposure in Spain and Greece that is partly offset by a decrease in Italy and Ireland.

Sovereign credit risk exposure to certain Eurozone countries

The amounts below reflect a net "country of domicile view" of our sovereign exposure.

Sovereign credit risk exposure to certain Eurozone countries

in € m.	Dec 31, 2020 Direct Sovereign exposure[1]	Net Notional of CDS referencing sovereign debt	Net sovereign exposure	Memo Item: Net fair value of CDS referencing sovereign debt[2]	Dec 31, 2019 Direct Sovereign exposure[1]	Net Notional of CDS referencing sovereign debt	Net sovereign exposure	Memo Item: Net fair value of CDS referencing sovereign debt[2]
Greece	1,055	0	1,055	0	437	0	437	0
Ireland	189	28	217	0	265	4	270	2
Italy	5,501	(1,369)	4,133	718	6,170	(828)	5,341	334
Portugal	212	(26)	186	0	228	54	281	6
Spain	4,447	(115)	4,332	163	1,222	(31)	1,191	112
Total	**11,404**	**(1,481)**	**9,922**	**881**	8,322	(801)	7,521	454

[1] Includes sovereign debt classified as financial assets/liabilities at fair value through profit or loss and loans carried at amortized cost. Direct Sovereign exposure is net of guarantees received and collateral.
[2] The amounts reflect the net fair value in relation to credit default swaps referencing sovereign debt of the respective country representing the counterparty credit risk.

The increase of € 2.4 billion in net sovereign exposure compared with year-end 2019 mainly reflects increases in debt securities in Spain within Central Investment Office and Investment Bank portfolios.

Credit exposure classification

We also classify our credit exposure along our business divisions, which is in line with the divisionally aligned chief risk officer mandates. In the section below, we show the credit exposure of the Corporate Bank and the Investment Bank together. In the subsequent section, we provide the credit exposure for the Private Bank.

Corporate Bank and Investment Bank credit exposure

The tables below show our main Corporate Bank and Investment Bank Credit Exposure by product types and internal rating bands. Please refer to section "Measuring Credit Risk" for more details about our internal ratings.

Main Corporate Bank and Investment Bank credit exposure categories according to our internal creditworthiness categories of our counterparties – gross

in € m. (unless stated otherwise)		Dec 31, 2020						
					Loans	Off-balance sheet		OTC derivatives
Ratingband	Probability of default in %[1]	at amortized cost	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI	Revocable and irrevocable lending commitments	Contingent liabilities	at fair value through P&L[2]
iAAA–iAA	> 0.00 ≤ 0.04	13,679	44	446	114	20,168	1,911	4,230
iA	> 0.04 ≤ 0.11	29,365	436	347	641	47,835	11,794	6,414
iBBB	> 0.11 ≤ 0.5	55,845	1,047	672	2,149	57,941	22,069	4,395
iBB	> 0.5 ≤ 2.27	48,063	2,470	500	1,458	26,476	5,566	3,202
iB	> 2.27 ≤ 10.22	26,885	1,813	76	160	18,789	2,864	4,477
iCCC and below	> 10.22 ≤ 100	9,962	1,177	361	92	4,535	1,978	113
Total		183,800	6,987	2,401	4,614	175,743	46,182	22,832

in € m. (unless stated otherwise)		Dec 31, 2020						
				Debt Securities			Repo and repo-style transactions	
Ratingband	Probability of default in %[1]	at amortized cost	at fair value through P&L	at fair value through OCI	at amortized cost	at fair value through P&L	at fair value through OCI	Total
iAAA–iAA	> 0.00 ≤ 0.04	1,183	50,886	103	298	27,745	–	120,806
iA	> 0.04 ≤ 0.11	527	7,762	82	827	8,504	–	114,533
iBBB	> 0.11 ≤ 0.5	307	12,569	87	1,425	8,346	–	166,851
iBB	> 0.5 ≤ 2.27	174	13,062	400	2,239	15,004	–	118,616
iB	> 2.27 ≤ 10.22	239	1,607	293	2,311	375	–	59,889
iCCC and below	> 10.22 ≤ 100	382	762	15	600	0	–	19,978
Total		2,811	86,647	980	7,700	59,974	–	600,672

[1] Reflects the probability of default for a one year time horizon.
[2] Includes the effect of netting agreements and cash collateral received where applicable.

Main Corporate Bank and Investment Bank credit exposure categories according to our internal creditworthiness categories of our counterparties – net

in € m. (unless stated otherwise)								Dec 31, 2020[1]
		Loans				Off-balance sheet		OTC derivatives
Ratingband	Probability of default in %[2]	at amortized cost	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI	Revocable and irrevocable lending commitments	Contingent liabilities	at fair value through P&L
iAAA–iAA	> 0.00 ≤ 0.04	8,684	44	446	0	19,088	1,618	3,381
iA	> 0.04 ≤ 0.11	22,618	131	347	621	46,384	9,837	4,957
iBBB	> 0.11 ≤ 0.5	31,266	889	625	1,602	54,626	19,365	4,190
iBB	> 0.5 ≤ 2.27	22,984	1,887	407	955	23,947	3,995	3,100
iB	> 2.27 ≤ 10.22	8,853	824	6	140	17,614	2,244	4,432
iCCC and below	> 10.22 ≤ 100	4,823	759	207	92	4,263	1,269	113
Total		99,228	4,534	2,038	3,410	165,922	38,330	20,175

in € m. (unless stated otherwise)								Dec 31, 2020[1]
		Debt Securities			Repo and repo-style transactions			
Ratingband	Probability of default in %[2]	at amortized cost	at fair value through P&L	at fair value through OCI	at amortized cost	at fair value through P&L	at fair value through OCI	Total
iAAA–iAA	> 0.00 ≤ 0.04	1,183	50,886	103	0	27	–	85,460
iA	> 0.04 ≤ 0.11	527	7,762	82	0	1	–	93,268
iBBB	> 0.11 ≤ 0.5	307	12,569	87	23	3	–	125,551
iBB	> 0.5 ≤ 2.27	171	13,017	400	71	3	–	70,939
iB	> 2.27 ≤ 10.22	239	1,607	293	0	0	–	36,253
iCCC and below	> 10.22 ≤ 100	311	727	15	0	0	–	12,579
Total		2,737	86,567	980	95	34	–	424,049

1 Net of eligible collateral, guarantees and hedges based on IFRS requirements.
2 Reflects the probability of default for a one year time horizon.

The tables below show our main Corporate Bank and Investment Bank Credit Exposure for 2019 by product types and internal rating bands.

Main Corporate Bank and Investment Bank credit exposure categories according to our internal creditworthiness categories of our counterparties – gross

in € m. (unless stated otherwise)								Dec 31, 2019
		Loans				Off-balance sheet		OTC derivatives
Ratingband	Probability of default in %[1]	at amortized cost	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI	Revocable and irrevocable lending commitments	Contingent liabilities	at fair value through P&L[2]
iAAA–iAA	> 0.00 ≤ 0.04	18,508	184	20	237	23,850	3,364	3,234
iA	> 0.04 ≤ 0.11	31,859	868	599	754	45,040	11,706	4,144
iBBB	> 0.11 ≤ 0.5	58,139	1,380	234	2,447	55,361	22,441	3,199
iBB	> 0.5 ≤ 2.27	47,505	4,595	643	1,002	26,160	4,642	2,261
iB	> 2.27 ≤ 10.22	25,967	2,525	275	283	17,913	3,207	844
iCCC and below	> 10.22 ≤ 100	11,477	967	305	2	3,450	1,563	40
Total		193,456	10,519	2,077	4,724	171,774	46,922	13,722

in € m. (unless stated otherwise)								Dec 31, 2019
		Debt Securities			Repo and repo-style transactions			
Ratingband	Probability of default in %[1]	at amortized cost	at fair value through P&L	at fair value through OCI	at amortized cost	at fair value through P&L	at fair value through OCI	Total
iAAA–iAA	> 0.00 ≤ 0.04	1,422	48,992	0	847	30,382	–	131,040
iA	> 0.04 ≤ 0.11	392	5,864	8	1,522	8,745	–	111,501
iBBB	> 0.11 ≤ 0.5	366	11,414	76	408	7,320	–	162,785
iBB	> 0.5 ≤ 2.27	373	14,525	233	3,265	20,498	–	125,701
iB	> 2.27 ≤ 10.22	449	1,700	225	1,344	1,101	–	55,833
iCCC and below	> 10.22 ≤ 100	99	558	0	1,039	153	–	19,654
Total		3,102	83,053	543	8,425	68,199	–	606,514

1 Reflects the probability of default for a one year time horizon.
2 Includes the effect of netting agreements and cash collateral received where applicable.

Main Corporate Bank and Investment Bank credit exposure categories according to our internal creditworthiness categories of our counterparties – net

in € m. (unless stated otherwise)								Dec 31, 2019[1]
		Loans				Off-balance sheet		OTC derivatives
Ratingband	Probability of default in %[2]	at amortized cost	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI	Revocable and irrevocable lending commitments	Contingent liabilities	at fair value through P&L
iAAA–iAA	> 0.00 ≤ 0.04	12,575	184	20	237	22,566	2,535	2,840
iA	> 0.04 ≤ 0.11	25,249	318	190	754	43,953	9,814	3,098
iBBB	> 0.11 ≤ 0.5	33,115	751	234	1,489	52,334	19,470	3,005
iBB	> 0.5 ≤ 2.27	21,734	2,305	408	600	23,497	4,071	2,089
iB	> 2.27 ≤ 10.22	6,610	287	52	175	16,348	2,104	821
iCCC and below	> 10.22 ≤ 100	4,053	543	204	2	3,066	1,115	40
Total		103,336	4,388	1,109	3,257	161,764	39,108	11,893

in € m. (unless stated otherwise)								Dec 31, 2019[1]
		Debt Securities			Repo and repo-style transactions			
Ratingband	Probability of default in %[2]	at amortized cost	at fair value through P&L	at fair value through OCI	at amortized cost	at fair value through P&L	at fair value through OCI	Total
iAAA–iAA	> 0.00 ≤ 0.04	1,422	48,992	0	2	1,169	–	92,540
iA	> 0.04 ≤ 0.11	392	5,864	8	0	13	–	89,653
iBBB	> 0.11 ≤ 0.5	366	11,414	76	6	100	–	122,362
iBB	> 0.5 ≤ 2.27	220	14,152	225	90	12	–	69,402
iB	> 2.27 ≤ 10.22	443	1,672	229	0	0	–	28,742
iCCC and below	> 10.22 ≤ 100	96	523	0	439	0	–	10,081
Total		2,939	82,618	538	537	1,293	–	412,781

[1] Net of eligible collateral, guarantees and hedges based on IFRS requirements.
[2] Reflects the probability of default for a one year time horizon.

The above table shows an overall decrease in our Corporate Bank and Investment Bank gross exposure in 2020 of € 5.8

billion or 1 %. Loans at amortized cost decreased by € 9.7 billion mainly due to prepayments across businesses as well as by the strengthening of the Euro in comparison to the U.S. Dollar. From a regional perspective the decrease is primarily attributable to counterparties domiciled in the United States and United Kingdom. This decrease is partly offset by an increase in trading debt securities of € 3.6 billion mainly due to increased trading activities on the back of volatile market conditions in the wake of the COVID-19 pandemic.

We use risk mitigation techniques as described above to optimize our Corporate Bank and Investment Bank credit exposures and reduce potential credit losses. The tables for "net" exposure discloses the development of our Corporate Bank and Investment Bank credit exposure's net of collateral, guarantees and hedges.

SCL Risk Mitigation for Credit Exposure

Our Strategic Corporate Lending ("SCL") unit helps mitigate the risk of our corporate credit exposures. The notional amount of SCL's risk reduction activities increased from € 31.3 billion as of December 31, 2019, to € 34.0 billion as of December 31, 2020.

As of year-end 2020, SCL mitigated the credit risk of € 30.9 billion of loans and lending-related commitments through synthetic collateralized loan obligations supported predominantly by financial guarantees. This position totaled € 30.3 billion as of December 31, 2019.

SCL also held credit derivatives with an underlying notional amount of € 3.1 billion as of December 31, 2020. The position totaled € 1.0 billion as of December 31, 2019. The credit derivatives used for our portfolio management activities are accounted for at fair value.

Private Bank credit exposure

Private Bank credit exposure, credit exposure stage 3 and net credit costs

	Total exposure in € m.		of which loan book in € m.		Credit exposure stage 3 in € m.		Net credit costs as a % of total exposure[1]	
	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019	Dec 31, 2020	Dec 31, 2019
PB Germany	185,959	190,038	160,683	153,954	2,798	2,289	0.17%	0.08%
Consumer Finance	29,352	31,130	15,240	15,913	1,277	914	0.77%	0.53%
Mortgage	153,165	144,455	143,368	135,164	1,481	1,343	0.06%	(0.01%)
Business Finance	1,246	1,576	870	926	6	17	0.15%	0.08%
Financial Markets	0	12,984	0	2,121	0	14	N/M	(0.02%)
Other	2,196	(107)	1,206	(170)	35	2	0.05%	(0.19%)
International Private Bank	91,156	88,594[2]	76,511	75,800[2]	3,484	2,624[2]	0.43%	0.20%[2]
Consumer Finance	11,162	11,693	8,937	9,020	350	243	1.50%	0.67%
Mortgage	13,611	14,413	13,520	14,334	668	682	(0.08%)	(0.17%)
Business Finance	12,151	9,821	9,914	9,059	728	660	1.16%	1.24%
Wealth Management	53,928	51,934	44,072	43,333	1,739	1,038	0.17%	0.02%
Other	303	734	68	54	0	1	1.41%	(0.03%)
Total	**277,115**	278,632	**237,194**	229,754	**6,282**	4,913	**0.26%**	0.12%

[1] Net credit costs for the twelve months period ended at the respective balance sheet date divided by the total exposure at that balance sheet date.
[2] PCB international and Wealth management were reported separately in 2019.

Consumer finance is divided into personal instalment loans, credit lines and credit cards. Consumer finance business is uncollateralized, loan risk depends on client quality. Various lending requirements are stipulated, including (but not limited to) client rating, maximum loan amounts and maximum tenors, and are adapted to regional conditions and/or circumstances of the borrower (i.e., for consumer loans a maximum loan amount taking into account customer net income). Given the largely homogeneous nature of this portfolio, counterparty credit-worthiness and ratings are predominately derived by utilizing an automated decision engine.

Mortgage business is the financing of residential properties (primarily owner-occupied) sold by various business channels in Europe, primarily in Germany but also in Spain and Italy. The level of credit risk of the mortgage loan portfolio is determined by assessing the quality of the client and the underlying collateral. The loan amounts are generally larger than consumer finance loans and they are extended for longer time horizons. Based on our underwriting criteria and processes and the diversified portfolio (customers/properties) with respective collateralization, the mortgage portfolio is categorized as lower risk, while consumer finance is categorized as high risk.

Business finance represents credit products for small businesses, SME up to large corporates. Products range from current accounts and credit lines to investment loans or revolving facilities, factoring, leasing and derivatives. Smaller clients below a turnover of € 2.5 million are limited to current accounts and loans. Clients are located primarily in Italy and Spain, but credit can also be extended to subsidiaries abroad, mostly in Europe.

The reported financials for year-end 2019 in Financial Markets belong to a portfolio of DB PFK AG, that was transferred to Group Treasury in 2020 in the context of the merger of DB PFK AG on DB AG and is therefore no longer part of Private Bank.

Wealth Management offers customized wealth management solutions and private banking services including discretionary portfolio management and traditional and alternative investment solutions, complemented by structured risk management, wealth planning, lending and family office services for wealth, high-net-worth (HNW) and ultra-high-net-worth (UHNW) individuals and family offices. Wealth Management's total exposure is divided into Lombard Lending (against readily marketable liquid collateral / securities) and Structured Lending (against less liquid collateral). While the level of credit risk for the Lombard portfolio is determined by assessing the quality of the underlying collateral, the level of credit risk for the structured portfolio is determined by assessing both the quality of the client and the collateral. Products range from secured Lombard and mortgage loans to current accounts (Europe only), credit lines and other loans; to a lesser extent derivatives and contingencies. Clients are located globally.

PB mortgage loan-to-value[1]

	Dec 31, 2020	Dec 31, 2019
≤ 50 %	65 %	67 %
> 50 ≤ 70 %	16 %	16 %
> 70 ≤ 90 %	10 %	9 %
> 90 ≤ 100 %	3 %	3 %
> 100 ≤ 110 %	2 %	2 %
> 110 ≤ 130 %	2 %	2 %
> 130 %	1 %	1 %

[1] When assigning the exposure to the corresponding LTV buckets, the exposure amounts are distributed according to their relative share of the underlying assessed real estate value.

The LTV expresses the amount of exposure as a percentage of the underlying real estate value.

Our LTV ratios are calculated using the total exposure divided by the current determined value of the respective properties. These values are monitored and updated if necessary on a regular basis. The exposure of transactions that are additionally backed by liquid collateral is reduced by the respective collateral values, whereas any prior charges increase the corresponding total exposure. The LTV calculation includes exposure which is secured by real estate collateral. Any mortgage lending exposure that is collateralized exclusively by any other type of collateral is not included in the LTV calculation.

The creditor's creditworthiness, the LTV and the quality of collateral is an integral part of our risk management when originating loans and when monitoring and steering our credit risks. In general, we are willing to accept higher LTV's, the better the creditor's creditworthiness is. Nevertheless, restrictions of LTV apply e.g. for countries with negative economic outlook or expected declines of real estate values.

As of December 31, 2020, 65 % of our exposure related to the mortgage lending portfolio had a LTV ratio below or equal to 50 %, compared to 67 % in the prior year.

Credit Exposure from Derivatives

All exchange traded derivatives are cleared through central counterparties ("CCPs"), the rules and regulations of which provide for daily margining of all current and future credit risk positions emerging out of such transactions. To the extent possible, we also use CCP services for OTC derivative transactions ("OTC clearing"); we thereby benefit from the credit risk mitigation achieved through the CCP's settlement system.

The Dodd-Frank Act provides for an extensive framework for the regulation of OTC derivatives, including mandatory clearing, platform trading and transaction reporting of certain OTC derivatives, as well as rules regarding the registration of, and capital, margin and business conduct standards for, swap dealers, security-based swap dealers, major swap participants and major security-based swap participants. The Dodd-Frank Act and related CFTC rules require mandatory OTC clearing in the United States for certain standardized OTC derivative transactions, including certain interest rate swaps and index credit default swaps. Margin requirements for non-cleared derivative transactions in the US started in September 2016. The European Regulation (EU) No 648/2012 on OTC Derivatives, Central Counterparties and Trade Repositories ("EMIR") introduced a number of risk mitigation techniques for non-centrally cleared OTC derivatives in 2013 and the reporting of OTC and exchange traded derivatives in 2014. Mandatory clearing for certain standardized OTC derivatives transactions in the EU began in June 2016, and margin requirements for un-cleared OTC derivative transactions in the EU started in February 2017. Deutsche Bank implemented the exchange of both initial and variation margin in the EU from February 2017 for the first category of counterparties subject to the EMIR margin for un-cleared derivatives requirements.

The CFTC adopted final rules in 2016 that require additional interest rate swaps to be cleared, with a phased implementation schedule ending in October 2018. Deutsche Bank implemented the CFTC's expanded clearing requirements for the relevant interest rate swaps subject to the passed compliance, covering identified instruments denominated in AUD, CAD, CHF, HKD, MXN, NOK, PLN, SEK and SGD. In September, 2020, the CFTC issued a final rule on the cross-border application of certain U.S. swap rules, which builds on and, in some cases supersedes the CFTC's cross-border guidance from 2013 and related no-action relief letters. In January 2021, also pursuant to the Dodd-Frank Act, the CFTC finalized regulations to impose position limits on certain commodities and economically equivalent swaps, futures and options.

The SEC has also finalized rules regarding registration, reporting, capital, risk mitigation techniques, business conduct standards and trade acknowledgement and verification requirements for security-based swap dealers and major security-based swap participants. Compliance with most of these requirements will be required starting in October 2021, when entities will be required to register as security-based swap dealers and major security-based swap participants. The SEC adopted in December 2019 supplemental guidance and rule amendments addressing the cross-border application of certain rules

regulating security-based swaps which also establishes a firm timeline for security-based swap (SBS) dealer registration. The compliance date for Deutsche Bank to register with the SEC as a security-based swap dealer will be October 6, 2021.

Finally, U.S. prudential regulators (the Federal Reserve, the FDIC, the Office of the Comptroller of the Currency, the Farm Credit Administration and the Federal Housing Finance Agency) have adopted final rules establishing margin requirements for non-cleared swaps and security-based swaps between prudentially regulated swap dealers and certain counterparties, and the CFTC has adopted final rules establishing margin requirements for non-cleared swaps between non-prudentially regulated swap dealers and certain counterparties. Deutsche Bank implemented the exchange of both initial and variation margin for un-cleared derivatives in the U.S. from September 2016, for the first category of counterparties subject to the U.S. prudential regulators' margin requirements. Additional initial margin requirements for smaller counterparties have been phased in from September 2017 through September 2022, with the relevant compliance dates depending in each case on the transactional volume of the parties and their affiliates. The U.S. prudential regulators delayed the initial margin compliance date from September 2020 until September 2021 or September 2022 for swaps with certain counterparties with lower levels of transactional volume as a result of the impact of COVID-19. The SEC has also established margin requirements for non-cleared security-based swaps and compliance will be required starting in October 2021 for security based swaps dealers required to register with the SEC.

The following table shows a breakdown of notional amounts and gross market values for assets and liabilities of exchange traded and OTC derivative transactions on the basis of clearing channel.

Notional amounts of derivatives on basis of clearing channel and type of derivative

							Dec 31, 2020
	Notional amount maturity distribution						
in € m.	Within 1 year	> 1 and ≤ 5 years	After 5 years	Total	Positive market value	Negative market value	Net market value
Interest rate related:							
OTC	11,299,988	8,076,426	5,241,008	24,617,422	230,512	215,795	14,717
Bilateral (Amt)	1,476,276	1,977,542	1,598,819	5,052,637	220,704	206,192	14,512
CCP (Amt)	9,823,712	6,098,884	3,642,189	19,564,785	9,808	9,602	206
Exchange-traded	605,924	215,611	66	821,601	347	154	193
Total Interest rate related	11,905,912	8,292,037	5,241,074	25,439,023	230,859	215,948	14,911
Currency related:							
OTC	4,351,809	791,671	401,111	5,544,590	91,241	87,177	4,063
Bilateral (Amt)	4,255,560	788,132	401,012	5,444,704	90,297	85,830	4,466
CCP (Amt)	96,249	3,539	98	99,886	944	1,347	(403)
Exchange-traded	43,601	8	0	43,608	5	24	(19)
Total Currency related	4,395,409	791,679	401,111	5,588,199	91,246	87,202	4,044
Equity/index related:							
OTC	28,938	32,164	7,186	68,288	5,700	5,692	8
Bilateral (Amt)	28,938	32,164	7,186	68,288	5,700	5,692	8
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	126,825	36,818	1,634	165,277	3,772	4,902	(1,130)
Total Equity/index related	155,763	68,982	8,821	233,565	9,473	10,594	(1,122)
Credit derivatives related							
OTC	61,552	689,031	86,593	837,176	13,557	13,272	285
Bilateral (Amt)	23,672	124,373	32,647	180,692	3,043	2,628	415
CCP (Amt)	37,880	564,658	53,947	656,484	10,515	10,645	(130)
Exchange-traded	0	0	0	0	0	0	0
Total Credit derivatives related	61,552	689,031	86,593	837,176	13,557	13,272	285
Commodity related:							
OTC	3,716	2,857	1,341	7,913	142	993	(851)
Bilateral (Amt)	3,716	2,857	1,341	7,913	138	661	(522)
CCP (Amt)	0	0	0	0	4	332	(328)
Exchange-traded	15,446	744	0	16,190	409	55	353
Total Commodity related	19,162	3,600	1,341	24,103	551	1,048	(497)
Other:							
OTC	376,256	3,438	154	379,848	1,043	936	108
Bilateral (Amt)	376,256	3,438	154	379,848	1,043	936	108
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	9,411	0	0	9,411	29	53	(24)
Total Other	385,667	3,438	154	389,259	1,072	989	84
Total OTC business	16,122,259	9,595,586	5,737,393	31,455,237	342,196	323,866	18,331
Total bilateral business	6,164,418	2,928,505	2,041,159	11,134,082	320,925	301,939	18,986
Total CCP business	9,957,840	6,667,081	3,696,234	20,321,155	21,271	21,926	(656)
Total exchange-traded business	801,207	253,181	1,701	1,056,088	4,562	5,188	(626)
Total	16,923,465	9,848,767	5,739,094	32,511,325	346,758	329,054	17,704
Positive market values after netting and cash collateral received	–	–	–	–	35,161	–	–

Dec 31, 2019

in € m.	Notional amount maturity distribution Within 1 year	> 1 and ≤ 5 years	After 5 years	Total	Positive market value	Negative market value	Net market value
Interest rate related:							
OTC	11,116,114	8,622,042	5,377,422	25,115,579	244,738	226,854	17,884
Bilateral (Amt)	2,453,120	2,496,053	1,757,652	6,706,825	200,701	184,611	16,090
CCP (Amt)	8,662,994	6,125,989	3,619,770	18,408,754	44,037	42,243	1,794
Exchange-traded	4,050,938	1,142,410	372	5,193,720	631	590	42
Total Interest rate related	15,167,052	9,764,453	5,377,794	30,309,299	245,369	227,444	17,925
Currency related:							
OTC	4,345,697	913,352	431,769	5,690,818	70,947	67,033	3,914
Bilateral (Amt)	4,250,460	912,881	431,769	5,595,110	70,524	66,543	3,981
CCP (Amt)	95,237	471	0	95,708	423	490	(67)
Exchange-traded	17,169	0	0	17,169	3	22	(19)
Total Currency related	4,362,866	913,352	431,769	5,707,987	70,949	67,055	3,894
Equity/index related:							
OTC	98,330	56,328	7,985	162,642	6,478	8,607	(2,129)
Bilateral (Amt)	98,330	56,328	7,985	162,642	6,478	8,607	(2,129)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	183,700	37,390	5,884	226,974	1,883	2,252	(368)
Total Equity/index related	282,030	93,718	13,869	389,617	8,362	10,859	(2,497)
Credit derivatives related							
OTC	102,131	558,757	82,345	743,233	10,245	11,229	(984)
Bilateral (Amt)	38,651	157,306	35,102	231,058	2,062	2,667	(605)
CCP (Amt)	63,480	401,452	47,243	512,175	8,183	8,562	(379)
Exchange-traded	0	0	0	0	0	0	0
Total Credit derivatives related	102,131	558,757	82,345	743,233	10,245	11,229	(984)
Commodity related:							
OTC	2,743	5,640	1,194	9,577	20	501	(481)
Bilateral (Amt)	2,743	5,640	1,194	9,577	18	495	(477)
CCP (Amt)	0	0	0	0	2	6	(4)
Exchange-traded	18,502	570	7	19,080	30	36	(5)
Total Commodity related	21,246	6,210	1,201	28,657	51	537	(486)
Other:							
OTC	45,811	2,530	109	48,449	666	706	(40)
Bilateral (Amt)	45,811	2,530	109	48,449	666	706	(40)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	31,868	153	0	32,020	70	107	(37)
Total Other	77,678	2,682	109	80,470	736	813	(77)
Total OTC business	15,710,826	10,158,649	5,900,824	31,770,299	333,094	314,930	18,164
Total bilateral business	6,889,114	3,630,737	2,233,811	12,753,662	280,449	263,628	16,820
Total CCP business	8,821,711	6,527,912	3,667,013	19,016,636	52,645	51,302	1,343
Total exchange-traded business	4,302,177	1,180,523	6,263	5,488,963	2,617	3,006	(389)
Total	20,013,003	11,339,172	5,907,087	37,259,262	335,711	317,936	17,775
Positive market values after netting and cash collateral received	–	–	–	–	28,615	–	–

The gross exposure of OTC derivative prior to netting and cash collateral as of December 31, 2020 of € 1.4 billion (€ 1.8 billion as of December 31, 2019), which is part of the “asset held for sale” classification is not included in our disclosure for credit exposure from derivative. This exposure is associated with the Prime Finance platform being transferred to BNP Paribas. For further information please refer to Note 24 “Non-Current Assets and Disposal Groups Held for Sale” to the consolidated financial statement.

Equity Exposure

The table below presents the carrying values of our equity investments according to IFRS definition split by trading and nontrading for the respective reporting dates. We manage our respective positions within our market risk and other appropriate risk frameworks.

Composition of our Equity Exposure

in € m.	Dec 31, 2020	Dec 31, 2019
Trading Equities	11,769	18,640
Nontrading Equities[1]	2,375	2,660
Total Equity Exposure	14,145	21,300

[1] Includes equity investment funds amounting to € 291 million as of December 31, 2020 and € 586 million as of December 31, 2019.

As of December 31, 2020, our Trading Equities exposure was mainly composed of € 7.3 billion from Capital Release Unit activities and € 4.4 billion from Investment Bank. Overall trading equities decreased by € 6.9 billion year on year driven mainly by unwinding of trades in the Equities business.

Trading market risk exposures

Value-at-Risk Metrics of Trading Units of Deutsche Bank Group

Deutsche Bank received regulatory approval for the Value-at-Risk model to transition to Historical Simulation, effective 1st Oct 2020. The figures for 2019 are shown for comparative purposes.

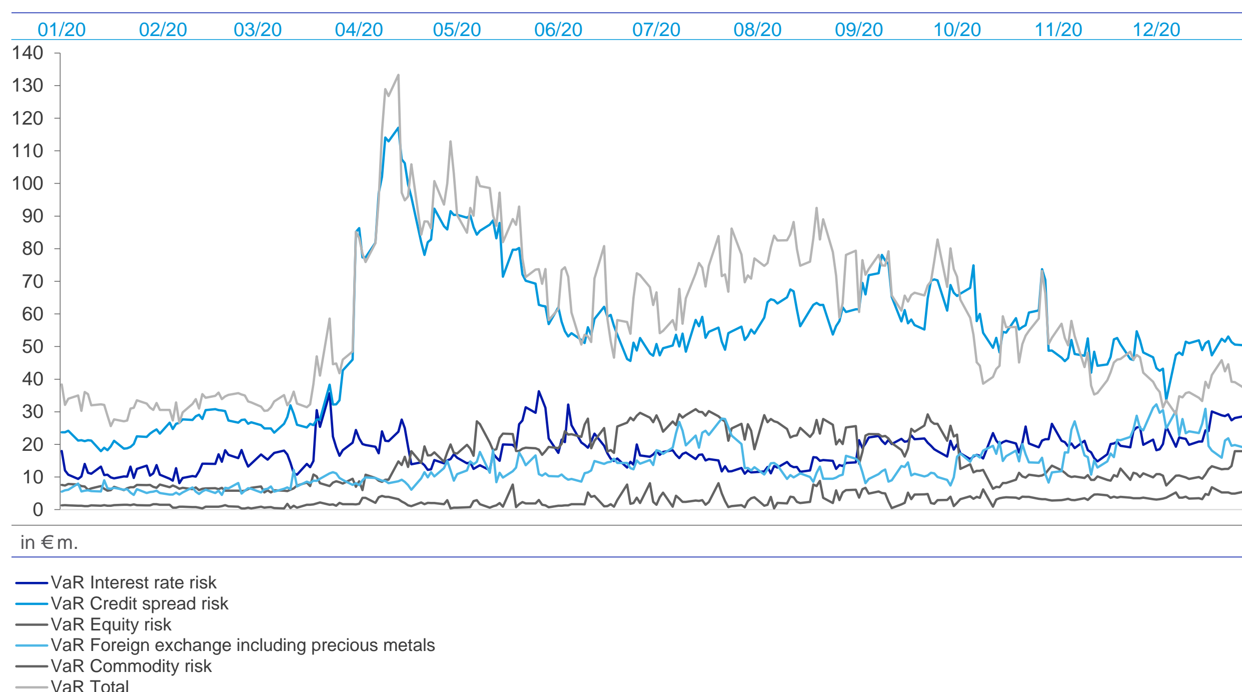
The tables and graph below present the Historic Simulation value-at-risk metrics calculated with a 99 % confidence level and a one-day holding period for our trading units.

Value-at-Risk of our Trading Units by Risk Type[1]

	Total		Diversification effect		Interest rate risk		Credit spread risk		Equity price risk		Foreign exchange risk[2]		Commodity price risk	
in € m.	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Average	58.9	36.6	(44.0)	(28.9)	17.9	14.5	53.6	28.2	15.5	13.6	13.3	8.2	2.7	1.0
Maximum	133.3	48.8	(10.2)	(16.8)	36.3	23.2	117.1	36.6	30.8	24.6	32.3	16.8	8.8	3.3
Minimum	25.6	27.6	(84.4)	(47.0)	8.1	8.8	17.9	19.7	5.3	6.3	4.5	3.7	0.4	0.0
Period-end	48.1	38.8	(72.2)	(17.6)	27.1	17.9	55.4	23.7	13.5	8.2	22.5	5.3	1.8	1.3

[1] Figures for 2020 as of December 31 2020. Figures for 2019 as of December 31 2019. 2019 VaR results are also shown under the new Historical Simulation model rather than the previously reported Monte Carlo model.
[2] Includes value-at-risk from gold and other precious metal positions.

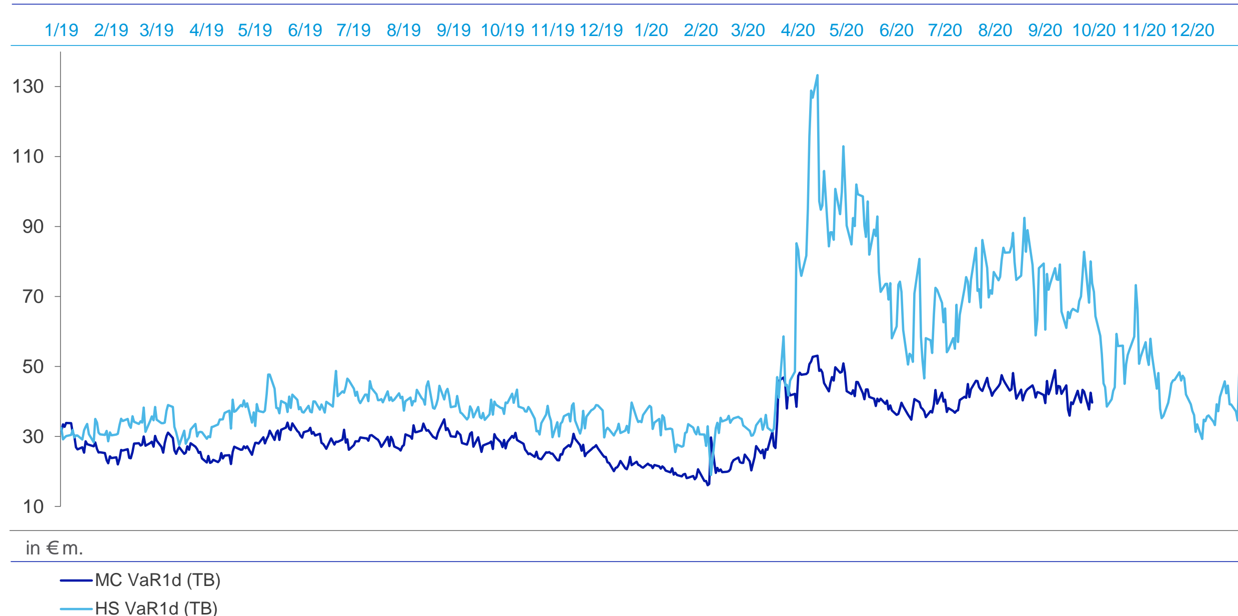
Development of historic simulation value-at-risk by risk types in 2020



The average value-at-risk over 2020 was € 58.9 million, which increased € 22.3 million (+61 %) compared to the average for 2019, driven by increases across risk classes from COVID-19 related market volatility impacts.

The below chart shows the value-at-risk trend under both Monte Carlo and Historical Simulations for comparative purposes. The increase in value-at-risk was more prominent under Historical Simulation which is more impacted by extreme tail events such as those experienced in March and April of 2020.

Trading Book 1-day value-at-risk in 2019 and 2020



For regulatory reporting purposes, the incremental risk charge for the respective reporting dates represents the higher of the spot value at the reporting dates, and their preceding 12-week average calculation.

Average, Maximum and Minimum Incremental Risk Charge of Trading Units (with a 99.9 % confidence level and one-year capital horizon)[1,2,3,]

	Total		Credit Trading		Core Rates		Emerging Markets		Other[4]	
in € m.	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Average	591.4	480.4	100.2	178.5	347.4	168.6	242.6	211.4	(98.7)	(78.2)
Maximum	688.8	609.0	147.4	213.6	631.6	193.4	324.9	260.4	(70.0)	(58.5)
Minimum	537.3	324.2	50.0	139.0	263.1	134.7	62.8	152.8	(147.6)	(102.4)
Period-end	560.4	389.4	124.8	139.0	283.6	134.7	250.4	174.3	(98.5)	(58.5)

[1] Amounts show the bands within which the values fluctuated during the 12-weeks preceding December 31, 2020 and December 31, 2019, respectively.
[2] Business line breakdowns have been updated for 2020 reporting to better reflect the current business structure.
[3] All liquidity horizons are set to 12 months.
[4] Other includes Capital Release Unit.

The incremental risk charge as at the end of 2020 was € 560 million, an increase of € 171 million (+44 %) compared with year end 2019. The average of the incremental risk charge as at the end of 2020 was € 591 million and thus € 111 million (+23 %) higher compared with the average for the period ended December 31, 2019. The increase in incremental risk charge for 2020 was driven by increases in sovereign exposures in the Core Rates and Emerging Markets business areas when compared to 2019.

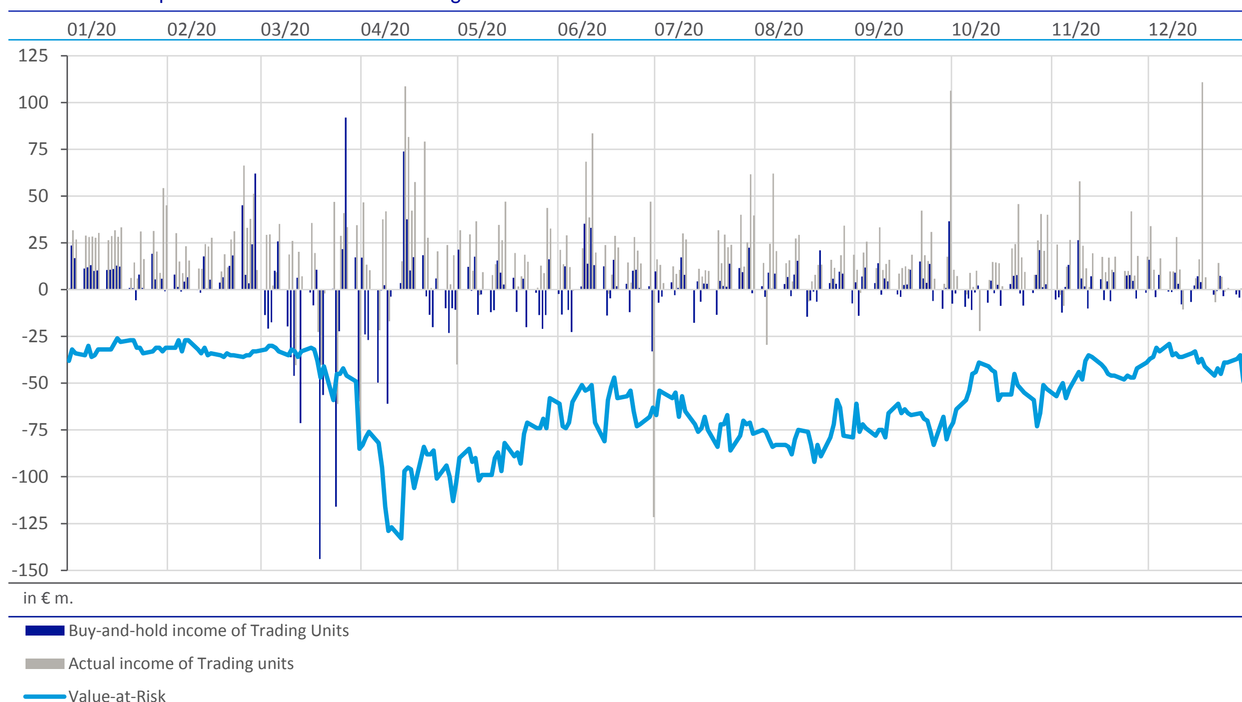
Results of Regulatory Backtesting of Trading Market Risk

In 2020 we observed seven global outliers under the Historical Simulation model, where our loss on a buy-and-hold basis exceeded the value-at-risk of our Trading Books, compared with two outliers in 2019. The outliers were driven by the significant market volatility experienced as a result of the COVID-19 pandemic. Also, there were five Actual Backtesting outliers during 2020, which compares the VaR to Total Income less Fees & Commissions. However, the regulatory exemption allowed the removal of the outliers observed during the period from March 10, 2020 to March 24, 2020 from the calculation of the Backtesting capital multiplier, as they did not result from deficiencies in the internal model but due to the extraordinary nature of COVID-19 related market volatility.

Based on the backtesting results, our analysis of the underlying reasons for outliers and enhancements included in our value-at-risk methodology we continue to believe that our value-at-risk model will remain an appropriate measure for our trading market risk under normal market conditions. The following graph shows the trading units daily buy-and-hold income in comparison to the value-at-risk as of the close of the previous business day for the trading days of the reporting period. The value-at-risk is presented in negative amounts to visually compare the estimated potential loss of our trading positions with the buy and hold income. Figures are shown in millions of euro. The chart shows that our trading units achieved a positive buy and hold income for 60 % of the trading days in 2020 (versus 44 % in 2019), as well as displaying the global outliers experienced in 2019.

The capital requirements for the value-at-risk model, for which the backtesting results are shown here, accounts for 3.7 % of the total capital requirement for the Group.

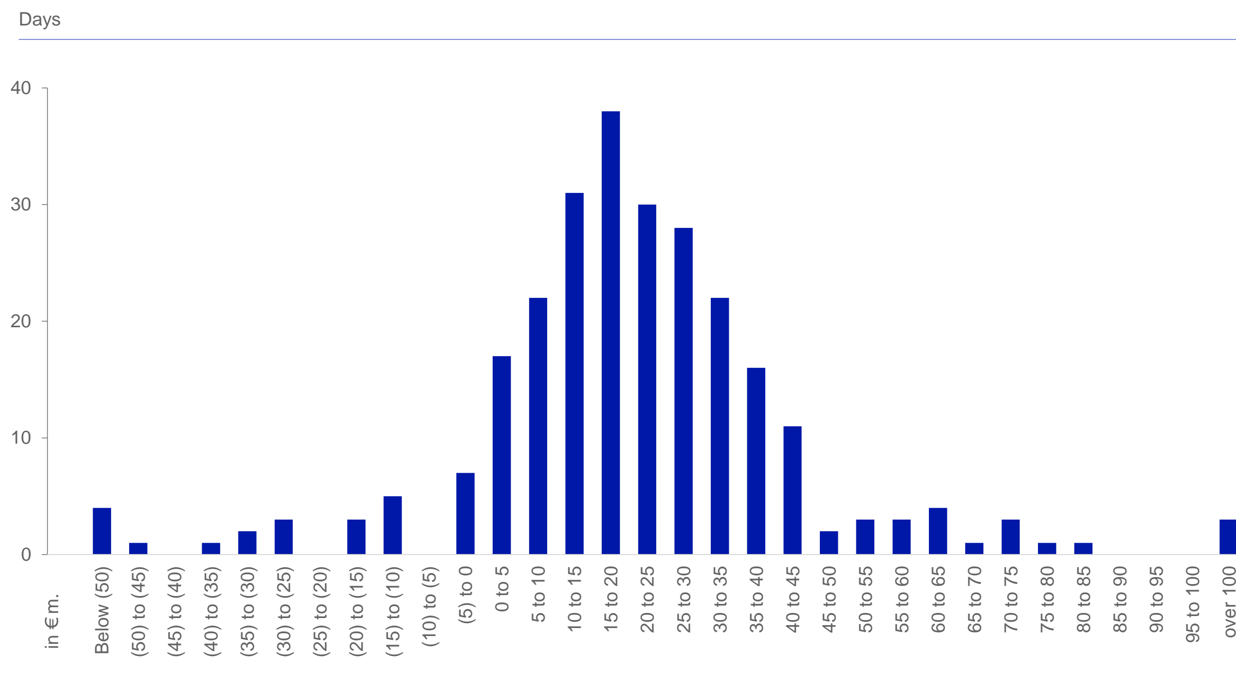
EU MR4 – Comparison of VAR estimates with gains/losses



Daily Income of our Trading Units

The following histogram shows the distribution of daily income of our trading units. Daily income is defined as total income which consists of new trades, fees & commissions, buy & hold income, reserves, carry and other income. It displays the number of trading days on which we reached each level of trading income shown on the horizontal axis in millions of euro.

Distribution of daily income of our trading units in 2020



Our trading units achieved a positive revenue for 90 % of the trading days in 2020 compared with 85 % in the full year 2019.

Nontrading market risk exposures

Economic Capital Usage for Nontrading Market Risk

The following table shows the Nontrading Market Risk economic capital usage by risk type:

Economic Capital Usage by risk type.

	Economic capital usage	
in € m.	Dec 31, 2020	Dec 31, 2019
Interest rate risk	4,062	3,409
Credit spread risk	92	56
Equity and Investment risk	1,885	1,566
Foreign exchange risk	1,682	1,782
Pension risk	934	1,259
Guaranteed funds risk	41	103
Total nontrading market risk portfolios	**8,696**	8,175

The economic capital figures do take into account diversification benefits between the different risk types.

Economic Capital Usage for Nontrading Market Risk totaled € 8.7 billion as of December 31, 2020, which is € 0.5 billion above our economic capital usage at year-end 2019.

– Interest rate risk. Economic capital charge for interest rate risk in the banking book, including gap risk, basis risk and option risk, such as the risk of a change in client behavior embedded in modelled non-maturity deposits or prepayment risk. In total the economic capital usage for December 31, 2020 was € 4,062 million, compared to € 3,409 million for December 31, 2019. The increase in economic capital contribution was mainly driven by increased level of interest rate risk exposure in our strategic liquidity reserve securities portfolio and from additional economic positions taken to further reduce Group's net interest income sensitivity to a change in interest rates.
– Credit spread risk. Economic capital charge for portfolios in the banking book subject to material credit spread risk. Economic capital usage was € 92 million as of December 31, 2020, versus € 56 million as of December 31, 2019. The increase in economic capital contribution was driven by lower diversification benefits with other risk types.
– Equity and Investment risk. Economic capital charge for equity risk from our non-consolidated investment holdings, such as our strategic investments and alternative assets, and from a structural short position in our own share price arising from

our equity compensation plans. The economic capital usage was € 1,885 million as of December 31, 2020, compared with € 1,566 million as of December 31, 2019, predominately driven by an increased market value of our equity compensation short position, partially offset by reduced investment risk.

- Foreign exchange risk. Foreign exchange risk predominantly arises from our structural position in unhedged capital and retained earnings in non-euro currencies in certain subsidiaries. Our economic capital usage was € 1,682 million as of December 31, 2020, versus € 1,782 million as of December 31, 2019.
- Pension risk. This risk arises from our defined benefit obligations, including interest rate risk and inflation risk, credit spread risk, equity risk and longevity risk. The economic capital usage was € 934 million and € 1,259 million as of December 31, 2020 and December 31, 2019 respectively. The economic capital usage declined mainly as a consequence of a reduction in credit spread risk exposure and increased diversification benefit with other risk types.
- Guaranteed funds risk. Economic capital usage was € 41 million as of December 31, 2020, versus € 103 million as of December 31, 2019. The decrease in economic capital contribution was largely driven by increased diversification benefit with other risk types.

Interest Rate Risk in the Banking Book

The following table shows the impact on the Group's net interest income in the banking book as well as the change of the economic value for the banking book positions from interest rate changes under the six standard scenarios defined by the European Banking Authority (EBA) for current reporting period and under the six standard scenarios defined by the Basel Committee on Banking Supervision (BCBS) for the prior year:

Economic value & net interest income interest rate risk in the banking book by EBA scenario (for current reporting period) and by BCBS scenario (for prior year)

	Delta EVE	Delta NII[1]
in € bn.	Dec 31, 2020	Dec 31, 2020
Parallel up	(5.2)	2.3
Parallel down	0.5	(1.1)
Steepener	(0.6)	(0.9)
Flattener	(0.6)	2.1
Short rate up	(1.7)	2.7
Short rate down	0.4	(1.1)
Maximum	**(5.2)**	**(1.1)**

in € bn.	Dec 31, 2020
Tier 1 Capital	**51.5**

[1] Delta Net Interest Income (NII) reflects the difference between projected NII in the respective scenario with shifted rates vs. market implied rates. Sensitivities are based on a static balance sheet at constant exchange rates, excluding trading positions and DWS. Figures do not include Mark to Market (MtM) / Other Comprehensive Income (OCI) effects on centrally managed positions not eligible for hedge accounting.

	Delta EVE	Delta NII[1]
in € bn.	Dec 31, 2019	Dec 31, 2019
Parallel up	(4.2)	3.0
Parallel down	0.5	(0.8)
Steepener	(1.2)	(0.5)
Flattener	(0.4)	2.7
Short rate up	(1.2)	3.6
Short rate down	0.4	(0.8)
Maximum	(4.2)	(0.8)

in € bn.	Dec 31, 2019
Tier 1 Capital	50.5[2]

[1] Delta Net Interest Income (NII) reflects the difference between projected NII in the respective scenario with shifted rates vs. market implied rates. Sensitivities are based on a static balance sheet at constant exchange rates, excluding trading positions and DWS. Figures do not include Mark to Market (MtM) / Other Comprehensive Income (OCI) effects on centrally managed positions not eligible for hedge accounting.
[2] Number has been restated due to rounding differences

A sudden parallel increase in the yield curve would positively impact the Group's earnings (net interest income) from the banking book positions. Deutsche Bank estimates that the total one-year net interest income change resulting from parallel yield curve shifts up and down (applying a maturity-dependent post-shock interest rate floor in line with guidance given by the EBA) would be € 2.3 billion and € (1.1) billion, respectively, at December 31, 2020.

The maximum Economic Value of Equity (EVE) loss was € (5.2) billion as of December 2020, compared to € (4.2) billion as of December 2019. As per December 2020 the maximum EVE loss represents 10.2 % of Tier 1 Capital.

The maximum Economic Value of Equity (EVE) loss due to a +200 basis points parallel shift of the yield curve across all currencies as defined by the BaFin was € (5.1) billion as of December 2020, representing 8.8 % of Total Capital.

The increase in maximum EVE loss was mainly driven by increased economic value interest rate risk exposure built-up to stabilize the Group's net interest income. Our NII risk has been reduced significantly in the reporting period due to the aforementioned measures. The reduction in the maximum loss scenario of approximately € 1.5 billion was however overcompensated by the application of a maturity-dependent post-shock interest rate floor with an impact of approximately € (1.8) billion. This resulted in larger interest rate shocks applied in downwards interest rate scenarios and as a consequence larger delta NII.

The following table shows the variation of the economic value for Deutsche Bank's banking book positions resulting from downward and upward interest rate shocks by currency:

Economic value interest rate risk in the banking book by currency

	Dec 31, 2020	
in € bn.	Parallel up	Parallel down
EUR	(4.0)	0.3
USD	(0.7)	0.2
Other	(0.6)	0.1
Total	(5.2)	0.5

Operational risk exposure

Operational risk – risk profile

Operational risk losses by event type (profit and loss view)

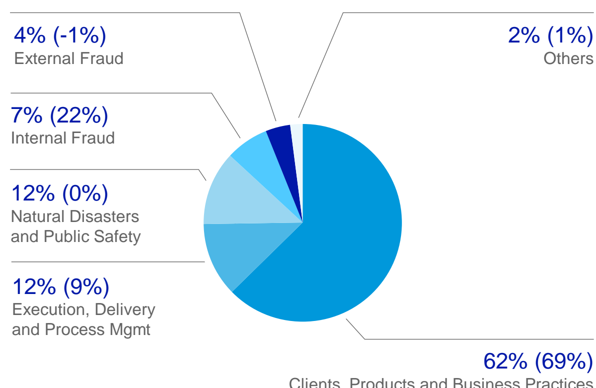
in € m.	2020	2019[1]
Clients, Products and Business Practices	247	313
Execution, Delivery and Process Management	49	57
Natural Disasters and Public Safety	47	3
Internal Fraud	28	27
External Fraud	16	21
Others	8	8
Group	396	429

[1] 2019 loss figures revised from prior year presentation due to subsequent capture of losses and reclassification.

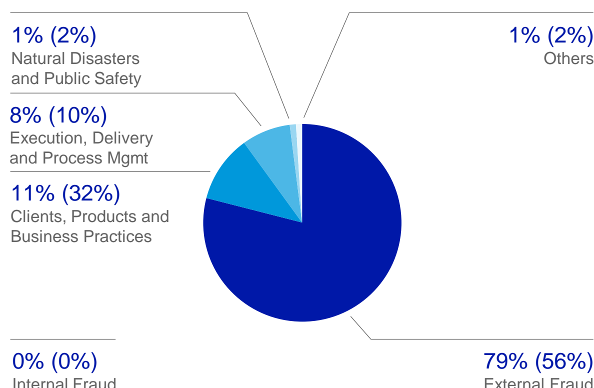
As of December 31, 2020, operational losses decreased by € 33 million or 8 % compared to year-end 2019, despite a large increase in losses relating to the event type "Natural Disasters and Public Safety" as a result of COVID-19 expenses. Excluding the effects of COVID-19, operational losses would have decreased by € 77 million or 18 % compared to 2019. The decrease was driven by the event types "Clients, Products and Business Practices" and "Execution, Delivery and Process Management", predominantly due to a reduction in legacy losses associated with civil litigation and regulatory enforcement.

Operational losses by event type occurred in the period 2020 (2015-2019)[1]

Distribution of Operational Losses (posting date)



Frequency of Operational Losses (first posting date)



[1] Percentages in brackets correspond to loss frequency respectively to loss amount for losses occurred in 2015-2019 period. Frequency and amounts can change subsequently.

The above left chart "Distribution of Operational Losses" summarizes the proportion of operational risk loss postings by event type using the P&L value in 2020 compared to the five-year period 2015-2019 in brackets. The event type "Clients, Products and Business Practices" dominates operational losses with a share of 62 % and is comprised mainly of outflows related to

litigation, investigations and enforcement actions. “Execution, Delivery and Process Management” (12 %) and “Natural Disasters and Public Safety (12 %) share the second highest proportion of losses; the latter was primarily driven by expenses relating to COVID-19. Losses from “Internal Fraud” were at 7 %, “External Fraud” at 4 % and “Others” at 2 %.

The above right chart “Frequency of Operational Losses” summarizes the proportion of operational risk events by event type based on a count of events where losses were first recognized in 2020, compared to the five-year period 2015-2019 in brackets. Frequencies are driven predominantly by the event type “External Fraud” which comprised 79 % of all observed loss events, followed by “Clients, Products and Business Practices” at 11 %. “Execution, Delivery and Process Management” contributed to 8 %, and other event types made up the remaining 2 %. Although the event type “Internal Fraud” contributed significantly to the distribution of losses, it has a negligible frequency, comprising less than 1 % of loss events in 2020.

While we seek to ensure the comprehensive capture of operational risk loss events with a P&L impact of € 10.000 or greater, the totals shown in this section may be underestimated due to delayed detection and recording of loss events.

Liquidity risk exposure

Funding markets and capital markets issuance

2020 was dominated by the COVID-19 pandemic. Unprecedented circumstances and general uncertainties about the global economy’s trajectory added volatility to credit markets. Credit spreads peaked in March 2020 and have declined since then with the support of monetary policy and fiscal stimulus and trade roughly flat at the end of 2020 compared to the beginning of the year.

DB’s spreads exhibit a similar behavior, but were able to outperform peers’ credit spreads year on year. Our 5-year Credit Default Swap (referencing preferred debt) contract peaked on March 18, 2020 at 141 bp and closed on December 31, 2020 at 57 bp, outperforming peers by 13 bp y-o-y. In the bond markets, our senior non-preferred 2.625 % EUR benchmark maturing in February 2026 closed at 107 bp over Euro Mid Swaps at the end of 2020, 43 bp tighter than one year before and outperforming peers by 40 bp.

Our revised 2020 issuance plan of € 10-15 billion, comprising debt issuance with an original maturity in excess of one year, was completed and we concluded 2020 having raised € 18.5 billion in term funding, already prefunding part of our 2021 issuance plan. This funding was broadly spread across the following funding sources: AT1 issuance (€ 1.0 billion), Tier 2 issuance (€ 1.7 billion) senior non-preferred plain-vanilla issuance (€ 11.6 billion), senior preferred plain-vanilla issuance (€ 1.0 billion), covered bond issuance (€ 0.5 billion), and other senior preferred structured issuance (€ 2.7 billion). The (€ 18.5 billion) total is divided into Euro (€ 8.8 billion), US dollar (€ 8.3 billion), British Pound (€ 0.7 billion) and other currencies aggregated (€ 0.7 billion). In addition to direct issuance, we use long-term cross currency swaps to manage our non-Euro funding needs. Our investor base for 2020 issuances comprised asset managers and pension funds (58 %), banks (12 %), retail customers (10 %), insurance companies (4 %) and other institutional investors (13 %). The geographical distribution was split between Germany (15 %), rest of Europe (45 %), US (23 %), Asia/Pacific (9 %) and Other (8 %).

The average spread of our issuance over 3-months-Euribor/Libor was 210 basis points for the full year. The average tenor was 6.9 years. Our issuance activities were slightly higher in the second half of the year. We issued the following volumes over each quarter: Q1: € 5.6 billion, Q2: € 3.3 billion, Q3: € 4.9 billion and Q4: € 4.7 billion, respectively.

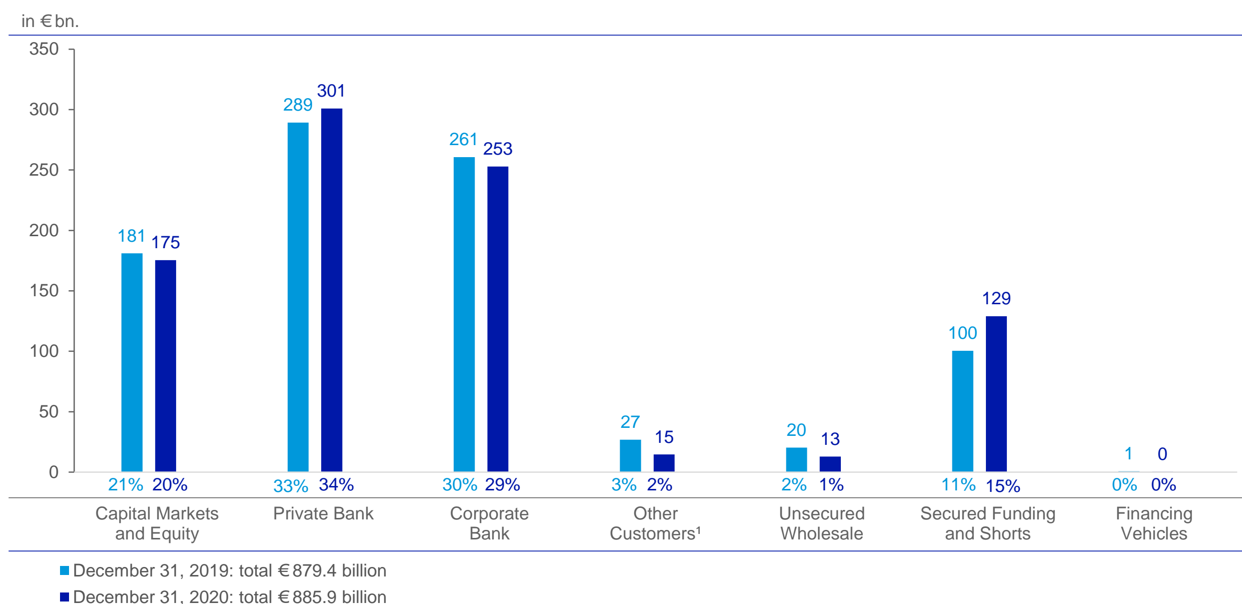
In 2021, our issuance plan is € 15-20 billion and comprises capital instruments, senior non-preferred, senior preferred and covered bonds. We also plan to raise a portion of this funding in U.S. dollar and may enter into cross currency swaps to manage any residual requirements. We have total capital markets maturities, excluding legally exercisable calls, of approximately € 22 billion in 2021.

Funding Diversification

In 2020, total external funding increased by € 6.4 billion from € 879.4 billion at December 31, 2019 to € 885.9 billion at December 31, 2020. The increase was driven by inflows in DB’s most stable deposits in particular the Private Bank, where deposits increased by € 11.6 billion primarily due to lower consumer spending related to COVID-19. In addition, secured funding and shorts increased by € 28.2 billion as DB participated in ECB’s TLTRO III programme. Due to targeted up-pricing measures in the Corporate Bank, deposits decreased by € 7.9 billion. Furthermore, the reliance on unsecured wholesale funding was further reduced by € 7.2 billion. The € 5.7 billion decrease of Capital Markets and Equity outstanding relate to lower long term debt mainly due to maturities exceeding new issuances. Other customer funding decreased by € 12.2 billion.

The overall proportion of our most stable funding sources (comprising Capital Markets and Equity, Private Bank and Corporate Bank) excluding TLTRO III has decreased from 83.1 % in 2019 to 82.3 % in 2020.

Composition of External Funding Sources



[1] Other Customers includes fiduciary deposits, X-markets notes and margin/Prime Brokerage cash balances (shown on a net basis).
Reference: Reconciliation to total balance sheet of € 1,325.0 billion (€ 1,297.7 billion): Derivatives & settlement balances € 348.2 billion (€ 335.7 billion), add-back for netting effect for margin/Prime Brokerage cash balances (shown on a net basis) € 63.4 billion (€ 52.4 billion), other non-funding liabilities € 27.4 billion (€ 30.1 billion) for December 31, 2020 and December 31, 2019, respectively.
Liabilities held for sale from the transfer of business to BNP Paribas were allocated back to their original line items prior to reclassification, to reflect their economic impact on funding: € 1.9 billion to derivatives & settlement balances (non-funding relevant) and € 7.9 billion to payables from Prime Brokerage, with a net impact of additional € 3.4 billion on other customer funding (funding relevant) and € 4.7 billion add-back effect for netting of margin/Prime Brokerage cash balances (reconciliation item).

Maturity of unsecured wholesale funding, ABCP and capital markets issuance[1]

Dec 31, 2020

in € m.	Not more than 1 month	Over 1 month but not more than 3 months	Over 3 months but not more than 6 months	Over 6 months but not more than 1 year	Sub-total less than 1 year	Over 1 year but not more than 2 years	Over 2 years	Total
Deposits from banks	964	1,063	779	547	3,354	162	78	3,594
Deposits from other wholesale customers	1,626	1,326	407	986	4,344	409	1,162	5,914
CDs and CP	693	466	887	753	2,800	0	21	2,821
ABCP	0	0	0	0	0	0	0	0
Senior non-preferred plain vanilla	3,689	3,970	2,349	8,291	18,298	8,235	34,106	60,639
Senior preferred plain vanilla	15	0	5	1,698	1,718	85	1,955	3,759
Senior structured	544	416	917	1,465	3,343	2,310	12,021	17,674
Covered bonds/ABS	70	1,179	786	1,966	4,001	1,337	17,303	22,641
Subordinated liabilities	0	0	538	531	1,069	1,765	11,437	14,271
Other	137	0	0	0	137	0	695	832
Total	**7,738**	**8,420**	**6,668**	**16,237**	**39,063**	**14,303**	**78,779**	**132,145**
Of which:								
Secured	70	1,179	786	1,966	4,001	1,337	17,303	22,641
Unsecured	7,668	7,241	5,882	14,271	35,063	12,966	61,476	109,505

[1] Includes additional Tier 1 notes reported as additional equity components in the financial statements. Liabilities with call features are shown at earliest legally exercisable call date. No assumption is made as to whether such calls would be exercised.
[2] Secured funding volume reported on a gross basis pre own debt elimination

The total volume of unsecured wholesale liabilities, ABCP and capital markets issuance maturing within one year amount to € 39 billion as of December 31, 2020, and should be viewed in the context of our total Liquidity Reserves of € 243 billion.

in € m.	Not more than 1 month	Over 1 month but not more than 3 months	Over 3 months but not more than 6 months	Over 6 months but not more than 1 year	Sub-total less than 1 year	Over 1 year but not more than 2 years	Over 2 years	Total
								Dec 31, 2019
Deposits from banks	1,275	2,179	3,602	339	7,396	92	211	7,699
Deposits from other wholesale customers	682	4,466	754	1,819	7,720	605	1,064	9,389
CDs and CP	260	569	857	983	2,670	1	0	2,671
ABCP	0	0	0	0	0	0	0	0
Senior non-preferred plain vanilla	136	2,503	1,584	7,677	11,899	19,175	33,007	64,081
Senior preferred plain vanilla	0	0	0	5	5	1,800	1,039	2,844
Senior structured	220	692	659	2,692	4,262	2,926	14,301	21,490
Covered bonds/ABS	173	1,166	244	2,214	3,797	4,068	13,617	21,482
Subordinated liabilities	3	722	2,742	493	3,959	23	9,622	13,605
Other	107	0	0	0	107	0	776	883
Total	2,855	12,297	10,440	16,223	41,816	28,690	73,637	144,143
Of which:								
Secured	173	1,166	244	2,214	3,797	4,068	13,617	21,482
Unsecured	2,682	11,131	10,197	14,009	38,019	24,622	60,021	122,661

The following table shows the currency breakdown of our short-term unsecured wholesale funding, of our ABCP funding and of our capital markets issuance.

Unsecured wholesale funding, ABCP and capital markets issuance (currency breakdown)

					Dec 31,2020					Dec 31,2019
in € m.	in EUR	in USD	in GBP	in other CCYs	Total	in EUR	in USD	in GBP	in other CCYs	Total
Deposits from banks	963	2,222	149	261	3,594	1,330	5,558	13	798	7,699
Deposits from other wholesale customers	4,474	989	90	361	5,914	8,968	162	204	56	9,389
CDs and CP	1,082	715	365	658	2,821	884	678	196	913	2,671
ABCP	0	0	0	0	0	0	0	0	0	0
Senior non-preferred plain vanilla	29,700	25,122	1,833	3,984	60,639	29,365	27,696	1,822	5,198	64,081
Senior preferred plain vanilla	1,894	1,635	0	230	3,759	1,064	1,780	0	0	2,844
Senior structured	7,725	7,972	14	1,963	17,674	8,181	10,856	28	2,425	21,490
Covered bonds/ ABS	22,641	0	0	0	22,641	21,482	0	0	0	21,482
Subordinated liabilities	4,693	3,577	0	6,001	14,271	3,509	4,213	0	5,884	13,605
Other	832	0	0	0	832	883	0	0	0	883
Total	**74,004**	**42,232**	**2,451**	**13,458**	**132,145**	75,666	50,943	2,261	15,274	144,143
Of which:										
Secured	22,641	0	0	0	22,641	21,482	0	0	0	21,482
Unsecured	51,363	42,232	2,451	13,458	109,505	54,184	50,943	2,261	15,274	122,661

Liquidity Reserves

Composition of our liquidity reserves by parent company (including branches) and subsidiaries

	Dec 31, 2020		Dec 31, 2019	
in € bn.	Carrying Value	Liquidity Value	Carrying Value	Liquidity Value
Available cash and cash equivalents (held primarily at central banks)	155	155	134	134
Parent (incl. foreign branches)	130	130	91	91
Subsidiaries	25	25	43	43
Highly liquid securities (includes government, government guaranteed and agency securities)	62	62	67	64
Parent (incl. foreign branches)	42	41	45	42
Subsidiaries	20	20	23	22
Other unencumbered central bank eligible securities	26	24	21	15
Parent (incl. foreign branches)	21	19	17	13
Subsidiaries	5	5	4	2
Total liquidity reserves	243	241	222	213
Parent (incl. foreign branches)	192	191	153	146
Subsidiaries	51	50	69	67

As of December 31, 2020, our liquidity reserves amounted to € 243 billion compared with € 222 billion as of December 31, 2019. The increase of € 21 billion comprised approximately a € 21 billion increase in cash and cash equivalents, offset by a decrease of € 5 billion in highly liquid securities and € 5 billion increase in other unencumbered securities. The development was largely driven by participation in the ECB TLTRO III, ongoing deleveraging efforts in our Equity business and a modest increase in Private Bank deposits. Maturing debt issuances in the Capital Markets, decline in the unsecured wholesale funding and non-operating Corporate Bank deposits were complemented by model enhancements increasing the liquidity reserves. The quarterly average of our liquidity reserves for this year is € 233 billion compared with € 243 billion during 2019. In the table above the carrying value represents the market value of our liquidity reserves while the liquidity value reflects our assumption of the value that could be obtained, primarily through secured funding, taking into account the experience observed in secured funding markets at times of stress.

Liquidity Coverage Ratio

Our weighted average LCR of 142 % (twelve months average) has been calculated in accordance with the Commission Delegated Regulation (EU) 2015/61 and the EBA Guidelines on LCR disclosure to complement the disclosure of liquidity risk management under Article 435 CRR.

The year-end LCR as of December 31, 2020 stands at 144.8 % compared to 141.2 % as of December 31, 2019.

LCR components

	Dec 31, 2020	Dec 31, 2019
in € bn. (unless stated otherwise)	Total adjusted weighted value (average)	Total adjusted weighted value (average)
Number of data points used in the calculation of averages	12	12
High Quality Liquid Assets	207	219
Total net cash outflows	146	154
Liquidity Coverage Ratio (LCR) in %	142 %	142 %

Funding Risk Management

Structural Funding

All funding matrices (the aggregate currency, the USD and the GBP funding matrix) were in line with the respective risk appetite as of year ends 2020 and 2019.

Stress Testing and Scenario Analysis

At the end of 2020 our stressed Net Liquidity Position stood at €43 billion. The stressed Net Liquidity Position was negative at the end of the first quarter 2020 reflecting weeks of actual stress from COVID-19. The measure is designed to effectively add an additional stress over a further eight week period. The internal stress test proved effective providing an early indicator that the bank had entered an actual stressed period. Including a normalization of conditions in the client business, sNLP quickly improved for the remainder of the year, mainly as a result of increased liquidity, deposit optimization and methodology enhancements.

Global All Currency Daily Stress Testing Results

	Dec 31, 2020			Dec 31, 2019		
in € bn.	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position	Funding Gap[1,4]	Gap Closure[2,4]	Net Liquidity Position[4]
Systemic market risk	82	189	107	100	175	75
1 notch downgrade (DB specific)	17	145	128	83	173	90
Severe downgrade (DB specific)	157	216	59	172	209	37
Combined[3]	177	220	43	185	209	24

[1] Funding gap caused by impaired rollover of liabilities and other projected outflows.
[2] Based on liquidity generation through Liquidity Reserves and other business mitigants.
[3] Combined impact of systemic market risk and severe downgrade.

Global EUR Daily Stress Testing Results

	Dec 31, 2020			Dec 31, 2019		
in €	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position	Funding Gap[1,4]	Gap Closure[2,4]	Net Liquidity Position[4]
Combined[3]	86	104	18	91	99	8

[1] Funding gap caused by impaired rollover of liabilities and other projected outflows.
[2] Based on liquidity generation through Liquidity Reserves and other business mitigants.
[3] Combined impact of systemic market risk and severe downgrade.
[4] December 31, 2019 numbers have been updated to align with updated methodology reflected in the December 31, 2020 numbers

Global USD Daily Stress Testing Results

	Dec 31, 2020			Dec 31, 2019		
in € bn.	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position	Funding Gap[1,4]	Gap Closure[2,4]	Net Liquidity Position[4]
Combined[3]	60	64	4	75	84	9

[1] Funding gap caused by impaired rollover of liabilities and other projected outflows.
[2] Based on liquidity generation through Liquidity Reserves and other business mitigants.
[3] Combined impact of systemic market risk and severe downgrade.
[4] December 31, 2019 numbers have been updated to align with updated methodology reflected in the December 31, 2020 numbers

Global GBP Daily Stress Testing Results

	Dec 31, 2020			Dec 31, 2019		
in € bn.	Funding Gap[1]	Gap Closure[2]	Net Liquidity Position	Funding Gap[4]	Gap Closure[4]	Net Liquidity Position[4]
Combined[3]	4	10	6	7	9	2

[1] Funding gap caused by impaired rollover of liabilities and other projected outflows.
[2] Based on liquidity generation through Liquidity Reserves and other business mitigants.
[3] Combined impact of systemic market risk and severe downgrade.
[4] December 31, 2019 numbers have been updated to align with updated methodology reflected in the December 31, 2020 numbers

The following table presents the amount needed to meet collateral requirements from contractual obligations in the event of a one- or two-notch downgrade by rating agencies for all currencies.

Contractual Obligations

	Dec 31, 2020		Dec 31, 2019	
in € m.	One-notch downgrade	Two-notch downgrade	One-notch downgrade	Two-notch downgrade
Contractual derivatives funding or margin requirements	354	439	415	749
Other contractual funding or margin requirements	0	0	0	0

Asset Encumbrance

This section refers to asset encumbrance in the group of institutions consolidated for banking regulatory purposes pursuant to the German Banking Act. Therefore this excludes insurance companies or companies outside the finance sector. Assets pledged by our insurance subsidiaries are included in Note 20 “Assets Pledged and Received as Collateral” of the consolidated financial statements, and restricted assets held to satisfy obligations to insurance companies’ policy holders are included within Note 37 “Information on Subsidiaries” of the consolidated financial statements.

Encumbered assets primarily comprise those on- and off-balance sheet assets that are pledged as collateral against secured funding, collateral swaps, and other collateralized obligations. Additionally, in line with EBA technical standards on regulatory asset encumbrance reporting, assets placed with settlement systems, including default funds and initial margins, as well as other assets pledged which cannot be freely withdrawn such as mandatory minimum reserves at central banks, are considered encumbered. We also include derivative margin receivable assets as encumbered under these EBA guidelines.

Readily available assets are those on- and off-balance sheet assets that are not otherwise encumbered, and which are in freely transferrable form. Unencumbered financial assets at fair value, other than securities borrowed or purchased under

resale agreements and positive market value from derivatives, and available for sale investments are all assumed to be readily available.

The readily available value represents the on- and off-balance sheet carrying amount or fair value rather than any form of stressed liquidity value (see the “Liquidity Reserves” for an analysis of unencumbered liquid assets available under a liquidity stress scenario). Other unencumbered on- and off-balance sheet assets are those assets that have not been pledged as collateral against secured funding or other collateralized obligations, or are otherwise not considered to be readily available. Included in this category are securities borrowed or purchased under resale agreements and positive market value from derivatives. Similarly, for loans and other advances to customers, these would only be viewed as readily available to the extent they are already in a pre-packaged transferrable format, and have not already been used to generate funding. This represents the most conservative view given that an element of such loans currently shown in Other assets could be packaged into a format that would be suitable for use to generate funding.

Encumbered and unencumbered assets

	Dec 31, 2020			
	Carrying value			
			Unencumbered assets	
in € bn. (unless stated otherwise)	Assets	Encumbered assets	Readily available	Other
Debt securities	156	61	95	0
Equity instruments	13	6	7	0
Other assets:				
Cash and due from banks & Interest earning deposits with Banks	175	13	162	0
Securities borrowed or purchased under resale agreements[1]	9	0	0	9
Financial assets at fair value through profit and loss[2]				
Trading assets	9	0	9	0
Positive market value from derivative financial instruments	344	0	0	344
Securities borrowed or purchased under resale agreements[1]	63	0	0	63
Other financial assets at fair value through profit or loss	3	0	3	0
Financial assets at fair value through other comprehensive income[2]	6	0	5	2
Loans	459	83	3	373
Other assets	90	55	0	35
Total	1,326	218	282	825

[1] Securities borrowed and securities purchased under resale agreements are all shown as other unencumbered. The use of the underlying collateral is separately captured in the off-balance sheet table below.
[2] Excludes Debt securities and Equity instruments (separately disclosed above).

	Dec 31, 2020			
	Fair value of collateral received			
			Unencumbered assets	
in € bn. (unless stated otherwise)	Assets	Encumbered assets	Readily available	Other
Collateral received:	237	199	36	2
Debt securities	193	159	34	0
Equity instruments	42	40	2	0
Other collateral received	2	0	0	2

	Dec 31, 2019			
	Carrying value			
			Unencumbered assets	
in € bn. (unless stated otherwise)	Assets	Encumbered assets	Readily available	Other
Debt securities	153	46	108	0
Equity instruments	18	8	10	0
Other assets:				
Cash and due from banks & Interest earning deposits with Banks	147	12	135	0
Securities borrowed or purchased under resale agreements[1]	14	0	0	14
Financial assets at fair value through profit and loss[2]				
Trading assets	13	0	13	0
Positive market value from derivative financial instruments	333	0	0	333
Securities borrowed or purchased under resale agreements[1]	71	0	0	71
Other financial assets at fair value through profit or loss	3	0	3	0
Financial assets at fair value through other comprehensive income[2]	6	0	5	1
Loans	458	70	10	378
Other assets	80	48	0	32
Total	1,297	184	282	831

[1] Securities borrowed and securities purchased under resale agreements are all shown as other unencumbered. The use of the underlying collateral is separately captured in the off-balance sheet table below.
[2] Excludes Debt securities and Equity instruments (separately disclosed above).

in € bn. (unless stated otherwise)			Dec 31, 2019	
			Fair value of collateral received	
			Unencumbered assets	
	Assets	Encumbered assets	Readily available	Other
Collateral received:	252	200	47	4
Debt securities	215	171	43	0
Equity instruments	33	29	4	0
Other collateral received	4	0	0	4

Maturity Analysis of Assets and Financial Liabilities

Treasury manages the maturity analysis of assets and liabilities. Modeling of assets and liabilities is necessary in cases where the contractual maturity does not adequately reflect the liquidity risk position. The most significant example in this context would be immediately repayable deposits from retail and transaction banking customers which have consistently displayed high stability throughout even the most severe financial crises.

The modeling profiles are part of the overall liquidity risk management framework (see section “Liquidity Stress Testing and Scenario Analysis” for short-term liquidity positions ≤ 1 year and section “Structural Funding” for long-term liquidity positions > 1 year) which is defined and approved by the Management Board.

The following tables present a maturity analysis of our total assets based on carrying value and upon earliest legally exercisable maturity as of December 31, 2020 and 2019, respectively.

Analysis of the earliest contractual maturity of assets

										Dec 31, 2020
in € m.	On demand (incl. Overnight and one day notice)	Up to one month	Over 1 month to no more than 3 months	Over 3 months but no more than 6 months	Over 6 months but no more than 9 months	Over 9 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Cash and central bank balances	163,953	2,165	32	39	13	6	0	0	0	166,208
Interbank balances (w/o central banks)	7,106	1,239	470	138	95	71	0	0	11	9,130
Central bank funds sold	0	0	0	0	0	0	0	0	0	0
Securities purchased under resale agreements	151	2,111	1,378	765	84	237	2,212	1,593	0	8,533
With banks	137	1,578	206	508	64	0	1,529	1,505	0	5,527
With customers	14	533	1,172	257	20	237	683	88	0	3,005
Securities borrowed	0	0	0	0	0	0	0	0	0	0
With banks	0	0	0	0	0	0	0	0	0	0
With customers	0	0	0	0	0	0	0	0	0	0
Financial assets at fair value through profit or loss	462,674	39,834	6,189	2,971	593	3,391	1,898	4,063	6,366	527,980
Trading assets	448,260	291	0	0	0	2,480	83	0	309	451,422
Fixed-income securities and loans	91,353	291	0	0	0	2,480	83	0	119	94,326
Equities and other variable-income securities	11,579	0	0	0	0	0	0	0	190	11,769
Other trading assets	1,833	0	0	0	0	0	0	0	0	1,833
Positive market values from derivative financial instruments	343,493	0	0	0	0	0	0	0	0	343,493
Non-trading financial assets mandatory at fair value through profit or loss	14,415	39,543	6,189	2,971	593	912	1,461	3,980	6,057	76,121
Securities purchased under resale agreements	3,649	32,309	5,052	2,848	560	97	373	1,169	0	46,057
Securities borrowed	10,532	5,752	721	0	0	0	4	0	0	17,009
Fixed-income securities and loans	198	1,188	399	117	6	278	997	2,691	5,678	11,553
Other non-trading financial assets mandatory at fair value through profit or loss	36	294	16	6	27	536	88	121	378	1,503
Financial assets designated at fair value through profit or loss	0	0	0	0	0	0	353	83	1	437
Positive market values from derivative financial instruments qualifying for hedge accounting	0	528	622	350	131	71	215	221	1,126	3,265
Financial assets at fair value through other comprehensive income	5	3,013	3,182	3,059	3,304	1,831	8,436	11,271	21,735	55,834
Securities purchased under resale agreements	0	1,543	0	0	0	0	0	0	0	1,543
Securities borrowed	0	0	0	0	0	0	0	0	0	0
Debt securities	0	1,167	2,621	2,684	2,963	1,653	7,633	9,252	21,683	49,656
Loans	5	303	561	374	341	179	803	2,019	52	4,635
Other	0	0	0	0	0	0	0	0	0	0
Loans	13,792	41,600	19,375	15,763	9,482	11,575	28,140	75,957	211,005	426,691
To banks	270	693	744	577	235	384	258	1,602	751	5,514
To customers	13,522	40,907	18,632	15,186	9,247	11,191	27,882	74,355	210,255	421,177
Retail	2,288	7,919	3,226	1,817	1,100	1,262	4,955	16,034	164,343	202,943
Corporates and other customers	11,234	32,988	15,406	13,369	8,148	9,929	22,927	58,321	45,912	218,234
Other financial assets	73,415	7,766	1,362	1,112	430	2,207	2,073	6,867	1,560	96,791
Total financial assets	721,096	98,256	32,611	24,197	14,133	19,390	42,975	99,972	241,803	1,294,433
Other assets	13,898	1,599	1	1,672	9	1,983	211	1,406	9,749	30,529
Total assets	734,994	99,856	32,612	25,869	14,142	21,373	43,186	101,378	251,552	1,324,961

Analysis of the earliest contractual maturity of assets

Dec 31, 2019

in € m.	On demand (incl. Overnight and one day notice)	Up to one month	Over 1 month to no more than 3 months	Over 3 months but no more than 6 months	Over 6 months but no more than 9 months	Over 9 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Cash and central bank balances	130,338	4,152	205	54	20	2,601	222	0	0	137,592
Interbank balances (w/o central banks)	5,639	3,338	172	98	135	231	0	0	22	9,636
Central bank funds sold	0	0	0	0	0	0	0	0	0	0
Securities purchased under resale agreements	16	5,668	2,158	1,142	163	445	881	3,329	0	13,801
With banks	11	5,011	781	474	20	104	610	2,709	0	9,720
With customers	5	657	1,377	668	143	341	271	620	0	4,081
Securities borrowed	328	100	0	0	0	0	0	0	0	428
With banks	38	0	0	0	0	0	0	0	0	38
With customers	290	100	0	0	0	0	0	0	0	390
Financial assets at fair value through profit or loss	461,076	43,798	8,883	1,783	226	1,371	452	5,927	7,196	530,713
Trading assets	110,559	0	0	0	0	0	0	0	315	110,875
Fixed-income securities and loans	93,000	0	0	0	0	0	0	0	12	93,012
Equities and other variable-income securities	17,017	0	0	0	0	0	0	0	303	17,320
Other trading assets	543	0	0	0	0	0	0	0	0	543
Positive market values from derivative financial instruments	332,931	0	0	0	0	0	0	0	0	332,931
Non-trading financial assets mandatory at fair value through profit or loss	17,586	43,798	8,883	1,783	226	1,371	452	5,921	6,881	86,901
Securities purchased under resale agreements	4,791	38,563	6,796	743	91	121	156	2,105	0	53,366
Securities borrowed	12,623	4,355	930	0	0	0	10	0	0	17,918
Fixed-income securities and loans	0	493	1,079	865	135	388	285	3,780	5,344	12,369
Other non-trading financial assets mandatory at fair value through profit or loss	172	387	78	176	0	862	0	35	1,537	3,247
Financial assets designated at fair value through profit or loss	0	0	0	0	0	0	0	6	0	7
Positive market values from derivative financial instruments qualifying for hedge accounting	0	121	272	129	38	15	180	578	1,446	2,780
Financial assets at fair value through other comprehensive income	12	3,315	2,395	2,989	1,417	2,055	4,603	15,570	13,148	45,503
Securities purchased under resale agreements	0	1,408	0	0	0	0	7	0	0	1,415
Securities borrowed	0	0	0	0	0	0	0	0	0	0
Debt securities	0	1,618	1,848	2,561	1,065	1,851	4,187	13,016	13,068	39,214
Loans	12	289	546	428	352	204	409	2,554	80	4,874
Other	0	0	0	0	0	0	0	0	0	0
Loans	16,410	45,045	20,166	15,716	9,554	8,778	29,985	80,631	203,556	429,841
To banks	85	1,859	1,064	670	238	468	234	1,213	370	6,201
To customers	16,325	43,186	19,102	15,046	9,316	8,310	29,751	79,418	203,186	423,640
Retail	2,264	8,699	3,419	2,361	1,531	1,044	4,295	15,325	156,824	195,762
Corporates and other customers	14,061	34,487	15,683	12,685	7,785	7,266	25,456	64,094	46,362	227,878
Other financial assets	62,134	7,807	1,455	557	249	2,767	2,252	12,277	7,697	97,196
Total financial assets	675,954	113,345	35,706	22,468	11,801	18,263	38,574	118,314	233,065	1,267,490
Other assets	10,921	264	3,220	103	109	197	347	1,632	13,392	30,185
Total assets	686,875	113,609	38,926	22,571	11,910	18,459	38,921	119,946	246,458	1,297,674

The following tables present a maturity analysis of our total liabilities based on carrying value and upon earliest legally exercisable maturity as of December 31, 2020 and 2019, respectively.

Analysis of the earliest contractual maturity of liabilities

Dec 31, 2020

in € m.	On demand (incl. Overnight and one day notice)	Up to one month	Over 1 month to no more than 3 months	Over 3 months but no more than 6 months	Over 6 months but no more than 9 months	Over 9 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Deposits	375,205	20,323	85,104	47,290	10,005	6,455	5,362	8,053	9,948	567,745
Due to banks	34,818	1,364	7,860	7,969	5,353	1,354	2,961	5,853	7,901	75,432
Due to customers	340,387	18,959	77,244	39,322	4,653	5,101	2,401	2,199	2,047	492,313
Retail	151,438	3,660	57,516	28,093	992	714	605	490	150	243,656
Corporates and other customers	188,949	15,300	19,728	11,229	3,661	4,387	1,796	1,709	1,898	248,657
Trading liabilities	372,090	0	0	0	0	0	0	0	0	372,090
Trading securities	43,882	0	0	0	0	0	0	0	0	43,882
Other trading liabilities	434	0	0	0	0	0	0	0	0	434
Negative market values from derivative financial instruments	327,775	0	0	0	0	0	0	0	0	327,775
Financial liabilities designed at fair value through profit or loss	12,658	18,594	9,961	2,101	86	26	347	1,494	1,316	46,582
Securities sold under repurchase agreements	11,258	18,511	9,780	2,065	0	1	11	10	0	41,636
Long-term debt	84	36	164	34	24	25	317	1,450	1,240	3,374
Other financial liabilities designated at fair value through profit or loss	1,316	47	17	1	62	0	18	34	77	1,572
Investment contract liabilities	0	0	0	0	0	526	0	0	0	526
Negative market values from derivative financial instruments qualifying for hedge accounting	0	108	245	46	11	9	65	254	541	1,279
Central bank funds purchased	0	0	0	0	0	0	0	0	0	0
Securities sold under repurchase agreements	1,815	14	1	0	0	0	9	485	1	2,325
Due to banks	1,814	13	0	0	0	0	9	409	0	2,246
Due to customers	1	0	1	0	0	0	0	76	1	79
Securities loaned	1,697	0	0	0	0	0	0	0	0	1,698
Due to banks	426	0	0	0	0	0	0	0	0	427
Due to customers	1,271	0	0	0	0	0	0	0	0	1,271
Other short term borrowings	1,385	282	366	647	400	474	0	0	0	3,553
Long-term debt	0	4,307	5,579	13,873	25,273	10,595	13,751	47,489	28,297	149,163
Debt securities - senior	0	4,143	5,229	3,643	5,093	7,356	12,462	35,199	20,266	93,391
Debt securities - subordinated	0	0	14	4	0	0	0	3,948	3,386	7,352
Other long-term debt - senior	0	164	335	10,202	20,180	3,239	1,274	8,156	4,552	48,103
Other long-term debt - subordinated	0	0	0	24	0	0	15	185	93	316
Trust Preferred Securities	0	0	0	524	269	528	0	0	0	1,321
Other financial liabilities	86,658	942	1,735	272	188	230	875	1,211	1,784	93,894
Total financial liabilities	851,507	44,569	102,991	64,753	36,232	18,843	20,410	58,985	41,888	1,240,178
Other liabilities	22,599	0	0	0	0	0	0	0	0	22,599
Total equity	0	0	0	0	0	0	0	0	62,184	62,184
Total liabilities and equity	874,107	44,569	102,991	64,753	36,232	18,843	20,410	58,985	104,072	1,324,961
Off-balance sheet commitments given	41,744	8,996	11,000	18,109	8,285	21,379	36,149	84,924	33,269	263,854
Banks	576	1,356	1,268	2,137	1,453	1,532	2,008	2,401	2,704	15,437
Retail	16,654	802	950	333	225	1,529	349	468	10,262	31,570
Corporates and other customers	24,514	6,838	8,783	15,639	6,607	18,318	33,792	82,054	20,303	216,847

Analysis of the earliest contractual maturity of liabilities

Dec 31, 2019

in €m.	On demand (incl. Overnight and one day notice)	Up to one month	Over 1 month to no more than 3 months	Over 3 months but no more than 6 months	Over 6 months but no more than 9 months	Over 9 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Deposits	364,007	20,305	92,964	35,712	17,979	15,110	7,205	8,675	10,251	572,208
Due to banks	43,745	1,631	8,834	5,338	1,065	665	2,153	5,453	7,972	76,856
Due to customers	320,262	18,674	84,130	30,374	16,914	14,445	5,052	3,222	2,279	495,352
Retail	135,727	4,746	57,398	16,271	8,895	5,854	579	654	171	230,296
Corporates and other customers	184,534	13,929	26,732	14,102	8,018	8,591	4,473	2,569	2,108	265,056
Trading liabilities	353,571	0	0	0	0	0	0	0	0	353,571
Trading securities	36,692	0	0	0	0	0	0	0	0	36,692
Other trading liabilities	373	0	0	0	0	0	0	0	0	373
Negative market values from derivative financial instruments	316,506	0	0	0	0	0	0	0	0	316,506
Financial liabilities designed at fair value through profit or loss	9,860	15,487	10,201	5,066	4,802	954	162	983	2,816	50,332
Securities sold under repurchase agreements	7,617	14,965	10,016	4,796	4,555	754	2	16	2	42,723
Long-term debt	89	160	112	256	223	137	159	951	2,675	4,761
Other financial liabilities designated at fair value through profit or loss	2,154	362	74	14	25	63	1	16	139	2,848
Investment contract liabilities	0	0	0	0	0	544	0	0	0	544
Negative market values from derivative financial instruments qualifying for hedge accounting	0	140	147	42	105	97	64	491	343	1,431
Central bank funds purchased	218	0	0	0	0	0	0	0	0	218
Securities sold under repurchase agreements	1,493	960	158	22	0	205	13	37	7	2,897
Due to banks	1,248	750	32	22	0	205	0	0	0	2,257
Due to customers	246	210	127	0	0	0	13	37	7	640
Securities loaned	258	0	0	0	0	0	0	0	0	259
Due to banks	15	0	0	0	0	0	0	0	0	16
Due to customers	243	0	0	0	0	0	0	0	0	243
Other short term borrowings	1,861	518	1,477	604	229	529	0	0	0	5,218
Long-term debt	0	630	14,841	11,320	7,194	4,104	28,724	37,228	32,433	136,473
Debt securities - senior	0	572	3,139	4,811	6,992	3,232	27,178	32,215	23,047	101,187
Debt securities - subordinated	0	0	15	2,023	0	13	0	1,295	3,588	6,934
Other long-term debt - senior	0	54	11,687	4,480	198	855	1,522	3,529	5,695	28,019
Other long-term debt - subordinated	0	3	0	7	4	3	24	190	101	333
Trust Preferred Securities	0	0	0	1,257	0	756	0	0	0	2,013
Other financial liabilities	78,597	1,088	1,653	280	254	253	875	1,493	867	85,361
Total financial liabilities	809,867	39,129	121,442	54,304	30,564	22,553	37,043	48,908	46,716	1,210,524
Other liabilities	24,990	0	0	0	0	0	0	0	0	24,990
Total equity	0	0	0	0	0	0	0	0	62,160	62,160
Total liabilities and equity	834,857	39,129	121,442	54,304	30,564	22,553	37,043	48,908	108,876	1,297,674
Off-balance sheet commitments given	39,558	7,525	12,808	14,979	8,110	18,609	33,148	90,696	35,238	260,672
Banks	594	1,025	1,145	1,365	1,265	2,158	1,609	2,147	2,481	13,791
Retail	17,028	769	701	364	82	1,086	301	227	9,468	30,025
Corporates and other customers	21,936	5,731	10,962	13,249	6,763	15,365	31,237	88,322	23,290	216,856

[1] The figures for 2019 have been revised

Compensation report

Introduction – 167

168 Management Board compensation report

Management Board compensation governance – 168
Compensation principles – 169
Compensation structure – 170
Long-term incentive and sustainability – 179
Forfeiture conditions / clawback – 181
Limitations in the event of exceptional developments – 181
Shareholding guidelines – 181
Pension benefits – 181
Other benefits upon early termination – 182
Management Board compensation for the 2020 financial year – 182
Share awards – 185
Management Board share ownership, shareholding guidelines – 186
Compensation in accordance with the German Corporate Governance Code (GCGC) – 188
Compensation in accordance with the German Accounting Standard No. 17 (GAS 17) – 195
Outlook: Further development of the compensation system from 2021 onwards – 197

199 Employee compensation report

Regulatory environment – 200
Compensation governance – 201
Compensation strategy – 202
Group compensation framework – 203
Determination of performance-based variable compensation – 204
Variable compensation structure – 205
Ex-post risk adjustment of variable compensation – 206
Employee groups with specific compensation structures – 207
Compensation decisions for 2020 – 208
Material Risk Taker compensation disclosure – 209

211 Compensation system for Supervisory Board members

Supervisory Board compensation for the 2020 financial year – 212

Introduction

The 2020 Compensation Report provides detailed compensation information with regard to the overall Deutsche Bank Group.

The Compensation Report comprises the following three sections:

Management Board compensation report

The first section is the Compensation Report for the Management Board, which consists of three parts. The first part of the Report sets out the structure and design of the compensation system for the members of the Management Board of Deutsche Bank AG. The second part comprises the report on the actual compensation on the compensation and other benefits granted by the Supervisory Board to the members of the Management Board of Deutsche Bank AG. In the third part, which was added this year, we inform you about the most important changes in the compensation system that will apply from the financial year 2021. The new compensation system will be presented to the shareholders for their approval at the 2021 Annual General Meeting. We also refer here to the Letter of the Supervisory Board on pages … to ….

Employee compensation report

The second section of the Compensation Report discloses information with regard to the compensation system and structure that applies to the employees in Deutsche Bank Group (including DWS Group). The report provides details on the Group Compensation Framework and outlines the decisions on Variable Compensation for 2020. Furthermore, this part contains quantitative disclosures specific to employees identified as Material Risk Takers (MRTs) in accordance with the Remuneration Ordinance for Institutions (*Institutsvergütungsverordnung* – InstVV).

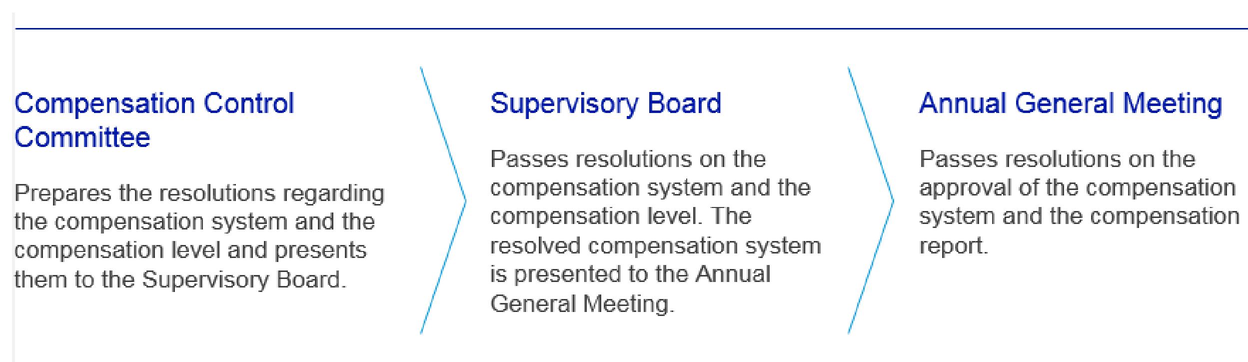
Supervisory Board report and disclosure

The third section of the Compensation Report provides information on the structure and level of compensation for Supervisory Board members of Deutsche Bank AG.

The Compensation Report complies with the requirements of Section 314 (1) No. 6 of the German Commercial Code (Handelsgesetzbuch, “HGB”), the German Accounting Standard No. 17 (“DRS 17”) “Reporting on Executive Body Remuneration”, CRR, InstVV, and the recommendations of the German Corporate Governance Code.

Management Board compensation report

Management Board compensation governance



The Supervisory Board as a whole is responsible for the structuring and design of the system for the compensation of the members of the Management Board as well as for determining their individual compensation. The Supervisory Board is supported by the Compensation Control Committee. The Compensation Control Committee controls and supports the appropriate structuring of the compensation policy and prepares the resolutions of the Supervisory Board regarding the individual compensation of the Management Board members. In addition, the Compensation Control Committee and/or the Supervisory Board will obtain advice from external consultants where this is considered necessary.

The number of members of the Compensation Control Committee was increased from four to six with effect from July 1, 2020. In accordance with regulatory requirements, at least one member must have sufficient expertise and professional experience in the area of risk management and risk controlling and at least one member must be an employee representative.

The Supervisory Board regularly reviews the compensation system for the members of the Management Board. In the past, the Supervisory Board had made use of the possibility provided in § 120 (4) of the German Stock Corporation Act (Aktiengesetz – AktG) for the General Meeting to approve the compensation system for Management Board members. The current system was approved by the Annual General Meeting in 2017. In 2020, the Supervisory Board reviewed the compensation structures in accordance with the legal framework changed by the law implementing the Second Shareholders' Rights Directive. It will have the 2021 Annual General Meeting resolve on the amended compensation system, now in accordance with § 120a AktG. An overview of the main changes can be found at the end of the Management Board compensation report. As part of the invitation to the Annual General Meeting, the amended compensation system will be presented in a holistic and transparent manner with all necessary detail.

Compensation system

Compensation principles

The compensation system and thus the determination of individual compensation are based on the six compensation principles outlined below. The compensation system was developed from these principles, and they provide guidance if questions of interpretation arise. Therefore, they are always taken into consideration by the Supervisory Board when passing a resolution on the compensation system and the assessment of individual compensation.

Governance	The structuring of the compensation system and determination of individual compensation takes place within the framework of the statutory and regulatory requirements. The Supervisory Board's objective is to offer, within the boundaries of applicable regulatory requirements, a compensation package that is in line with customary market practices and therefore competitive with comparable roles.
Group Strategy	Through the structure of the compensation system, the members of the Management Board are to be motivated to achieve the objectives set out in the Bank's strategies, to work continuously towards the positive development of the Group and thereby to avoid undue risks.
Collective and Individual Performance of the Management Board Members	The variable, performance-related compensation is determined on the basis of the level of achievement of previously agreed objectives. For this purpose, collective and Deutsche Bank Group-related objectives applying equally to all Management Board members are set. In addition, the Supervisory Board sets individual objectives for each member of the Management Board separately, which particularly take into account the development of the business, infrastructure or regional areas of responsibility as the case may be. In a balanced way, such objectives may be financial or non-financial.
Regulatory or other compensation caps	Pursuant to CRD 4, the ratio of fixed to variable compensation is generally limited to 1:1 (cap regulation), i.e. the amount of variable compensation must not exceed that of fixed compensation. However, under CRD 4 EU member states are authorized to stipulate that shareholders may resolve to relax the requirement by setting the ratio of fixed to variable compensation at 1:2. Germany has made use of this authorization. In line therewith, in May 2014, the General Meeting approved the aforementioned setting at 1:2 with a majority of 91 %. The compensation system resolved by the Supervisory Board also provides fixed caps for the different variable compensation components. In addition, the Supervisory Board is entitled to set an additional cap for the total compensation of the individual members of the Management Board. In the 2020 financial year, the additional cap was set at € 9.85 million.
Sustainability	The total variable compensation for Management Board members is only to be granted on a deferred basis. The Long-Term Award, and therefore about 60 % of the deferred variable compensation, is to be granted in the form of equity-based compensation components, which only vest no less than five years after the grant in one tranche (cliff vesting) and are subject to an additional retention period of one year. The remaining portion is generally to be granted as non-equity-based compensation component and to vest in equal tranches over a period of seven years. During the deferral and retention period, deferred compensation is subject to specific performance- and forfeiture provisions. The total variable compensation may be reclaimed by the bank for up to two years after the expiry of the last deferral period in response to specific individual negative contributions to results made by the Management Board member (clawback).
Alignment of interests of Management Board members and shareholders	When designing the specific structure of the compensation system, determining individual compensation amounts, and structuring compensation delivery and allocation, the focus is on ensuring a close link between the interests of both the Management Board members and shareholders. When defining the variable compensation, this is achieved through the utilization of clearly defined key financial figures which are directly linked to the performance of Deutsche Bank.

Based on these principles, the Supervisory Board decides on the structure, amount and weighting of the individual compensation components. In order to ensure the appropriateness of the compensation, it takes into account the compensation both in a horizontal comparison with competitors and in a vertical comparison with the workforce.

The compensation system and the compensation structures they encompass are reflected in the individual Management Board members' contracts.

Compensation structure

Structure and compensation elements of the compensation policies

The compensation system applicable since January 2017 consist of non-performance-related (fixed) and performance-related (variable) components.

Non-performance-related components (fixed compensation)

The fixed compensation is not linked to performance and consists of the base salary, any allowances granted, contributions to the company pension plan and "fringe benefits".

The **annual base salary** amounts to € 3.4 million for the Chairman of the Management Board. The President receives an annual base salary of € 3 million. With effect from August 1, 2020, the Supervisory Board has approved an annual base salary for the Chief Financial Officer and the Chief Risk Officer of € 2.6 million. The annual base salary of the other ordinary Management Board members is € 2.4 million. As the business divisions CB and IB are currently not represented on the Management Board separately, the base salary for a Management Board member that would be solely responsible for CB or IB, has not yet been determined.

Various factors were considered when determining the appropriate level of the base salary. First, the base salary rewards general assumption of the office of Management Board member and the related overall responsibility of the individual Management Board members. In addition, the compensation paid in the market to executives holding comparable positions is taken into account when determining the amount of the base salary. However, a market comparison must take into consideration that the regulatory requirements pursuant to the German Remuneration Ordinance for Institutions (Institutsvergütungsverordnung – InstVV) in conjunction with Section 25a (5) of the German Banking Act (Kreditwesengesetz) set a cap for variable compensation at 200 % of the fixed compensation. Accordingly, the fixed compensation must be determined in a way that ensures competitive total compensation in line with market standards while taking into account the aforementioned requirements. The cap required for regulatory reasons was implemented in 2014.

In 2017, the Supervisory Board introduced an optional functional allowance which may be awarded to Management Board members who are assigned additional tasks and a particular responsibility extending beyond the assigned regular area of responsibility within the Management Board. Since August 2019, none of the Management Board members has received an optional functional allowance.

In addition, the Management Board members receive **contributions to the company pension plan**, or alternatively, if certain conditions are met, a so-called pension allowance. They are qualified as fixed compensation according to regulatory provisions and are therefore to be taken into account when determining the ratio of fixed to variable compensation components. The annual contribution to the company pension plan or the pension allowance for all Management Board members, including the Chairman, was consistently € 650,000.

Additional non-performance-related components include "**fringe benefits**". The "fringe benefits" comprise the monetary value of non-cash benefits such as company cars and driver services, insurance premiums, expenses for company-related social functions and security measures including payments, if applicable, of taxes on these benefits as well as taxable reimbursements of expenses.

Performance-Related Components (Variable Compensation)

The current compensation system provides that compensation must be linked to **pre-defined transparent performance criteria**. The system allows for the agreement of individual and divisional objectives alongside collective objectives and makes it possible to achieve competitive pay levels in line with market standards on the basis of the respective member's area of responsibility and, at the same time, also meets in this respect the regulatory requirements.

The entire variable compensation is performance related ("pay for performance"). It consists of a short-term component, the so-called **Short-Term Award** and a long-term component, the so-called **Long-Term Award**.

Since 2017, the InstVV generally stipulates a **three-year assessment period** for the determination of the variable compensation for Management Board members. The bank complies with of this requirement by assessing each of the three objectives of the long-term component over a three-year period. If the relevant three years cannot be attributed to a member of the Management Board due to for example that member joining the bank only recently, the objective achievement level will be determined for the period that can be attributed to the Management Board member. If the assessment period is shorter than three years, the deferral period of the variable compensation to be granted is extended by the number of years missing with respect to the assessment period.

Objectives

Objectives are established by the Supervisory Board as part of an **objective setting agreement at the beginning of the respective financial year** for purposes of performance evaluation. For all objectives, financial metrics are set to measure the achievement level of the objectives in a transparent way. The discretionary decision is limited to 3 to 6 % with respect to the total variable compensation.

The allocation of the objectives to the individual compensation components is set out below.

	Relevant indicators	Relative weight
Short-Term Award (STA)	**Group component [1]**	
	CET1 ratio	25 %
	Leverage ratio	25 %
	Adjusted non-interest expenses	25 %
	Post-tax return on tangible equity (RoTE)	25 %
	Individual component [2]	
	Individual Objectives	60 %
	Balanced Scorecard	30 %
	Limited Discretion	10 %
Long-Term Award (LTA) [3]	Relative total shareholder return	33,34 %
	Organic Capital Growth	33,33 %
	Culture & Client Factor / Control Environment	33,33 %

(1) Joint strategic key objectives which also form base for the assessment of the group component as part of the compensation system for the employees of DB Group.
(2) Short-term individual and divisional objectives of quantitative and qualitative nature.
(3) Long-term group-wide objectives.

Short-Term Award (STA)

The STA is linked to the achievement of **short term and medium-term objectives**. Objectives include collective objectives to be achieved by the Management Board as a whole and individual objectives the level of achievement of which is determined separately for each member of the Management Board.

In order to distinguish collective objectives from individual objectives, the STA is divided into two components:

- the Group Component and
- the Individual Component.

Group Component

Objectives to be achieved jointly by the Management Board are the basis for the assessment of the group component as part of the STA. The key objective of the Group component is to link the variable compensation to the performance of the Bank.

In 2016, the Management Board decided to align part of the variable compensation for non-tariff employees of the Bank more closely with Group performance. This seeks to reward the contribution of all employees to the financial results of the Bank and the achievements in the implementation of its strategy. Management Board compensation is also closely linked to the performance of the Bank using selected key financial figures. The Supervisory Board decided to align the compensation policy for the Management Board members more closely with the compensation policies for employees. This is achieved by using the annual performance metrics underlying the Group component in the compensation system for employees as the reference value for the Group component of the STA since 2017.

In accordance with the bank's strategy, four performance metrics constituting important indicators for the capital, risk, cost and return profile of the Bank form the reference value for the Group Component of the STA:

Common Equity Tier 1 (CET1) capital ratio (fully loaded)	The Common Equity Tier-1 Ratio of the Bank in relation to risk-weighted assets.
Leverage ratio	The Bank´s Tier 1 capital as a percentage of its total leverage exposure pursuant to CRR/CRD 4.
Adjusted costs	Total noninterest expenses, excluding restructuring, severance and litigation cost as well as impairment of goodwill and other intangible assets.
Post-tax return on tangible equity (RoTE)	Net income (or loss) attributable to Deutsche Bank shareholders as a percentage of average tangible shareholders' equity. The latter is the shareholders' equity on the bank´s balance sheet, excluding goodwill and other intangible assets.

The Supervisory Board regularly reviews the selection of the performance metrics. The above four objectives are equally weighted at up to 25 % in the determination of the Group Component of the STA, depending on the achievement level. If, overall, the performance metric-based objectives are not achieved during the period being evaluated, the Supervisory Board may determine that a Group component will not be granted.

Individual Component

The individual component of the STA rewards the achievement of short- and medium-term **individual and divisional objectives**. These objectives are established by the Supervisory Board as part of the objective setting agreement for the respective financial year's performance evaluation. The key objectives are designed to contribute to the applicable business policy and strategic objectives of the Bank, in line with each Management Board member's area of responsibility. In a balanced way, financial and non-financial successes are taken into account. Objectives for the individual component may for example include revenue developments in the course of the year, project-related targets, diversity objectives or other developments in employee or client satisfaction.

As part of the annual objective setting agreement, corresponding key financial figures and/or measurement criteria are set for all objectives that are used to determine the objective achievement level. At least three objectives per financial year are set for each Management Board member.

Since 2018, a 30% share of the individual component has been measured on the basis of **Balanced Scorecards** in which qualitative and quantitative indicators are bundled. Balanced scorecards make it possible to translate strategic objectives into concrete actions. The Bank has thus introduced an appropriate tool for the steering and control of key performance indicators, which will measure the achievement level of targets against defined measurement parameters and measure them transparently at the end of the year.

Balanced scorecard

KPI categories	KPIs	Targets	Individual category weighting	KPI category performance factor bands		Exemplary achievement	Resulting band	Exemplary assessment factor	Weighting x factor	Resulting sum
Financial performance and capital & risk	KPI 1	Target	30 %	Green	100-200 %		Green to amber	110 %	33 %	76 %
	KPI 2	Target								
	KPI 3	Target								
	KPI 4	Target								
Culture, control & conduct and franchise	KPI 1	Target	50 %	Green to amber	90-150 %		Green to red	70 %	35 %	
	KPI 2	Target								
	KPI 3	Target		Green to red	60-120 %					
	KPI 4	Target								
	KPI 5	Target		Amber to red	30-90 %					
Innovation & digitalisation	KPI 1	Target	20 %				Amber to red	40 %	8 %	
	KPI 2	Target		Red	0 %					

The Balanced Scorecards are based on financial indicators and non-financial targets in the areas of financial performance, capital & risk, culture, control & conduct, franchise, digitization and innovation. At the beginning of the year, they will be weighted, performance indicators or parameters will be set and, finally, the translation of the degree of achievement into the percentage of achievement will be made transparent. At the same time, they provide an overview of the priorities of the individual divisions across the entire Group. At the end of the performance period, the achievement of each KPI is measured on the basis of predefined targets. The target achievement is represented by the colors green, amber and red in the Balanced Scorecards, which leads to a performance band in the overall view. The performance range is limited by predefined lower and upper limits. The weighting of the different KPI categories relative to each other as well as the relevant KPIs are determined individually by the Supervisory Board at the beginning of the year for each member of the Management Board. A maximum of 200 % of the target can be reached.

The sum of all individual and divisional objectives determine 90 % of the individual component of the STA. The Supervisory Board decides on the remaining portion of 10 % of the individual component to reward outstanding contributions over the course of the financial year making use of its discretionary authority. If, overall, the objectives are not achieved during the period being evaluated, the Supervisory Board may determine that an individual component will not be granted.

Minimum, Target and Maximum Values

The sum of Group-wide and individually agreed objectives amounts to a maximum of 40 % of the total variable compensation, depending on the achievement level of the aforementioned objectives. If, overall, the objectives are not achieved during the period being evaluated, the Supervisory Board may determine that an STA will not be granted.

			2020
in €	Minimum	Target	Maximum
Chairman			
Group component	0	500,000	1,000,000
Individual component	0	1,400,000	2,800,000
STA total[1]	0	1,900,000	3,800,000
Ordinary Board member			
Group component	0	500,000	1,000,000
Individual component (from - up to)	0	800,000	1,600,000
	0	up to 1,100,000	up to 2,200,000
STA total (from - up to)	**0**	1,300,000	2,600,000
	0	up to 1,600,000	up to 3,200,000

[1] STA: Short-Term Award.

Long-Term Award (LTA)

When determining the variable compensation, a clear focus is placed on the achievement of long-term objectives. Therefore, the target figure of the LTA constitutes a portion of no less than 60 % of the total variable target compensation. As with the short-term component, the Supervisory Board determines the collective long-term objectives for the Management Board members. The achievement level is determined on the basis of the definition of clear performance metrics and/or factors which are to be agreed for these objectives at the beginning of a financial year.

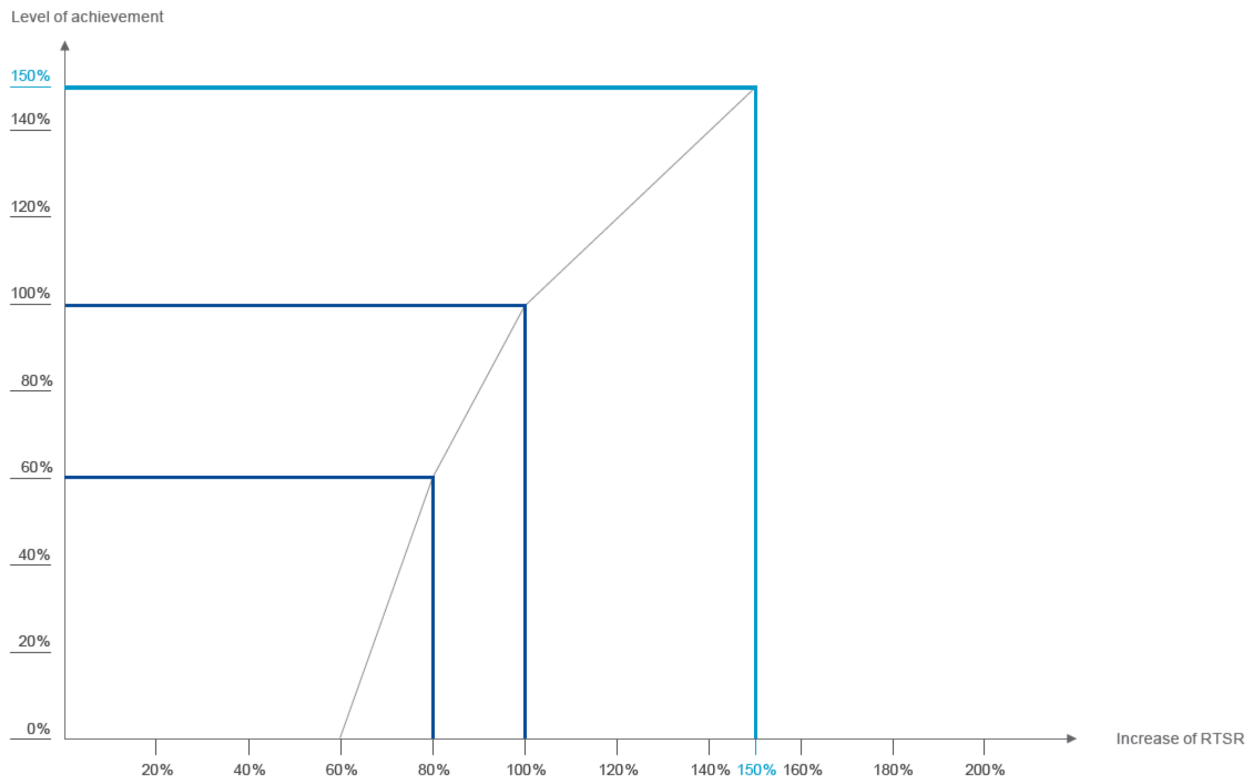
60 % of the variable compensation, as a minimum, relate to the long-term component

The Supervisory Board determined a total of three objectives for each Management Board member. Each shall be measured over a period of three years and shall be included in the valuation of the LTA with a weighting of 60 % for the most recent financial year ended, 30 % for the precending year and 10% for the year before the precending year. In the case of members of the Management Board appointed for the first time within the last three years, who have joined the bank or have not yet completed a corresponding period of time in which they were entrusted with tasks and risks comparable to those of a Management Board member, the retention period of the LTA shall be extended in accordance with regulatory requirements by the reduction period as compensation for the reduced assessment period.

For 2020, the Supervisory Board determined the following three objectives for each Management Board member.

The **relative performance of the Deutsche Bank share** in comparison to selected peer institutions is an objective within the framework of the LTA. This objective is intended to promote the sustainable performance of the Deutsche Bank share. The long-term nature of this objective is supported by the determination of the Relative Total Shareholder Return (RTSR) on the basis of a three-year assessment. The RTSR of Deutsche Bank is derived from the Total Shareholder Return of Deutsche Bank in relation to the average total shareholder returns of a selected peer group (calculated in Euros). If the weighted average of the relative total shareholder return of Deutsche Bank is greater than 100 % over a period of three years, then the value of the RTSR portion increases proportionately to an upper limit of 150 % of the target figure, i.e., the value increases by 1 % for each percentage point above 100 %. If the three-year average of the relative total shareholder return is lower than 100 %, the value declines disproportionately. If the relative total shareholder return is calculated to be in the range of less than 100 % to 80 %, the value of the Award portion is reduced for each lower percentage point by 2 percentage points. In the range between 80 % and 60 %, the value of the Award portion is reduced for each lower percentage point by 3 percentage points. If the three-year average of the RTSR does not exceed 60 %, the value of the Award portion is set to zero.

Increase of RTSR and level of achievement



The peer group used for the calculation of the relative total shareholder return is selected based on the criteria of generally comparable business activities, comparable size and international presence. The Supervisory Board reviews the composition of the peer group regularly.

In 2020, the peer group for the RTSR comprised the following banks:

Peer Group of Deutsche Bank

BNP Paribas	Société Générale	Barclays	Credit Suisse	UBS
Bank of America	Citigroup	JP Morgan Chase	HSBC	

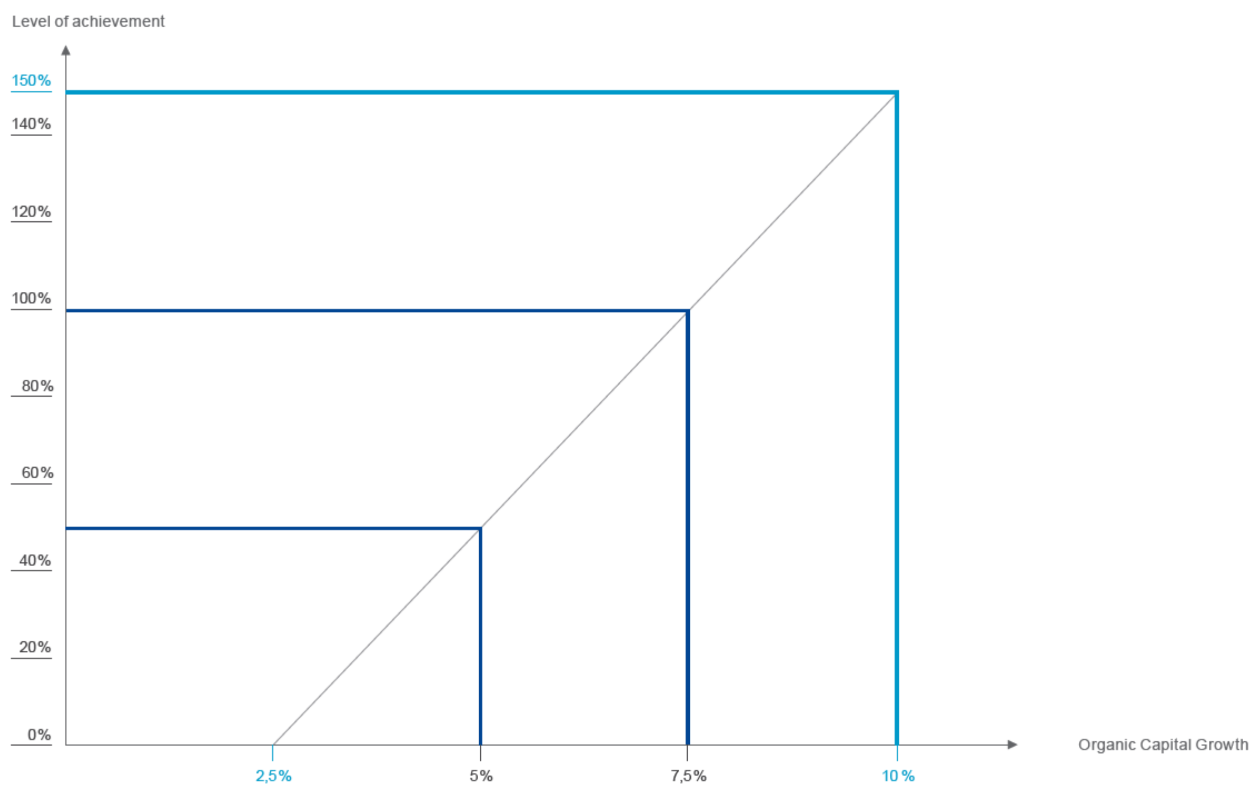
The Supervisory Board sets an objective designed to promote the growing and strengthening of the Bank, based on the notion of actual Organic Capital Growth. Organic Capital Growth is defined as the balance of the following changes (which are also reported in the Consolidated Statement of Changes in Equity) occurring during the financial year, divided by the Deutsche Bank Shareholders Equity attributable as at December 31 of the previous financial year.

- Total comprehensive income, net of tax
- Coupons on additional equity components, net of tax
- Remeasurement gains (losses) related to defined benefit plans, net of tax
- Option premiums and other effects from options on common shares
- Net gains (losses) on treasury shares sold

Consequently, "non-organic" changes in equity, in particular payment of a dividend or capital increase, are of no relevance to the achievement of the objective.

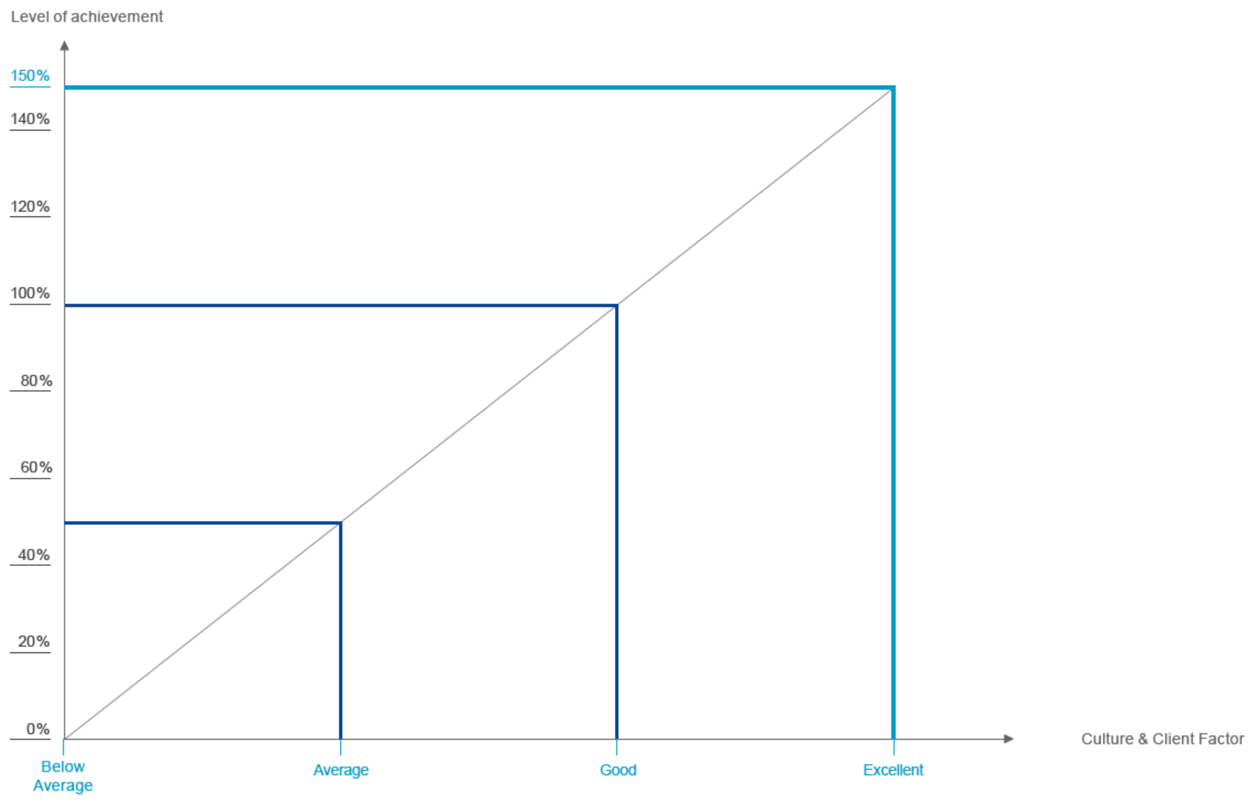
From an average organic capital growth of 2.5 %, the value of the Award share increases on a straight line basis by 1 % for each 0.05 % growth up to the 150 % cap, which is the case with an organic capital growth of 10% or more. If the three-year average remains below 2.5 %, the Award share value is zero.

Development of organic capital growth and level of achievement



The third objective is the “Culture & Client” factor. In this context, the Supervisory Board sets an objective which is linked to corporate culture, client satisfaction and dealing with clients. This objective is linked to the sustainable development of the intrabank environment or designed to foster the development of client relations for the 2020 financial year. One objective set by the Supervisory Board for all Management Board members is – this year again – the evaluation of the control environment within the Deutsche Bank Group and divided this into four equally weighted sub-targets. At the end of the financial year, the achievement of the sub-targets will be assessed as under average, average, good or excellent and the assessment will be translated into a level of achievement of 0-150%.

“Culture & Client” Factor and level of achievement



The Long-Term Award can be a maximum of 150% of the respective target figures.

Maximum Compensation

Total Compensation/Target and Maximum Values

					2020	2019
	Base salary	STA[1]		LTA[2]	Total compensation	Total compensation
in €		Group component	Individual component			
Chairman						
Target	3,400,000	500,000	1,400,000	3,400,000	8,700,000	8,700,000
Maximum	3,400,000	1,000,000	2,800,000	5,100,000	12,300,000	12,300,000
Ordinary Board member (CIB)[3]						
Target	0	0	0	0	0	7,700,000
Maximum	0	0	0	0	0	11,000,000
Ordinary Board member (PB)[4]						
Target	2,400,000	500,000	1,100,000	2,800,000	6,800,000	6,800,000
Maximum	2,400,000	1,000,000	2,200,000	4,200,000	9,800,000	9,800,000
Ordinary Board member (CFO & CRO)[5]						
Target	2,600,000	500,000	800,000	2,800,000	6,700,000	6,500,000
Maximum	2,600,000	1,000,000	1,600,000	4,200,000	9,400,000	9,200,000
Ordinary Board member (Infrastructure/Region)						
Target	2,400,000	500,000	800,000	2,800,000	6,500,000	6,500,000
Maximum	2,400,000	1,000,000	1,600,000	4,200,000	9,200,000	9,200,000

[1] STA: Short-Term Award.
[2] LTA: Long-Term Award.
[3] Annual amounts until July 31, 2019. As of August 2019, the CEO has been responsible for the CB and the IB division, into which CIB was split.
[4] As of August 2019, the President has been responsible for the PB division. His Fixed Pay was 3,000,000 €.
[5] Annual amounts from August 1, 2020 onwards. For the period from January 1 to July 31, 2020, the remuneration was the same as for ordinary Board Members (Infrastructure/Region).

The total compensation of a Management Board member is subject to additional caps. Due to regulatory requirements, the variable compensation is capped at 200 % of the fixed compensation. In addition, the Supervisory Board has in recent years set a cap for the overall total compensation, which will become mandatory in the future due to the German Law implementing the Shareholders' Rights Directive. For the 2020 financial year, the Supervisory Board has again capped compensation at a maximum of € 9.85 million, so that even where the objective achievement level would result in higher compensation, compensation is capped at a maximum of € 9.85 million. This cap is understood to be exclusive of any other benefits and annual service costs related to the pension scheme.

Long-term incentive and sustainability

According to the requirements of the InstVV at least 60 % of the total variable compensation must be granted on a deferred basis. Not less than half of this deferred portion must comprise equity-based compensation components, while the remaining portion is granted as deferred cash compensation. Both compensation components must be deferred over a multi-year period which, for the equity-based compensation components, must be followed by a retention period. During the period until payment or delivery, the compensation portions awarded on a deferred basis may be forfeited. At least half of the maximum of 40 % of the variable compensation granted on a non-deferred basis must consist of equity-based compensation components and only the remaining portion may be paid out directly in cash. Of the total Variable Compensation, no more than a maximum of 20 % may be paid out in cash immediately, while at least 80 % are paid or delivered at a later date.

Since 2014, the total variable compensation for Management Board members is only granted on a deferred basis.

At least 50 % of the variable compensation is granted equity-based

In order to bind the Management Board members even closer to the performance of the Bank and the Deutsche Bank share price, the Supervisory Board decided that as of the 2019 financial year, the long-term component (LTA) will only be granted in the form of Restricted Equity Awards. The short-term component (STA) is generally granted in the form of a cash compensation (Restricted Incentive Awards). However, should the STA amount to more than 50 % of the total variable compensation, the amount exceeding 50 % will also be granted in the form of Restricted Equity Awards. This is designed to

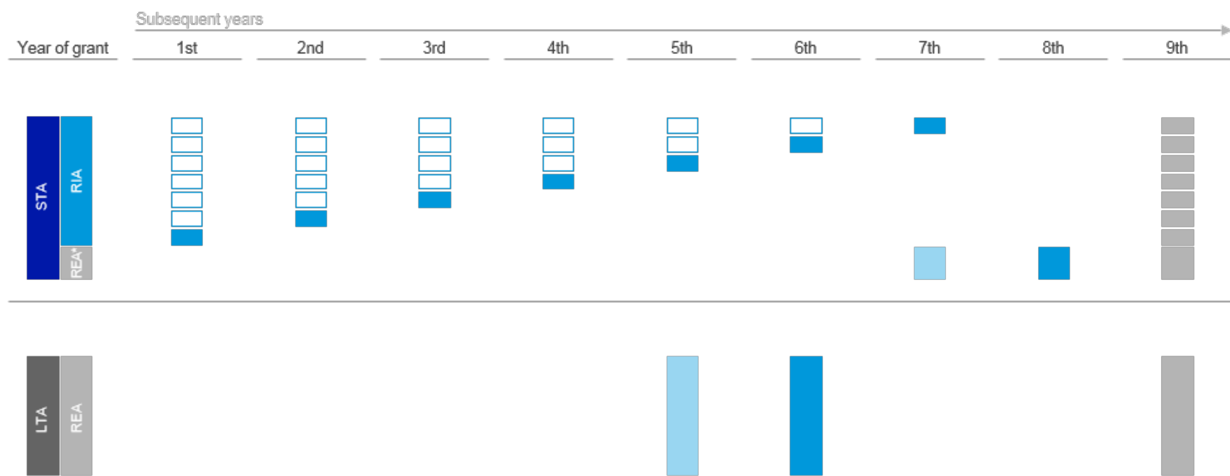
ensure that at least 50 % of total variable compensation are granted in the form of equity-based compensation in accordance with regulatory requirements.

The InstVV requires in principle, that the combined (i) target assessment period and (ii) vesting period are at least eight years. With respect to the vesting schedule, the InstVV allows both, vesting in one tranche (“cliff vesting”) or in consecutive instalments (“tranche vesting”). The LTA is based on a three year assessment period, the Restricted Equity Awards granted for the LTA vest after five years in one tranche. The assessment period for the STA is only one year. Therefore, the Restricted Incentive Awards granted for the STA vest in seven equal tranches over a period of seven years. Any additional Restricted Equity Awards granted for the STA vest also after seven years, but in one tranche. All Restricted Equity Awards have an additional retention period of one year which follows the vesting period. Accordingly, Management Board members are first permitted to dispose of the equities after six or eight years respectively. During the deferral and retention period, the value of the Restricted Equity Awards is linked to the Bank’s share price and is therefore tied to the sustained performance of the Bank. Specific forfeiture provisions apply for Restricted Incentive Awards and Restricted Equity Awards during the deferral and retention period.

Instead of receiving Restricted Equity Awards and Restricted Incentive Awards as described above, specified function holders of certain Deutsche Bank U.S. entities are required by applicable regulation to be compensated under different plans. Restricted compensation for this employee group consists of restricted share awards and restricted cash awards. The employee will be the beneficial owner of the awards from the Award Date and the awards will be held on the employee’s behalf. These awards will be restricted for a period of time (subject to the applicable plan rules and award statements, including performance conditions and forfeiture provisions). The restriction period is aligned with retention periods of the Bank´s usual deferred awards. With regard to the Management Board of Deutsche Bank AG, these rules apply to Christiana Riley as she is identified as such function holder under the described regime.

The following chart shows the time period for the payment or the delivery of the variable compensation components in the seven consecutive years following the grant year as well as the period of a possible clawback.

Timeframe for payment or delivery, non-forfeiture and possibility of clawback for the Management Board



* Only if required to achieve a portion of 50 % shares.
■ Vesting and/or non fortfeiture, aligned with payment or delivery.
■ Vesting followed by a retention period until delivery; subject to individual fortfeiture conditions during the retention period.
■ End of possibility to demand the return ('Clawback') of already paid/delivered compensation components.

Forfeiture conditions / clawback

In order to create long-term incentives, the Restricted Equity Awards and the Restricted Incentive Awards compensation components are deferred or spread out over several years. To this end, the Supervisory Board regularly reviews the results achieved in the past for their sustainability (**back-testing**). If the outcome is that the results rewarded by the granting of the variable compensation were not sustainable, the awards may be partially or fully forfeited.

Also, if the Group result is negative, the awards may be fully or partially forfeited. In addition, the awards may be fully or partially forfeited if specific solvency or liquidity conditions were not met.

Furthermore, awards may be forfeited in whole or in part in the event of individual misconduct (including breaches of regulations), dismissal for cause or negative individual contributions (**malus**).

The contracts of the members of the Management Board contain **"clawback provisions"** and thus meet the requirements of InstVV. Going beyond the forfeiture conditions, this clause allows the Supervisory Board to reclaim already paid or delivered compensation components in response to specific individual negative contributions made by the Management Board member for up to two years after the expiry of the last deferral period.

Limitations in the event of exceptional developments

In the event of exceptional developments, the total compensation for each Management Board member is limited to a certain maximum amount. In addition, the Supervisory Board and the members of the Management Board agreed on a possible limitation of the variable compensation which is included in the service contracts of the Management Board members and according to which the variable compensation may be limited to amounts below the provided maximum amounts or may not be granted altogether. Furthermore, statutory regulations provide that the Supervisory Board may reduce the compensation of the Management Board members to an appropriate level, if the situation of the company deteriorates in such a way following the determination of the compensation that the continued granting of the compensation would be inappropriate for the company. A payment of variable compensation elements will also not take place if the payment of variable compensation components is prohibited or restricted by the competent regulator in accordance with existing statutory requirements.

Shareholding guidelines

All members of the Management Board are required to hold a specified value of Deutsche Bank shares. This requirement fosters the identification of the Management Board members with Deutsche Bank and its shareholders and aims to ensure a sustainable link to the performance of the Bank.

For the Chairman, the number of shares to be held amounts to two times the annual base salary, i.e., the equivalent of € 6,800,000. For other Management Board members, the number of shares to be held is one time the annual base salary, i.e., the equivalent of € 2,400,000 or € 2,600,000, respectively.

The share retention obligations must first be fulfilled on the date on which the Management Board member was granted an overall equity based variable compensation corresponding to 1 ⅓ times the retention obligations since his or her appointment to the Management Board. Deferred equity-based compensation may be taken into account at 75 % of its value towards fulfillment of the obligation.

Observance of the requirement is reviewed semi-annually as of June 30 and December 31. If the required number of shares is not met, the Management Board members have to make up for any deficits by the next review.

Even if a member leaves the Management Board, the deferred compensation components, which have been spread out over several years, ensure that these members are linked to the performance of Deutsche Bank's share over a long period of time.

Pension benefits

The Supervisory Board allocates an entitlement to pension plan benefits to the Management Board members. These entitlements involve a pension plan with predefined contributions. Under this pension plan, a personal pension account is set up for each participating member of the Management Board after appointment to the Management Board.

Management Board members receive a contribution in the form of a contractually agreed fixed annual amount in Euro. The contribution accrues interest credited in advance, determined by means of an age-related factor, at an average rate of 4 % per year up to the age of 60. From the age of 61 onwards, an additional contribution in the amount of 4 % per year of the amount reached on December 31 of the previous year will be credited to the pension account. The Supervisory Board resolved

that the interest for new Management Board members with employment contracts negotiated after January 1, 2020 will be reduced to 2 % p.a.

The annual contributions, taken together, form the pension amount available to pay the future pension benefit in case of a pension event (age limit, disability or death). The pension right is vested from the start.

If a member of the Management Board is subject to the income tax regulations of various countries, whereby the pension component granted is already subject to partial or full taxation at the time it is granted, he or she may choose to receive an annual pension allowance. This option can be exercised once and is valid in principle for the entire Management Board period. The pension allowance is equal to the amount of the annual pension contributions usually foreseen for the member of the Management Board, i.e. currently 650,000 €.

Other benefits upon early termination

The Management Board members are in principle entitled to receive a severance payment upon early termination of their appointment at the Bank's initiative, provided the Bank is not entitled to revoke the appointment or give notice under the contractual agreement for cause. The circumstances of the early termination of the appointment and the length of service on the Management Board are to be taken into account when determining the amount of the severance payment. The severance payment, as a rule, is two annual compensation amounts and is limited to the claims to compensation for the remaining term of the contract. The calculation of the severance payment is based on the annual compensation for the previous financial year and on the expected annual compensation for the current financial year, if applicable. The severance payment is determined and granted in accordance with the statutory and regulatory requirements, in particular with the provisions of the InstVV.

If a Management Board member leaves office in connection with a change of control, he/she is also, under certain conditions, entitled in principle to a severance payment. The exact amount of the severance payment is determined by the Supervisory Board within its sole discretion. According to the German Corporate Governance Codex, the severance payment will not exceed three annual compensation amounts and is limited to the claims to compensation for the remaining term of the contract. The calculation of the compensation is again based on the annual compensation for the previous financial year.

Management Board compensation for the 2020 financial year

Fixed compensation

In the 2020 financial year, the annual base salary was € 3,400,000 for the CEO. and € 3,000,000 for the President. The annual base salaries of the other Management Board members were € 2,400,000 each, with a base salary of the Chief Fi-nancial Officer and the Chief Risk Officer of € 2.600.000 per year, effective from August 1, 2020.

As part of the measurements taken in the context of the COVID-19 crisis, the members of the Management Board agreed to forgo one month`s base salary. Please find an overview on the COVID-19 related measures regarding Management Board compensation in the section "COVID-19 measures / reduction of compensation ("moderation")".

Variable compensation

The Supervisory Board, acting on a proposal of the Compensation Control Committee, determined the variable compensation for the Management Board members for the 2020 financial year. The Supervisory Board calculated and determined the amount of the LTA and the Group component of the STA based on the level of achievement of the respective objectives and/or key performance figures. The individual contribution was assessed by the achievement of the individually agreed targets and taking into account the results of the Balanced Scorecard.

Level of objective achievement

In the 2020 financial year, the development of the four performance metrics for the Group component of the STA was as follows: The 2020 target KPIs for Common Equity Tier 1 capital ratio (CET1), Leverage ratio (please refer to section "Lev-erage Ratio" in the Risk Report for further detail) and Adjusted Cost were achieved or exceeded, so that the degree of achievement of all three performance indicators was 100 %. The Group's return on equity target was positive in 2020, above our plan expectation; however, because the achievement level was only slightly above zero, the degree of achievement for this performance metric was set at 0 %.

Mathematically, this resulted in an overall achievement level for the Group component of 75 % for 2020. As the Management Board decided to reduce the achievement level from 75 % to 72.5 % when determining the Group component as a commitment in light of the crisis situation triggered by the COVID-19 pandemic to exhibit moderation in variable compensation, the Supervisory Board decided on the same reduction for the compensation of the members of the Management Board. As a result thereof, the Supervisory Board decided to set the payout rate for the Group component at 72.5 % (see also paragraph " COVID-19 measures / reduction of compensation (‘moderation’)”).

72.5 % **was the objective achievement level of the STA Group component**

The **individual component of the STA** is linked to the achievement of short-term and medium-term individual and divisional objectives determined for the Management Board members in 2020, including those from the Scorecard. The current Management Board members as of December 31, 2020 had the following objectives:

Christian Sewing

In 2020, Mr. Sewing's main objective was to deliver on DB strategy execution while respecting the timetable ("mile-stones"). The further development of the culture and vision 2025 for Deutsche Bank was another target. In addition, it was his objective to continue to foster team spirit and to empower the leadership team. Finally, he was responsible for developing a bank-wide ESG and sustainable banking strategy. In his responsibility for the Corporate Bank and the Investment Bank, he aimed to deliver on CB/IB strategy execution and to generate sustainable profitability.

Karl von Rohr

Mr. von Rohr’s objectives for 2020 included: the implementation of the Private Bank strategy, including efficiency and growth measures and to generate sustainable profitability. In his role as Chairman of the Supervisory Board of DWS KGaA, one important aspect was to drive the implementation of the DWS strategy. As President of Deutsche Bank AG and CEO Germany, it was his priority to support the CEO, especially in Germany, in particular in political and economic affairs and with core client relationships in Germany on Group level. He also provided oversight of the Legal function until July 31. Finally, he was to support the CEO in fostering a culture of team spirit, accountability and integrity.

Fabrizio Campelli

Mr. Campelli’s objectives included developing and driving a bank-wide transformation roadmap, including the establishment of a Transformation Office tasked with supporting the effective execution of the Bank’s strategy. Another objective was to drive better client centricity across the Bank, as well as costs and complexity reduction, including through the cost catalyst program. As responsible Board Member for Human Resources, he was tasked with providing oversight to HR transformation as well as supporting the new global head of HR in his transition into Deutsche Bank. He was also asked to support the CEO in fostering a culture of accountability, integrity and team spirit.

Frank Kuhnke

As responsible Board Member for the Capital Release Unit (CRU), Mr. Kuhnke's objectives included optimizing capital usage (RWA), leverage exposure, costs and divestment losses within agreed time frames and loss targets. Furthermore, the implementation of the Know-Your-Client regulatory remedial measures for the Corporate Bank and the Investment Bank as well as for the CRU was on the agenda for 2020. To ensure stability and increase efficiency, the implementation of specific measures was agreed. In the EMEA region, one of its objectives until mid-2020 was to provide oversight to this region e.g. with regard to key control matters and client engagement. In addition, he supported the CEO in fostering a culture of team spirit, ownership and integrity.

Bernd Leukert

The main objective for Mr. Leukert was to drive the IT strategy execution. He should also continuously improve DB’s tech and data estate. Driving product and service innovation across the bank was another objective. He was to support the CEO in fostering a culture of team spirit, accountability and integrity.

Stuart Lewis

As Chief Risk Officer, Mr. Lewis was mandated to ensure operational resilience and proactive risk management during the prevailing operating and market environment. He was also tasked to implement further changes to the risk and compliance operating model, achieving planned efficiencies. Mr. Lewis objectives also included delivery on a portfolio of core transformation initiatives to enhance the effectiveness and efficiency of controls. As the Management Board member responsible for the UK, he had to oversee activities and stakeholder relationships for the region, including implementation of the Brexit program. He also supported the CEO in fostering team spirit and delivering cultural initiatives regarding accountability and integrity.

James von Moltke

A key objective for Mr. von Moltke in 2020 was to ensure that the Group's financial plan is executed through appropriately managing the Group's performance. A further focus was to drive investor and Rating Agencies engagement. Mr. von Moltke was in charge of the continued optimization of the DB Group balance sheet in terms of both assets and liabilities and equity. The execution of the Group Finance strategy, including Financial & Analytics enhancement, was another objective. He was to support the CEO in fostering a culture of team spirit, accountability and integrity.

Alexander von zur Mühlen

When joining the Management Board on August 1, 2020, the strengthening of the APAC franchise and client focus was an objective for Mr. von zur Mühlen. The execution on the APAC strategy was another objective. Finally, he was to support the CEO in fostering a culture of team spirit, accountability and integrity.

Christiana Riley

Mrs. Riley's objectives included the execution on the Americas strategy. A further focus has been put on addressing U.S. regulators' requirements and trustful interaction with them. Her objectives included supporting the CEO in fostering a culture of team spirit, accountability and integrity.

Prof. Dr. Stefan Simon

Since joining the Management Board on August 1, 2020, one of Mr. Simon's objectives was to further drive down the bank-wide litigation portfolio. Improvement of the strategic engagement with regulatory authorities and governments was an objective that Mr. Simon had for the area of Government & Regulatory Affairs (GRAD), for which he was responsible. In addition, he was responsible for the targeted reorganization of processes for the definition and implementation of policies. Another objective was to support the CEO in fostering a culture of team spirit, accountability and integrity.

The individual level of achievement of the Management Board members in 2020 is between 104 % and 175 %.

104 % -175 % was the objective achievement level of the STA individual component

The three key performance indicators of the **LTA** developed as follows in fiscal year 2020: In 2020, the RTSR achieved a significant improvement compared to the previous year. In 2020, Deutsche Bank's share price increased by more than 29% and developed better than any other bank of the peer group. In the relevant three-year period (2018 to 2020), the RTSR achievement level was at 114 % compared to 54 % in the previous year. Organic capital growth, as defined, has been negative between 2018 and 2020; this resulted in an achievement of 0%. The strengthening of the control environment has been assessed over three years on the basis of feedback from the internal audit and supervisory authorities; the achievement was 37.5% over the three-year period. This results in an overall achievement of 54 % for the LTA decided by the Supervisory Board. Bernd Leukert and Stefan Simon were appointed to Management Board in 2020 but had already joined the bank in 2019, so two years were available as reference period. The overall target achievement for the LTA derived is also 54 %.

54 % was the LTA objective achievement level

COVID-19 measures / reduction of compensation ("moderation")

The target achievement levels for the STA as well as the LTA set by the Supervisory Board and presented above result in a total variable compensation of **€30,168,330** for the entire Management Board for the 2020 financial year.

In the light of the crisis situation triggered by the COVID-19 pandemic, the European Supervisory Authority ECB has formulated the expectation that credit institutions exercise moderation with regard to the payment of variable remuneration for the 2020 financial year.

Against this background, the total compensation for the entire Management Board for the 2020 financial year was reduced by a total of **€4,624,140**.

This was implemented by reducing the group component of the STA from 75 % to 72.5 %. In addition, the total compensation for the 2020 financial year was reduced by one twelfth (i.e. one month´s total compensation including base salary). The Chairman of the Supervisory Board joined by also reducing his compensation by one twelfth (please also see the ´Supervisory Board Report and Disclosure´).

Total compensation

The members of the Management Board collectively received in/for the 2020 financial year compensation (exclusive of fringe benefits and pension service costs) totaling € 50,020,069 (2019: € 35,994,279). € 22,473,664 (2019: € 22,700,000) of this amount was for fixed compensation. € 27,546,405 (2019: € 13,294,279) was received for performance-related compo-nents with long-term incentives.

The Supervisory Board determined the aforementioned compensation on an individual basis for 2020 and 2019 as follows:

	2020					2019
	Base salary	STA[1]		LTA[2]	Total compensation	Total compensation
in €		Group component	Individual component			
Christian Sewing	3,116,667	332,292	2,246,475	1,672,611	7,368,045	5,031,717
Karl von Rohr	2,750,000	332,292	1,422,758	1,377,445	5,882,495	4,396,708
Fabrizio Campelli[3]	2,200,000	332,292	1,269,400	1,377,445	5,179,137	632,785
Frank Kuhnke	2,200,000	332,292	850,667	1,377,445	4,760,403	3,796,708
Bernd Leukert[4]	2,200,000	332,292	986,700	1,390,278	4,909,270	–
Stuart Lewis	2,283,333	332,292	986,333	1,377,445	4,979,403	3,796,708
James von Moltke	2,283,333	332,292	1,269,400	1,377,445	5,262,470	3,796,708
Alexander von zur Mühlen[5]	963,189	138,454	381,944	573,935	2,057,522	–
Christiana Riley[4]	2,193,809	332,292	869,367	1,377,445	4,772,912	–
Prof. Dr. Stefan Simon[5]	1,000,000	138,454	406,389	579,283	2,124,126	–
Werner Steinmüller[7]	1,283,333	193,836	443,606	803,509	2,724,286	3,796,708
Sylvie Matherat[7]	–	–	–	–	–	2,588,079
Garth Ritchie[7]	–	–	–	–	–	4,968,079
Frank Strauß[7]	–	–	–	–	–	3,190,079
Total	**22,473,664**	**3,129,080**	**11,133,039**	**13,284,286**	**50,020,069**	35,994,279

[1] STA: Short-Term Award.
[2] LTA: Long-Term Award.
[3] Member since November 1, 2019.
[4] Member since January 1, 2020.
[5] Member since August 1, 2020.
[6] Member until July 31, 2020.
[7] Member until July 31, 2019.

The employment contracts of the Management Board members contain an obligation of the members to ensure that any remuneration they may claim in their capacity as a member of any body, in particular a supervisory board, advisory board or similar body of any group entity of the Bank (§ 18 of the German Stock Corporation Act (Aktiengesetz – AktG)) will not accrue to them. Accordingly, Management Board members did not receive any compensation for mandates on boards of Deutsche Bank subsidiaries.

Share awards

The number of share awards granted to the members of the Management Board in the form of Restricted Equity Awards (REA) in 2021 for the 2020 financial year was calculated by dividing the respective amounts in Euro by the higher of both, the average Xetra closing price of the Deutsche Bank share during the last ten trading days in February 2021 or the Xetra closing price on February 26, 2021 (€ 10.2140).

Members of the Management Board

Units	Year	Restricted Equity Award(s) (deferred with additional retention period)
Christian Sewing	2020	208,115[1]
	2019	144,392
Karl von Rohr	2020	153,343[2]
	2019	118,911
Fabrizio Campelli[3]	2020	145,836[4]
	2019	19,819
Frank Kuhnke	2020	134,859
	2019	118,911
Bernd Leukert[5]	2020	136,115[6]
Stuart Lewis	2020	134,859
	2019	118,911
James von Moltke	2020	145,836[7]
	2019	118,911
Alexander von zur Mühlen[7]	2020	56,191
Christiana Riley[5]	2020	134,859
Prof. Dr. Stefan Simon[7]	2020	56,715[10]
Werner Steinmüller[8]	2020	78,667
	2019	118,911
Sylvie Matherat	2019	69,365
Garth Ritchie	2019	79,589[13]
Frank Strauß	2019	97,045[14]

[1] Thereof 44,359 shares are attributable to the STA, which vest after 7 years.
[2] Thereof 18,485 shares are attributable to the STA, which vest after 7 years.
[3] Member since November 1, 2019.
[4] Thereof 10,977 shares are attributable to the STA, which vest after 7 years.
[5] Member since January 1, 2020.
[6] Thereof 38.890 shares, which vest after 7 years.
[7] Thereof 10,977 shares are attributable to the STA, which vest after 7 years.
[8] Member since August 1, 2020.
[9] Member since January 1, 2020. As a specified functionholder of certain Deutsche Bank US entities, specific plan rules are applicable for Christiana Riley; please see the respective disclosure in section ´Long-term Incentive and Sustainability`.
[10] Thereof 16.204 shares, which vest after 7 years.
[11] Member until July 31, 2020.
[12] Member until July 31, 2019.
[13] Thereof 10,224 shares are attributable to the STA, which vest after 7 year.
[14] Thereof 27,680 shares are attributable to the STA, which vest after 7 year.

Management Board share ownership, shareholding guidelines

As of February 19, 2021 and January 31, 2020, respectively, the current members of the Management Board held Deutsche Bank shares as presented below:

Members of the Management Board		Number of shares
Christian Sewing	2021	163,665
	2020	114,892
Karl von Rohr	2021	17,283
	2020	9,803
Fabrizio Campelli[1]	2021	86,303
	2020	50,417
Frank Kuhnke	2021	37,922
	2020	15,407
Bernd Leukert[2]	2021	1,500
	2020	1,500
Stuart Lewis	2021	174,434
	2020	145,743
James von Moltke	2021	68,486
	2020	55,959
Alexander von zur Mühlen[3]	2021	270,333
Christiana Riley[2]	2021	55,082
	2020	43,907
Prof. Dr. Stefan Simon[3]	2021	0
Total	**2021**	**875,008**
	2020	437,628

[1] Member since November 1, 2019.
[2] Member since January 1, 2020.
[3] Member since August 1, 2020.

The current members of the Management Board held an aggregate of 875,008 Deutsche Bank shares on February 19, 2021, amounting to approximately 0.04 % of Deutsche Bank shares issued on that date.

The following table shows the number of outstanding share awards of the current Management Board members as of January 31, 2020 and February 19, 2021 as well as the number of share awards newly granted, delivered or forfeited in this period.

Members of the Management Board	Balance as of Jan 31, 2020	Granted	Delivered	Forfeited	Balance as of 19 Feb 2021
Christian Sewing	365,416	144,392	24,693	–	485,115
Karl von Rohr	289,373	118,911	15,433	–	392,851
Fabrizio Campelli[1]	296,795	127,751	67,636	78,306[4]	278,603
Frank Kuhnke	196,399	118,911	42,866	33,181[4]	239,263
Bernd Leukert[2]	0	25,309	–	–	25,309
Stuart Lewis	283,470	118,911	54,239	–	348,142
James von Moltke	335,369	118,911	23,767	–	430,513
Alexander von zur Mühlen[3]	–	–	–	–	251,256
Christiana Riley[2]	255,057	64,802[5]	51,483[6]	52,536[4]	215,841[7]
Prof. Dr. Stefan Simon[3]	–	–	–	–	31,740

[1] Member since November 1, 2019.
[2] Member since January 1, 2020.
[3] Member since August 1, 2020.
[4] The awards listed in the table above as ´Forfeited´are equity-based awards granted under the Key Retention Plan in January 2017. These awards were subject to an additional share price condition and were forfeited as a result of this condition not being met. Please also see the section Share-Based Compensation Plans.
[5] Under the associated plan, 64,802 restricted share awards originally granted were taxed at the time of grant, with 34,590 shares remaining on an after-tax basis. Please see the respective disclosure in section ´Long-term Incentive and Sustainability`.
[6] Thereof a number of 30,212 share awards delivered to cover the tax amount due under the associated plan (see footnote 5).
[7] Thereof a net number of 34,590 restricted share awards under the associated plan (see footnote 5).

All Management Board members fulfilled the retention obligations for shares in 2020 or are currently in the waiting period.

The Chairman of the Management Board, Mr. Sewing, voluntarily committed to invest 15 % of his net salary in Deutsche Bank shares from September 2019 until the end of December 2022. In each case, purchases took place on the 22nd day of each month or on the following trading day. All shares purchased by February 19, 2021 are included in the above table.

Pension benefits

The following table shows the annual contributions, the interest credits, the account balances and the annual service costs for the years 2020 and 2019 as well as the corresponding defined benefit obligations for each member of the Management Board in office in 2020 as of December 31, 2020 and December 31, 2019. The different balances are attributable to the different lengths of service on the Management Board, the respective age-related factors, and the different contribution rates, as well as the individual pensionable compensation amounts and the previously mentioned additional individual entitlements.

Members of the Management Board	Annual contribution, in the year		Interest credit, in the year		Account balance, end of year		Service cost (IFRS), in the year		Present value of the defined benefit obligation (IFRS), end of year	
in €	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Christian Sewing	936,000	975,000	0	0	5,742,500	4,806,500	936,063	939,695	5,816,960	4,701,381
Karl von Rohr	786,500	812,500	0	0	3,967,001	3,180,501	831,427	819,511	4,205,087	3,261,910
Fabrizio Campelli[1]	1,046,500	180,918	0	0	1,227,418	180,918	1,008,742	174,626	1,224,209	178,170
Frank Kuhnke	845,000	871,000	0	0	1,716,000	871,000	867,588	849,657	1,759,798	868,111
Bernd Leukert[2]	1,135,334[5]	0	0	0	1,135,334	0	851,694	0	1,181,299	0
Stuart Lewis	786,500	812,500	0	0	5,657,938	4,871,438	818,838	819,511	6,358,878	5,536,127
James von Moltke	903,500	936,000	0	0	3,318,250	2,414,750	895,972	907,600	3,385,498	2,382,139
Alexander von zur Mühlen[3]	0	0	0	0	0	0	0	0	0	0
Christina Riley[2]	0	0	0	0	0	0	0	0	0	0
Prof. Dr. Stefan Simon[3]	1,293,501[5]	0	0	0	1,293,501	0	903,039	0	1,335,674	0
Werner Steinmüller[4]	379,167	650,000	51,719	60,251	2,647,405	2,216,519	380,305	667,193	2,660,574	2,259,433

[1] Member since November 1, 2019.
[2] Member since January 1, 2020.
[3] Member since August 1, 2020.
[4] Member until July 31, 2020.
[5] This also includes amounts granted for the period prior to appointment as a member of the Management Board.

Expense for long-term incentive components

The following table presents the compensation expense recognized in the respective years for long-term incentive components of compensation granted for service on the Management Board.

Members of the Management Board				Amount expensed for
	Share-based compensation components		Cash-based compensation components	
in €	2020	2019	2020	2019
Christian Sewing	887,894	226,040	372,347	380,022
Karl von Rohr	661,926	163,938	293,690	275,911
Fabrizio Campelli[1]	23,935	0	14,024	0
Frank Kuhnke	143,607	0	84,140	0
Bernd Leukert[2]	0	0	0	0
Stuart Lewis	351,726	472,969	278,156	255,458
James von Moltke	644,657	156,957	293,690	275,911
Alexander von zur Mühlen[3]	0	0	0	0
Christina Riley[2]	0	0	0	0
Prof. Dr. Stefan Simon[3]	0	0	0	0
Werner Steinmüller[4]	2,936,877	144,494	655,935	243,186

[1] Member since November 1, 2019.
[2] Member since January 1, 2020.
[3] Member since August 1, 2020.
[4] Member until July 31, 2020.

Compensation in accordance with the German Corporate Governance Code (GCGC)

The compensation for the members of the Management Board in accordance with the requirements of section 4.2.5 paragraph 3 of the GCGC 2017 is provided below. This comprises the benefits granted for the year under review including the fringe benefits and including the maximum and minimum achievable compensation for variable compensation components. In addition, the payment and delivery, as the case may be of fixed compensation and variable compensation (broken down by Restricted Incentive Awards and Restricted Equity Awards) in/for the year under review, broken down into the relevant reference years are reported.

The following table provides the compensation granted for the 2020 and 2019 financial years according to GCGC 2017:

						Christian Sewing
				2020		2019
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	3,116,667	3,400,000	3,400,000	3,400,000	3,400,000	3,400,000
Fixed pay allowance	0	0	0	0	0	0
Fringe benefits (fixed compensation)	3,756	3,756	3,756	3,756	69,338	69,338
Total	**3,120,423**	**3,403,756**	**3,403,756**	**3,403,756**	3,469,338	3,469,338
Variable compensation	4,251,378	5,300,000	0	8,900,000	1,631,717	5,300,000
thereof:						
Restricted Incentive Awards	2,125,689	1,900,000	0	3,800,000	300,000	1,900,000
Restricted Equity Awards	2,125,689[1]	3,400,000	0	5,100,000	1,331,717	3,400,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**4,251,378**	**5,300,000**	**0**	**8,900,000**	1,631,717	5,300,000
Pension service costs	936,063	936,063	936,063	936,063	939,695	939,695
Total compensation (GCGC)	**8,307,864**	**9,639,819**	**4,339,819**	**13,239,819**	6,040,750	9,709,033
Total compensation[2]	**7,368,045**	**8,700,000**	**3,400,000**	**12,300,000**	5,031,717	8,700,000

[1] Thereof Restricted Equity Awards in the amount of € 453,078 that are attributable to the STA and vest after 7 years.
[2] Without fringe benefits and pension service costs.

						Karl von Rohr
				2020		2019
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,750,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Fixed pay allowance	0	0	0	0	0	0
Fringe benefits (fixed compensation)	11,208	11,208	11,208	11,208	43,642	43,642
Total	**2,761,208**	**3,011,208**	**3,011,208**	**3,011,208**	3,043,642	3,043,642
Variable compensation	3,132,495	4,400,000	0	7,400,000	1,396,708	4,225,000
thereof:						
Restricted Incentive Awards	1,566,247	1,600,000	0	3,200,000	300,000	1,425,000
Restricted Equity Awards	1,566,248[1]	2,800,000	0	4,200,000	1,096,708	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**3,132,495**	**4,400,000**	**0**	**7,400,000**	1,396,708	4,225,000
Pension service costs	831,427	831,427	831,427	831,427	819,511	819,511
Total compensation (GCGC)	**6,725,130**	**8,242,635**	**3,842,635**	**11,242,635**	5,259,861	8,088,153
Total compensation[2]	**5,882,495**	**7,400,000**	**3,000,000**	**10,400,000**	4,396,708	7,225,000

[1] Thereof Restricted Equity Awards in the amount of € 188,803 that are attributable to the STA and vest after 7 years.
[2] Without fringe benefits and pension service costs.

						Fabrizio Campelli[1]
				2020		2019
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,200,000	2,400,000	2,400,000	2,400,000	400,000	400,000
Fixed pay allowance	0	0	0	0	–	–
Fringe benefits (fixed compensation)	21,984	21,984	21,984	21,984	8,182	8,182
Total	**2,221,984**	**2,421,984**	**2,421,984**	**2,421,984**	408,182	408,182
Variable compensation	2,979,137	4,100,000	0	6,800,000	232,785	683,333
thereof:						
Restricted Incentive Awards	1,489,568	1,300,000	0	2,600,000	50,000	216,667
Restricted Equity Awards	1,489,569[2]	2,800,000	0	4,200,000	182,785	466,667
Fringe benefits (variable compensation)	0	0	0	0	–	–
Total	**2,979,137**	**4,100,000**	**0**	**6,800,000**	232,785	683,333
Pension service costs	1,008,742	1,008,742	1,008,742	1,008,742	174,626	174,626
Total compensation (GCGC)	**6,209,863**	**7,530,726**	**3,430,726**	**10,230,726**	815,593	1,266,141
Total compensation[3]	**5,179,137**	**6,500,000**	**2,400,000**	**9,200,000**	632,785	1,083,333

[1] Member since November 1, 2019.
[2] Thereof Restricted Equity Awards in the amount of € 112,124 that are attributable to the STA and vest after 7 years.
[3] Without fringe benefits and pension service costs.

						Frank Kuhnke
				2020		2019
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,200,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000
Fixed pay allowance	0	0	0	0	–	–
Fringe benefits (fixed compensation)	6,692	6,692	6,692	6,692	29,580	29,580
Total	**2,206,692**	**2,406,692**	**2,406,692**	**2,406,692**	2,429,580	2,429,580
Variable compensation	2,560,403	4,100,000	0	6,800,000	1,396,708	4,100,000
thereof:						
Restricted Incentive Awards	1,182,958	1,300,000	0	2,600,000	300,000	1,300,000
Restricted Equity Awards	1,377,445	2,800,000	0	4,200,000	1,096,708	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	–	–
Total	**2,560,403**	**4,100,000**	**0**	**6,800,000**	1,396,708	4,100,000
Pension service costs	867,588	867,588	867,588	867,588	849,657	849,657
Total compensation (GCGC)	**5,634,683**	**7,374,280**	**3,274,280**	**10,074,280**	4,675,945	7,379,237
Total compensation[1]	**4,760,403**	**6,500,000**	**2,400,000**	**9,200,000**	3,796,708	6,500,000

[1] Without fringe benefits and pension service costs.

						Bernd Leukert[1]
				2020		2019
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,200,000	2,400,000	2,400,000	2,400,000	–	–
Fixed pay allowance	0	0	0	0	–	–
Fringe benefits (fixed compensation)	21,926	21,926	21,926	21,926	–	–
Total	**2,221,926**	**2,421,926**	**2,421,926**	**2,421,926**	–	–
Variable compensation	2,709,270	4,100,000	0	6,800,000	–	–
thereof:						
Restricted Incentive Awards	1,318,992	1,300,000	0	2,600,000	–	–
Restricted Equity Awards	1,390,278[2]	2,800,000	0	4,200,000	–	–
Fringe benefits (variable compensation)	0	0	0	0	–	–
Total	**2,709,270**	**4,100,000**	**0**	**6,800,000**	–	–
Pension service costs	851,694	851,694	851,694	851,694	–	–
Total compensation (GCGC)	**5,782,890**	**7,373,620**	**3,273,620**	**10,073,620**	–	–
Total compensation[3]	**4,909,270**	**6,500,000**	**2,400,000**	**9,200,000**	–	–

[1] Member since January 1, 2020.
[2] Thereof Restricted Equity Awards in the amount of € 397,222 that vest after 7 years.
[3] Without fringe benefits and pension service costs.

Stuart Lewis

in €	2020 Determined	2020 Target	2020 Min	2020 Max	2019 Determined	2019 Target
Fixed compensation (base salary)	2,283,333	2,483,333	2,483,333	2,483,333	2,400,000	2,400,000
Fixed pay allowance	0	0	0	0	0	0
Fringe benefits (fixed compensation)	29,166	29,166	29,166	29,166	312,607	312,607
Total	**2,312,499**	**2,512,499**	**2,512,499**	**2,512,499**	2,712,607	2,712,607
Variable compensation	2,696,070	4,100,000	0	6,800,000	1,396,708	4,100,000
thereof:						
Restricted Incentive Awards	1,318,625	1,300,000	0	2,600,000	300,000	1,300,000
Restricted Equity Awards	1,377,445	2,800,000	0	4,200,000	1,096,708	2,800,000
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**2,696,070**	**4,100,000**	**0**	**6,800,000**	1,396,708	4,100,000
Pension service costs	818,838	818,838	818,838	818,838	819,511	819,511
Total compensation (GCGC)	**5,827,407**	**7,431,337**	**3,331,337**	**10,131,337**	4,928,826	7,632,118
Total compensation[1]	**4,979,403**	**6,583,333**	**2,483,333**	**9,283,333**	3,796,708	6,500,000

[1] Without fringe benefits and pension service costs.

James von Moltke

in €	2020 Determined	2020 Target	2020 Min	2020 Max	2019 Determined	2019 Target
Fixed compensation (base salary)	2,283,333	2,483,333	2,483,333	2,483,333	2,400,000	2,400,000
Fixed pay allowance	0	0	0	0	0	0
Fringe benefits (fixed compensation)	42,980	42,980	42,980	42,980	310,510	310,510
Total	**2,326,313**	**2,526,313**	**2,526,313**	**2,526,313**	2,710,510	2,710,510
Variable compensation	2,979,137	4,100,000	0	6,800,000	1,396,708	4,100,000
thereof:						
Restricted Incentive Awards	1,489,568	1,300,000	0	2,600,000	300,000	1,300,000
Restricted Equity Awards	1,489,569[1]	2,800,000	0	4,200,000	1,096,708	2,800,000
Fringe benefits (variable compensation)	615,516	615,516	615,516	615,516	615,516	615,516
Total	**3,594,653**	**4,715,516**	**615,516**	**7,415,516**	2,012,224	4,715,516
Pension service costs	895,972	895,972	895,972	895,972	907,600	907,600
Total compensation (GCGC)	**6,816,938**	**8,137,801**	**4,037,801**	**10,837,801**	5,630,334	8,333,626
Total compensation[2]	**5,262,470**	**6,583,333**	**2,483,333**	**9,283,333**	3,796,708	6,500,000

[1] Thereof Restricted Equity Awards in the amount of € 112,124 that are attributable to the STA and vest after 7 years.
[2] Without fringe benefits and pension service costs.

Alexander von zur Mühlen[1]

in €	2020 Determined	2020 Target	2020 Min	2020 Max	2019 Determined	2019 Target
Fixed compensation (base salary)	963,189[2]	1,000,000	1,000,000	1,000,000	–	–
Fixed pay allowance	270,833	270,833	270,833	270,833	–	–
Fringe benefits (fixed compensation)	14,851	14,851	14,851	14,851	–	–
Total	**1,248,873**	**1,285,684**	**1,285,684**	**1,285,684**	–	–
Variable compensation	1,094,333	1,708,333	0	2,833,333	–	–
thereof:						
Restricted Incentive Awards	520,398	541,666	0	1,083,332	–	–
Restricted Equity Awards	573,935	1,166,667	0	1,750,001	–	–
Fringe benefits (variable compensation)	33,304	33,304	33,304	33,304	–	–
Total	**1,127,637**	**1,741,637**	**33,304**	**2,866,637**	–	–
Pension service costs	0	0	0	0	–	–
Total compensation (GCGC)	**2,376,510**	**3,027,321**	**1,318,988**	**4,152,321**	–	–
Total compensation[3]	**2,057,522**	**2,708,333**	**1,000,000**	**3,833,333**	–	–

[1] Member since August 1, 2020.
[2] As the fixed compensation is granted in local currency, it is subject to FX-rate changes. The waiver of 1/12th of the base salary took place prior to the appointment to the Management Board.
[3] Without fixed pay allowance and fringe benefits.

	Christiana Riley[1]					
	2020				2019	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	2,193,809[2]	2,400,000	2,400,000	2,400,000	–	–
Fixed pay allowance	650,000	650,000	650,000	650,000	–	–
Fringe benefits (fixed compensation)	94,530	94,530	94,530	94,530	–	–
Total	**2,938,339**	**3,144,530**	**3,144,530**	**3,144,530**	**–**	**–**
Variable compensation	2,579,103	4,100,000	0	6,800,000	–	–
thereof:						
Restricted Incentive Awards	1,201,658	1,300,000	0	2,600,000	–	–
Restricted Equity Awards	1,377,445	2,800,000	0	4,200,000	–	–
Fringe benefits (variable compensation)	95,643	95,643	95,643	95,643	–	–
Total	**2,674,746**	**4,195,643**	**95,643**	**6,895,643**	**–**	**–**
Pension service costs	0	0	0	0	–	–
Total compensation (GCGC)	**5,613,085**	**7,340,173**	**3,240,173**	**10,040,173**	**–**	**–**
Total compensation[3]	**4,772,912**	**6,500,000**	**2,400,000**	**9,200,000**	**–**	**–**

[1] Member since January 1, 2020. As a specified functionholder of certain Deutsche Bank US entities, specific plan rules are applcable for Christiana Riley; please see the respective disclosure in section ´Long-term Incentive and Sustainability`.
[2] As the fixed compensation is granted in local currency, it is subject to FX-rate changes.
[3] Without fixed pay allowance and fringe benefits.

	Prof. Dr. Stefan Simon[1]					
	2020				2019	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	1,000,000[2]	1,000,000	1,000,000	1,000,000	–	–
Fixed pay allowance	0	0	0	0	–	–
Fringe benefits (fixed compensation)	7,354	7,354	7,354	7,354	–	–
Total	**1,007,354**	**1,007,354**	**1,007,354**	**1,007,354**	**–**	**–**
Variable compensation	1,124,126	1,708,333	0	2,833,333	–	–
thereof:						
Restricted Incentive Awards	544,843	541,666	0	1,083,332	–	–
Restricted Equity Awards	579,283[3]	1,166,667	0	1,750,001	–	–
Fringe benefits (variable compensation)	0	0	0	0	–	–
Total	**1,124,126**	**1,708,333**	**0**	**2,833,333**	**–**	**–**
Pension service costs	903,039	903,039	903,039	903,039	–	–
Total compensation (GCGC)	**3,034,519**	**3,618,726**	**1,910,393**	**4,743,726**	**–**	**–**
Total compensation[4]	**2,124,126**	**2,708,333**	**1,000,000**	**3,833,333**	**–**	**–**

[1] Member since August 1, 2020.
[2] The waiver of 1/12th of the base salary took place prior to the appointment to the Management Board.
[3] Thereof Restricted Equity Awards in the amount of € 165,509 that vest after 7 years.
[4] Without fringe benefits and pension service costs.

	Werner Steinmüller[1]					
	2020				2019	
in €	Determined	Target	Min	Max	Determined	Target
Fixed compensation (base salary)	1,283,333	1,400,000	1,400,000	1,400,000	2,400,000	2,400,000
Fringe benefits (fixed compensation)	31,620	31,620	31,620	31,620	68,463	68,463
Total	**1,314,953**	**1,431,620**	**1,431,620**	**1,431,620**	2,468,463	2,468,463
Variable compensation	1,440,953	2,391,667	0	3,966,668	1,396,708	4,100,000
thereof:						
Restricted Incentive Awards	637,444	758,334	0	1,516,668	300,000	1,300,000
Restricted Equity Awards	803,509	1,633,333	0	2,450,000	1,096,708	2,800,000
Fringe benefits (variable compensation)	322,542	322,542	322,542	322,542	510,033	510,033
Total	**1,763,495**	**2,714,209**	**322,542**	**4,289,210**	1,906,741	4,610,033
Pension service costs	380,305	380,305	380,305	380,305	667,193	667,193
Total compensation (GCGC)	**3,458,753**	**4,494,514**	**1,986,180**	**6,069,515**	5,042,397	7,745,689
Total compensation[2]	**2,724,286**	**3,791,667**	**1,400,000**	**5,366,668**	3,796,708	6,500,000

[1] Member until July 31, 2020.
[2] Without fringe benefits and pension service costs.

Sylvie Matherat[1]

in €	2020 Determined	2020 Target	2020 Min	2020 Max	2019 Determined	2019 Target
Fixed compensation (base salary)	0	0	0	0	1,400,000	1,400,000
Fringe benefits (fixed compensation)	0	0	0	0	4,636	4,636
Total	**0**	**0**	**0**	**0**	1,404,636	1,404,636
Variable compensation	0	0	0	0	1,188,079	2,391,667
thereof:						
Restricted Incentive Awards	0	0	0	0	548,333	758,333
Restricted Equity Awards	0	0	0	0	639,746	1,633,333
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	1,188,079	2,391,667
Pension service costs	0	0	0	0	0	0
Total compensation (GCGC)	**0**	**0**	**0**	**0**	2,592,715	3,796,303
Total compensation[2]	**0**	**0**	**0**	**0**	2,588,079	3,791,667

[1] Member until July 31, 2019.
[2] Without fringe benefits and pension service costs.

Garth Ritchie[1]

in €	2020 Determined	2020 Target	2020 Min	2020 Max	2019 Determined	2019 Target
Fixed compensation (base salary)	0	0	0	0	1,750,000	1,750,000
Functional allowance	0	0	0	0	1,750,000	1,750,000
Fringe benefits (fixed compensation)	0	0	0	0	267,834	267,834
Total	**0**	**0**	**0**	**0**	3,767,834	3,767,834
Variable compensation	0	0	0	0	1,468,079	2,741,667
thereof:						
Restricted Incentive Awards	0	0	0	0	734,039	1,108,333
Restricted Equity Awards[2]	0	0	0	0	734,040	1,633,333
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	1,468,079	2,741,667
Pension service costs	0	0	0	0	0	0
Total compensation (GCGC)	**0**	**0**	**0**	**0**	5,235,913	6,509,501
Total compensation[3]	**0**	**0**	**0**	**0**	3,218,079	4,491,667

[1] Member until July 31, 2019.
[2] Thereof Restricted Equity Awards in the amount of € 94,294 that are attributable to the STA and vest after 7 years.
[3] Without functional allowance fringe benefits and pension service costs.

Frank Strauß[1]

in €	2020 Determined	2020 Target	2020 Min	2020 Max	2019 Determined	2019 Target
Fixed compensation (base salary)	0	0	0	0	1,400,000	1,400,000
Fringe benefits (fixed compensation)	0	0	0	0	35,253	35,253
Total	**0**	**0**	**0**	**0**	1,435,253	1,435,253
Variable compensation	0	0	0	0	1,790,079	2,566,667
thereof:						
Restricted Incentive Awards	0	0	0	0	895,039	933,333
Restricted Equity Awards[2]	0	0	0	0	895,040	1,633,333
Fringe benefits (variable compensation)	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	1,790,079	2,566,667
Pension service costs	0	0	0	0	545,325	545,325
Total compensation (GCGC)	**0**	**0**	**0**	**0**	3,770,657	4,547,245
Total compensation[3]	**0**	**0**	**0**	**0**	3,190,079	3,966,667

[1] Member until July 31, 2019.
[2] Thereof Restricted Equity Awards in the amount of € 255,294 that are attributable to the STA and vest after 7 years.
[3] Without fringe benefits and pension service costs.

The following table provides the compensation payments and deliveries in/for the 2020 and 2019 financial years according to GCGC 2017

	Christian Sewing		Karl von Rohr		Fabrizio Campelli[1]		Frank Kuhnke	
in €	2020	2019	2020	2019	2020	2019	2020	2019
Fixed compensation	3,116,667	3,400,000	2,750,000	3,000,000	2,200,000	400,000	2,200,000	2,400,000
Functional allowance	0	0	0	0	0	–	0	–
Fixed pay allowance	0	0	0	0	0	–	0	–
Fringe benefits (fixed compensation)	3,756	69,338	11,208	43,642	21,984	8,182	6,692	29,580
Total	**3,120,423**	3,469,338	**2,761,208**	3,043,642	**2,221,984**	408,182	**2,206,692**	2,429,580
Variable compensation	232,061	0	168,625	0	0	–	0	–
thereof Cash:	0	0	0	0	0	–	0	–
thereof Restricted Incentive Awards:								
2015 Restricted Incentive Award for 2014	0	0	0	0	0	–	0	–
2017 Restricted Incentive Award: Sign On	0	0	0	0	0	–	0	–
2017 Restricted Incentive Award: Buyout	0	0	0	0	0	–	0	–
2019 Restricted Incentive Award for 2018	232,061	–	168,625	0	0	0	0	–
thereof Equity Awards:								
2017 Equity Upfront Award: Sign On	0	0	0	0	0	–	0	–
2014 Restricted Equity Award for 2013	0	0	0	0	0	–	0	–
2015 DB Equity Plan for 2014	0	0	0	0	0	–	0	–
2017 Restricted Equity Award: Buyout	0	0	0	0	0	–	0	–
Fringe benefits (variable compensation)	0	0	0	0	0	–	0	–
Total	**232,061**	0	**168,625**	0	**0**	–	**0**	–
Pension service costs	936,063	939,695	831,427	819,511	1,008,742	174,626	867,588	849,657
Total compensation (GCGC)	**4,288,547**	4,409,033	**3,761,260**	3,863,153	**3,230,726**	582,808	**3,074,280**	3,279,237

[1] Member since November 1, 2019.

	Bernd Leukert[1]		Stuart Lewis		James von Moltke		Alexander von zur Mühlen[2]	
in €	2020	2019	2020	2019	2020	2019	2020	2019
Fixed compensation	2,200,000	–	2,283,333	2,400,000	2,283,333	2,400,000	963,189[3]	–
Functional allowance	0	–	0	0	0	0	0	–
Fixed pay allowance	0	–	0	0	0	0	270,833	–
Fringe benefits (fixed compensation)	21,926	–	29,166	312,607	42,980	310,510	14,851	–
Total	**2,221,926**	–	**2,312,499**	2,712,607	**2,326,313**	2,710,510	**1,248,873**	–
Variable compensation	0	–	599,399	704,736	693,011	951,953	0	–
thereof Cash:	0	–	0	0	0	0	0	–
thereof Restricted Incentive Awards:								
2015 Restricted Incentive Award for 2014	0	–	0	105,340	0	0	0	–
2017 Restricted Incentive Award: Sign On	0	–	0	0	66,638	66,638	0	–
2017 Restricted Incentive Award: Buyout	0	–	0	0	280,379	420,568	0	–
2019 Restricted Incentive Award for 2018	0	–	156,125	0	168,625	0	0	–
thereof Equity Awards:								
2017 Equity Upfront Award: Sign On	0	–	0	0	0	183,170	0	–
2014 Restricted Equity Award for 2013	0	–	0	599,396	0	0	0	–
2015 DB Equity Plan for 2014	0	–	443,274	0	0	0	0	–
2017 Restricted Equity Award: Buyout	0	–	0	0	177,369	281,577	0	–
Fringe benefits (variable compensation)	0	–	0	0	615,516	615,516	33,304	–
Total	**0**	–	**599,399**	704,736	**1,308,527**	1,567,469	**33,304**	–
Pension service costs	851,694	–	818,838	819,511	895,972	907,600	0	–
Total compensation (GCGC)	**3,073,620**	–	**3,730,736**	4,236,854	**4,530,812**	5,185,579	**1,282,177**	–

[1] Member since January 1, 2020.
[2] Member since August 1, 2020.
[3] As the fixed compensation is granted in local currency, it is subject to FX-rate changes. The waiver of 1/12th of the base salary took place prior to the appointment to the Management Board.

in €	Christiana Riley[1] 2020	Christiana Riley[1] 2019	Prof. Dr. Stefan Simon[2] 2020	Prof. Dr. Stefan Simon[2] 2019	Werner Steinmüller[3] 2020	Werner Steinmüller[3] 2019	Sylvie Matherat[4] 2020	Sylvie Matherat[4] 2019
Fixed compensation	2,193,809[5]	–	1,000,000[6]	–	1,283,333	2,400,000	0	1,400,000
Functional allowance	0	–	0	–	0	0	0	0
Fixed pay allowance	650,000	–	0	–	0	0	0	0
Fringe benefits (fixed compensation)	94,530	–	7,354	–	31,620	68,463	0	4,636
Total	**2,938,339**	–	**1,007,354**	–	**1,314,953**	2,468,463	**0**	1,404,636
Variable compensation	0	–	0	–	148,625	0	0	0
thereof Cash:	0	–	0	–	0	0	0	0
thereof Restricted Incentive Awards:								
2015 Restricted Incentive Award for 2014	0	–	0	–	0	0	0	0
2017 Restricted Incentive Award: Sign On	0	–	0	–	0	0	0	0
2017 Restricted Incentive Award: Buyout	0	–	0	–	0	0	0	0
2019 Restricted Incentive Award for 2018	0	–	0	–	148,625	0	0	0
thereof Equity Awards:								
2017 Equity Upfront Award: Sign On	0	–	0	–	0	0	0	0
2014 Restricted Equity Award for 2013	0	–	0	–	0	0	0	0
2015 DB Equity Plan for 2014	0	–	0	0	0	281,577	0	–
2017 Restricted Equity Award: Buyout	0	–	0	–	0	0	0	0
Fringe benefits (variable compensation)	95,643	–	0	–	322,542	510,033	0	0
Total	**95,643**	–	**0**	–	**471,167**	510,033	**0**	0
Pension service costs	0	–	903,039	–	380,305	667,193	0	0
Total compensation (GCGC)	**3,033,982**	–	**1,910,393**	–	**2,166,425**	3,645,689	**0**	1,404,636

[1] Member since January 1, 2020.
[2] Member since August 1, 2020.
[3] Member until July 31, 2020.
[4] Member until July 31, 2019.
[5] As the fixed compensation is granted in local currency, it is subject to FX-rate changes.
[6] The waiver of 1/12th of the base salary took place prior to the appointment to the Management Board.

in €	Garth Ritchie[1] 2020	Garth Ritchie[1] 2019	Frank Strauß[1] 2020	Frank Strauß[1] 2019
Fixed compensation	0	1,750,000	0	1,400,000
Functional allowance	0	1,750,000	0	0
Fixed pay allowance	0	0	0	0
Fringe benefits (fixed compensation)	0	267,834	0	35,253
Total	**0**	3,767,834	**0**	1,435,253
Variable compensation	0	0	0	0
thereof Cash:	0	0	0	0
thereof Restricted Incentive Awards:				
2015 Restricted Incentive Award for 2014	0	0	0	0
2017 Restricted Incentive Award: Sign On	0	0	0	0
2017 Restricted Incentive Award: Buyout	0	0	0	0
2019 Restricted Incentive Award for 2018				
thereof Equity Awards:				
2017 Equity Upfront Award: Sign On	0	0	0	0
2014 Restricted Equity Award for 2013	0	0	0	0
2015 DB Equity Plan for 2014	0	–	0	0
2017 Restricted Equity Award: Buyout	0	0	0	0
Fringe benefits (variable compensation)	0	0	0	0
Total	**0**	0	**0**	0
Pension service costs	0	0	0	545,325
Total compensation (GCGC)	**0**	3,767,834	**0**	1,980,578

[1] Member until July 31, 2019.

With respect to deferred awards scheduled to be delivered in the first quarter of 2021, the Supervisory Board has confirmed that the performance conditions for the financial year 2020 have been met.

Compensation in accordance with the German Accounting Standard No. 17 (GAS 17)

In accordance with the requirements of the GAS 17, the members of the Management Board collectively received in the 2020 financial year compensation totaling € 40,119,062 (2019: € 34,835,009). Of that, € 22,473,664 (2019: € 20,950,000) was for fixed compensation, € 0 (2019: € 1,750,000) for functional allowances, € 920,833 (2019: 0 €) for fixed pay allowances, € 1,353,072 (2019: € 2,275,594) for fringe benefits and € 15,371,493 (2019: € 9,859,415) for performance-related components.

In accordance with German Accounting Standard No. 17, the Restricted Incentive Awards, as a deferred, non-equity-based compensation component subject to certain (forfeiture) conditions, must be recognized in the total compensation for the year of their payment (i.e. in the financial year in which the unconditional payment takes place) and not in the year they are originally granted. Based thereon, the Management Board members individually received the following compensation components for their service on the Management Board for or in the years 2020 and 2019, including the non-performance-related fringe benefits.

Compensation according to GAS 17

	Christian Sewing		Karl von Rohr		Fabrizio Campelli[1]		Frank Kuhnke	
in €	2020	2019	2020	2019	2020	2019	2020	2019
Compensation								
Performance-related components								
Without long-term incentives								
Immediately paid out	0	0	0	0	0	0	0	0
With short-term incentives								
Cash	0	0	0	0	0	0	0	0
With long-term incentives								
Cash-based								
Restricted Incentive Award(s) paid	232,061	0	168,625	0	0	0	0	0
Share-based								
Restricted Equity Award(s)	2,125,689[2]	1,331,717	1,566,248[3]	1,096,708	1,489,569[4]	182,785	1,377,445	1,096,708
Non-performance-related components								
Base salary	3,116,667	3,400,000	2,750,000	3,000,000	2,200,000	400,000	2,200,000	2,400,000
Functional allowance	0	0	0	0	0	0	0	0
Fixed pay allowance	0	0	0	0	0	0	0	0
Fringe benefits (fixed and variable)	3,756	69,338	11,208	43,642	21,984	8,182	6,692	29,580
Total	**5,478,173**	4,801,055	**4,496,081**	4,140,350	**3,711,553**	590,967	**3,584,137**	3,526,288

[1] Member since November 1, 2019.
[2] Thereof Restricted Equity Awards in the amount of € 453,078 that are attributable to the STA and vest after 7 years.
[3] Thereof Restricted Equity Awards in the amount of € 188,803 that are attributable to the STA and vest after 7 years.
[4] Thereof Restricted Equity Awards in the amount of € 112,124 that are attributable to the STA and vest after 7 years.

	Bernd Leukert[1]		Stuart Lewis		James von Moltke		Alexander von zur Mühlen[2]	
in €	2020	2019	2020	2019	2020	2019	2020	2019
Compensation								
Performance-related components								
Without long-term incentives								
Immediately paid out	0	–	0	0	0	0	0	–
With short-term incentives								
Cash	0	–	0	0	0	0	0	–
With long-term incentives								
Cash-based								
Restricted Incentive Award(s) paid	0	–	156,125	105,340	515,642	487,207	0	–
Share-based								
Restricted Equity Award(s)	1,390,278	–	1,377,445	1,096,708	1,489,569[3]	1,096,708	573,935	–
Non-performance-related components								
Base salary	2,200,000	–	2,283,333	2,400,000	2,283,333	2,400,000	963,189[4]	–
Functional allowance	0	–	0	0	0	0	0	–
Fixed pay allowance	0	–	0	0	0	0	270,833	–
Fringe benefits (fixed and variable compensation)	21,926	–	29,166	312,607	658,496	926,026	48,155	–
Total	**3,612,204**	–	**3,846,069**	3,914,655	**4,947,040**	4,909,941	**1,856,112**	–

[1] Member since January 1, 2020.
[2] Member since August 1, 2020.
[3] Thereof Restricted Equity Awards in the amount of € 112,124 that are attributable to the STA and vest after 7 years.
[4] As the fixed compensation is granted in local currency, it is subject to FX-rate changes. The waiver of 1/12th of the base salary took place prior to the appointment to the Management Board.

in €	Christiana Riley[1] 2020	Christiana Riley[1] 2019	Prof. Dr. Stefan Simon[2] 2020	Prof. Dr. Stefan Simon[2] 2019	Werner Steinmüller[3] 2020	Werner Steinmüller[3] 2019	Sylvie Matherat[4] 2020	Sylvie Matherat[4] 2019
Compensation								
Performance-related components								
Without long-term incentives								
Immediately paid out	0	–	0	–	0	0	0	0
With short-term incentives								
Cash	0	–	0	–	0	0	0	0
With long-term incentives								
Cash-based								
Restricted Incentive Award(s) paid	0	–	0	–	148,625	0	0	0
Share-based								
Restricted Equity Award(s)	1,377,445	–	579,283	–	803,509	1,096,708	0	639,746
Non-performance-related components								
Base salary	2,193,809[5]	–	1,000,000[6]	–	1,283,333	2,400,000	0	1,400,000
Functional allowance	0	–	0	–	0	0	0	0
Fixed pay allowance	650,000	–	0	–	0	0	0	0
Fringe benefits (fixed and variable compensation)	190,173	–	7,354	–	354,162	578,496	0	4,636
Total	**4,411,427**	–	**1,586,637**	–	**2,589,629**	4,075,204	**0**	2,044,382

[1] Member since January 1, 2020. As a specified functionholder of certain Deutsche Bank US entities, specific plan rules are applcable for Christiana Riley; please see the respective disclosure in section ´Long-term Incentive and Sustainability`.
[2] Member since August 1, 2020.
[3] Member until July 31, 2020.
[4] Member until July 31, 2019.
[5] As the fixed compensation is granted in local currency, it is subject to FX-rate changes.
[6] The waiver of 1/12th of the base salary took place prior to the appointment to the Management Board.

in €	Garth Ritchie[1] 2020	Garth Ritchie[1] 2019	Frank Strauß[1] 2020	Frank Strauß[1] 2019	Total 2020	Total 2019
Compensation						
Performance-related components						
Without long-term incentives						
Immediately paid out	0	0	0	0	0	0
With short-term incentives						
Cash	0	0	0	0	0	0
With long-term incentives						
Cash-based						
Restricted Incentive Award(s) paid	0	0	0	0	1,221,078	592,547
Share-based						
Restricted Equity Award(s)	0	734,040[2]	0	895,040[3]	14,150,415	9,266,868
Non-performance-related components						
Base salary	0	1,750,000	0	1,400,000	22,473,664	20,950,000
Functional allowance	0	1,750,000	0	0	0	1,750,000
Fixed pay allowance	0	0	0	0	920,833	0
Fringe benefits (fixed and variable compensation)	0	267,834	0	35,253	1,353,072	2,275,594
Total	**0**	4,501,874	**0**	2,330,293	**40,119,062**	34,835,009

[1] Member until July 31, 2019.
[2] Thereof Restricted Equity Awards in the amount of € 94,294 that are attributable to the STA and vest after 7 years.
[3] Thereof Restricted Equity Awards in the amount of € 255,294 that are attributable to the STA and vest after 7 years.

With respect to deferred awards scheduled to be delivered in the first quarter of 2021, the Supervisory Board has confirmed that the performance conditions for the 2020 financial year have been met.

Outlook: Further development of the compensation system from 2021 onwards

The current system for the compensation of Management Board members was approved by the 2017 Annual General Meeting with a large majority of around 97 %. The structure of the compensation system has proven itself since then, and its application shows that the targets anchored in it set the right incentives and lead to appropriate results ("pay for performance").

The compensation system will be resubmitted to the 2021 Annual General Meeting for approval in accordance with § 120a (1) of the German Stock Corporation Act (AktG) in order to take into account the changed regulatory requirements resulting from the entry into force of ARUG II (Act Implementing the Second Shareholders' Rights Directive).

Aim of the adjustments

The Supervisory Board took the upcoming vote on the compensation system as an opportunity to comprehensively review and develop further the current structure. As a result, adjustments were made that serve to structure the compensation components in such a way that they lead to even greater uniformity and transparency with regard to the compensation structures and weighting of the components. In the context of promoting good corporate governance and sustainable corporate development, ESG objectives in particular will be given even greater consideration in the performance criteria in the future. In order to closely link the compensation to the long-term development of the company, the level of share ownership will be promoted further in accordance with the ambitious Deutsche Bank Shareholding Guidelines. The alignment of the interests of the Management Board with those of the shareholders will thus be significantly strengthened.

Since the previous design and application of the system has overall worked well and was always in line with the statutory regulatory requirements, the basic structure of the Management Board compensation remains unchanged, except for the aforementioned adjustments. Where necessary, other components of the Management Board compensation system have been adjusted to the changed regulatory framework conditions; in particular, the requirements of Section 87a of the German Stock Corporation Act (AktG), the Remuneration Ordinance for Institutions (Institutsvergütungsverordnung) and the recommendations of the revised German Corporate Governance Code (DCGK 2020) have been taken into account. Within the framework of consistent management of compensation outcomes (consequence management), regular backtesting will be performed and the necessary instruments to correct or reverse undesired outcomes will continue to be used, in particular in the form of forfeiture, malus and clawback provisions. The continuation of the deferral and retention periods ensures that only sustainable successes are rewarded and through the availability of forfeiture, malus and clawback provisions, as well as the shareholding guidelines, the compensation granted is closely linked to the company's success even for a number of years after a member of the Management Board has left the company. In the event of a change of control, a severance payment will no longer be available and a simple special termination right will continue to apply instead.

Target structure from January 2021

	Compensation components	Maximum	Deferrals	
Variable	**Short Term Award** Group objectives (Assessment period = 1 year) — 20 % Individual objectives — 10 % Individual Balanced Scorecards — 10 % Annual priorities	150 %	— Cash-based[1] — 7 year vesting	subject to: Forfeiture provisions Clawback provisions
	Long Term Award Individual objectives (Assessment period = 3 years) — 20 % ESG Factor — 15 % Relative Total Shareholder Return — 15 % Organic capital growth — 10 % Group component		— Equity based — 5 year vesting — 1 year retention period	
Fix	Base salary	100 %		
	Pension contributions; Fringe benefits			

[1] Unless Supervisory Board decides to grant (portions of) STA in individual cases in equity to meet Shareholding Guidelines' requirements

In particular, three areas requiring action were identified, resulting in the following adjustments to the compensation system:

1. Increasing the portion of share-based variable compensation to up to 100 % in the interest of full compliance with the Shareholding Guidelines

The portion of share-based variable compensation can be increased in relation to cash compensation for individual members of the Management Board until the DB Shareholding Guidelines are fulfilled, especially for members who are new to the Management Board and do not yet hold any shares or hardly any shares of the company. Until the shareholding obligation according to the Guidelines is fulfilled by each member of the Management Board, the Supervisory Board is given the option to temporarily increase the portion of share-based variable compensation to up to 100% for individual Management Board members concerned. This is a moderate way to achieve the desired level of the shareholding obligation in the coming years without increasing the complexity of the compensation system at the same time.

2. Increasing transparency and consistency of variable compensation components

The variable compensation is to be made clearer and more transparent through the setting of a fixed ratio of the target values of the two variable compensation components and the alignment of the maximum target achievement of both variable compensation components. In the future, the target values of the Short Term Award and the Long Term Award will account for 40% and 60%, as the case may be, of the total variable compensation for each Management Board member. The maximum target achievement for the Short Term Award and the Long Term Award will be harmonized and set at 150% for both components (instead of previously 200% for the Short Term Award). Furthermore, the fact that all individual targets will relate to the Short Term Award and all group targets will relate to the Long Term Award leads to a further increase in transparency and reduction of complexity with regard to the target structure. Overall, the adjustment of the compensation system will lead to a reduction in the total amount of achievable variable compensation.

3. Linking the sustainability strategy to variable compensation by implementing ESG objectives

Since 2000, Deutsche Bank has joined numerous sustainability programs and signed renowned voluntary commitments. For example, Deutsche Bank has been committed to the ten principles of the United Nations Global Compact, the goals of the Paris Climate Agreement, the Climate Commitment of the German banking industry, the UN Principles for Responsible Banking and the Equator Principles for many years. Sustainability issues are actively promoted and supported with memberships in the Banking Environment Initiative (BEI), the Sustainability Finance Advisory Council of the German Federal Government, the Finance Initiative of the UN Environment Programme (UNEP FI) and participation in the ECB's pilot project on climate intensity. Deutsche Bank has bundled and expanded the management and monitoring of sustainability aspects within the Group-wide Sustainability Council established in 2018 and expanded this with the Sustainability Committee established last year.

Taking responsible action for the protection of the climate and biodiversity, adopting resource-saving business practices and assuming responsibility towards society by the Bank is seen as an important contribution to corporate success. Aspects of employee diversity and satisfaction as well as good corporate governance have been part of the Management Board's compensation for some time.

An important goal of the further development of the compensation system is therefore linking Deutsche Bank's ESG sustainability strategy with the objectives of the Management Board and thus the compensation of the Management Board. Last year, the Supervisory Board and the Management Board further strengthened the Bank's sustainability commitment by linking the compensation of the Management Board and other top executives to additional non-financial sustainability criteria and objectives from 2021. Several ESG targets were added to the variable compensation components, such as a target volume for sustainable financing/ESG investments and a reduction of electricity consumption in the Bank's buildings. The Culture & Client Factor with its governance objectives was expanded to include environmental and social aspects and will in future be merged into a so-called ESG Factor. The degree of achievement of the ESG factor will be measured within the framework of a Deutsche Bank-specific matrix on the basis of various selected goals from the areas of environment, social and governance. These targets can be set and monitored ambitiously by the Bank. The ESG factor will be included in the Long Term Award with a share of 20% of the total long-term variable compensation.

The following table provides an overview of the changes in the compensation structure applicable from 2021 compared to the previous compensation system.

Overview of changes in the compensation system

MB Compensation until FY 2020	Components	MB Compensation from FY 2021
— **Inconsistent** ratio of fixed to variable compensation — **Blurred** ratio of LTA and STA	Compensation structure	— **Consistent** ratio of fixed to variable compensation — **Uniform** ratio of LTA (60%) and STA (40%)
— **Group and individual objectives** (Weighting in % of variable compensation) — **9 - 12%** Group component — **2 - 18%** Individual objectives — **6 - 9%** Individual Balanced Scorecards (consisting of financial and non-financial performance indicators) — **2 - 3%** Limited discretion — Maximum achievement: **200%**	Short Term Award (STA)	— **Individual objectives** (Weighting in % of variable compensation) — **20%** Individual objectives — **10%** Individual Balanced Scorecards (consisting of financial and non-financial performance indications supplemented by ESG objectives) — **10%** Annual priorities — Maximum achievement: **150%**
— **Three** Group objectives (Weighting in % of variable compensation) — **20 - 23%** Client & Culture Factor — **20 - 23%** Relative Total Shareholder Return — **20 - 23%** Organic Capital Growth — Vesting of Restricted Equity Awards after 5 years in one Tranche („**Cliff Vesting**")	Long Term Award (LTA)	— **Four** Group objectives (Weighting in % of variable compensation) — **20%** ESG-Factor — **15%** Relative Total Shareholder Return — **15%** Organic Capital Growth — **10%** Group component (CET1-Ratio / Leverage Ratio / Adjusted Costs / RoTE) — Vesting of Restricted Equity Awards over a period of five years in equal trances („**Tranche Vesting**")
— STA is generally granted in cash	Shareholding Guidelines	— STA is generally still granted in cash — **Additional option** for the Supervisory Board to also grant the STA and thus the complete variable compensation an a **share-based** basis
— Special termination right for the members of the MB — Entitlement to severance pay	Change of Control	— Special termination right for the MB — **No claim** for severance pay

Employee compensation report

The content of the 2020 Employee Compensation Report is based on the qualitative and quantitative remuneration disclosure requirements outlined in Article 450 No. 1 (a) to (i) Capital Requirements Regulation (CRR) in conjunction with Section 16 of the Remuneration Ordinance for Institutions (*Institutsvergütungsverordnung* – InstVV).

This Compensation Report takes a group-wide view and covers all consolidated entities of the Deutsche Bank Group. In accordance with regulatory requirements, equivalent reports for 2020 are prepared for the following Significant Institutions within Deutsche Bank Group: BHW Bausparkasse AG, Germany; Deutsche Bank Luxembourg S.A., Luxembourg; Deutsche Bank S.p.A., Italy; Deutsche Bank Mutui S.p.A., Italy; Deutsche Bank S.A.E., Spain.

Regulatory environment

Ensuring compliance with regulatory requirements is an overarching consideration in our Group Compensation Strategy. We strive to be at the forefront of implementing regulatory requirements with respect to compensation and will continue to work closely with our prudential supervisor, the European Central Bank (ECB), to be in compliance with all existing and new requirements.

As an EU-headquartered institution, Deutsche Bank is subject to the Capital Requirements Regulation / Capital Requirements Directive (CRR / CRD) globally, as transposed into German national law in the German Banking Act and InstVV. We adopted the rules in its current version for all of Deutsche Bank's subsidiaries and branches world-wide to the extent required in accordance with Section 27 InstVV. As a Significant Institution within the meaning of InstVV, Deutsche Bank identifies all employees whose work is deemed to have a material impact on the overall risk profile (Material Risk Takers or MRTs) in accordance with criteria stipulated under the Commission Delegated Regulation (EU) No. 604/2014. MRTs are identified at a Group level and at the level of Significant Institutions.

Taking into account more sector-specific legislation and in accordance with InstVV, some of Deutsche Bank's subsidiaries (in particular within the DWS Group) fall under the local transpositions of the Alternative Investments Fund Managers Directive (AIFMD) or the Undertakings for Collective Investments in Transferable Securities Directive (UCITS). We also identify MRTs in these subsidiaries. Identified employees are subject to the remuneration provisions outlined in the Guidelines on sound remuneration policies under AIFMD/UCITS published by the European Securities and Markets Authority (ESMA).

Deutsche Bank takes into account the regulations targeted at employees who engage directly or indirectly with the bank's clients, for instance as per the local transpositions of the Markets in Financial Instruments Directive II – MiFID II. Accordingly, we have implemented specific provisions for employees deemed to be Relevant Persons to ensure that they act in the best interest of our clients.

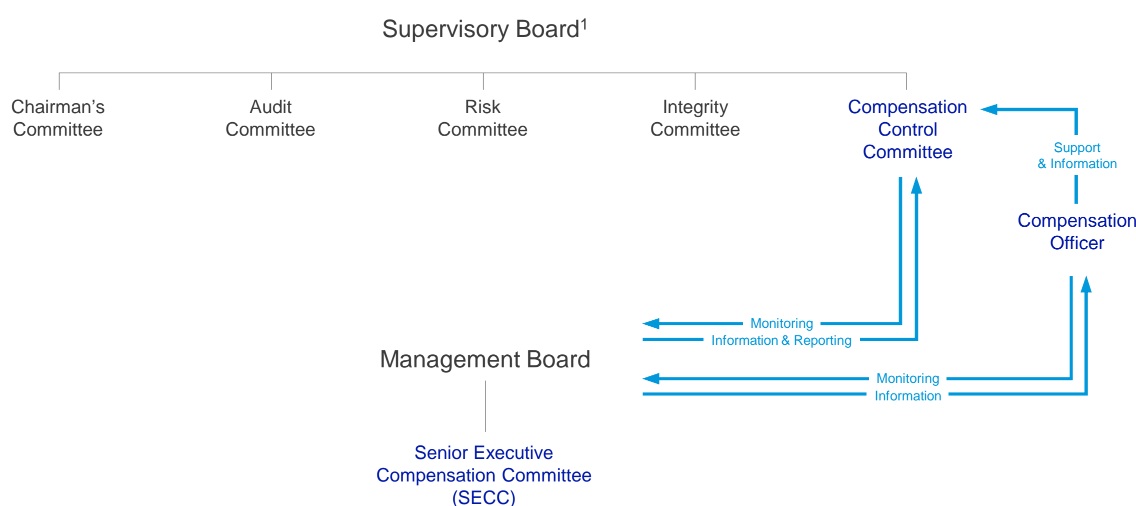
Where applicable, Deutsche Bank is also subject to specific rules and regulations implemented by local regulators. Many of these requirements are aligned with the InstVV. However, where deviations exist, proactive and open discussions with regulators have enabled us to follow the local regulations whilst ensuring that any impacted employees or locations remain within the bank's overall Group Compensation Framework. This includes, for example, the identification of Covered Employees in the United States under the requirements of the Federal Reserve Board. In any case, we apply the InstVV requirements as minimum standards globally.

Compensation governance

Deutsche Bank has a robust governance structure enabling it to operate within the clear parameters of its Compensation Strategy and Compensation Policy. In accordance with the German two-tier board structure, the Supervisory Board governs the compensation of the Management Board members while the Management Board oversees compensation matters for all other employees in the Group. Both the Supervisory Board and the Management Board are supported by specific committees and functions, in particular the Compensation Control Committee (CCC), the Compensation Officer, and the Senior Executive Compensation Committee (SECC).

In line with their responsibilities, the bank's control functions are involved in the design and application of the bank's remuneration systems, in the identification of MRTs and in determining the total amount of VC. This includes assessing the impact of employees' behavior and the business-related risks, performance criteria, granting of remuneration and severance payments as well as ex-post risk adjustments.

Reward Governance structure



[1] Does not comprise a complete list of Supervisory Board Committees.

Compensation Control Committee (CCC)

The Supervisory Board has set up the CCC to support it in establishing and monitoring the structure of the compensation system for the Management Board members of Deutsche Bank AG, considering, in particular, the effects on the risks and risk management in accordance with the InstVV. Furthermore, the CCC monitors the appropriateness of the compensation systems for the employees of Deutsche Bank Group, as established by the Management Board and the SECC. The CCC checks regularly whether the total amount of variable compensation is affordable and set in accordance with the InstVV. The CCC also assesses the impact of the compensation systems on the management of risk, capital and liquidity, and seeks to ensure that the compensation systems are aligned with the business and risk strategies. Furthermore, the CCC supports the Supervisory Board in monitoring the MRT identification process and whether the internal control functions and the other relevant areas are properly involved in the structuring of the compensation systems.

The CCC consists of the Chairperson of the Supervisory Board and five further Supervisory Board members, three of whom are employee representatives. The CCC held seven meetings in the calendar year 2020. The members of the Risk Committee attended two meetings as guests. Further details can be found in the Report of the Supervisory Board within the Annual Report.

Compensation Officer

The Management Board, in cooperation with the CCC, has appointed a Group Compensation Officer to support the Supervisory Board of Deutsche Bank AG and the supervisory boards of the bank's Significant Institutions in Germany in performing their compensation related duties. The Compensation Officer is involved in the conceptual review, development, monitoring and application of the employees' compensation systems on an ongoing basis. The Compensation Officer performs his monitoring obligations independently and provides an assessment of the appropriateness of the design and practices of the compensation systems for employees at least annually. He supports and advises the CCC regularly.

Senior Executive Compensation Committee (SECC)

The SECC is a delegated committee established by the Management Board which has the mandate to develop sustainable compensation principles, to prepare recommendations on Total Compensation levels and to ensure appropriate compensation governance and oversight. The SECC establishes the Group Compensation Strategy and the Compensation and Benefits Policy. Moreover, using quantitative and qualitative factors, the SECC assesses Group and divisional performance as a basis for compensation decisions and makes recommendations to the Management Board regarding the total amount of annual variable compensation and its allocation across business divisions and infrastructure functions.

In order to maintain its independence, only representatives from infrastructure and control functions who are not assigned to any of the business divisions are members of the SECC. In 2020, the SECC's members were comprised of the Chief Transformation Officer (based on his responsibility for HR) and the Chief Financial Officer as Co-Chairpersons, as well as the Chief Risk Officer (all of whom are Management Board members), the Global Head of Human Resources as well as an additional representative from both Finance and Risk as voting members. The Compensation Officer, the Deputy Compensation Officer, the Global Head of HR Performance & Reward and an additional representative from Finance participated as non-voting members. The SECC generally meets on a monthly basis and meets more frequently during the compensation process. It held 25 meetings in total with regard to the compensation process for performance year 2020.

Compensation strategy

Deutsche Bank recognizes that its compensation framework plays a vital role in supporting its strategic objectives. It enables us to attract and retain the individuals required to achieve our bank's objectives. The Group Compensation Strategy is aligned to Deutsche Bank's business strategy, risk strategy, and to its corporate values and beliefs as outlined below.

Five key objectives of our compensation practices

- To support the delivery of the bank's client-focused, global bank strategy by attracting and retaining talent across its full range of diverse business models and country locations
- To support the long-term, sustainable performance and development of the bank and a corresponding risk strategy
- To promote and support long-term performance based on cost discipline and efficiency
- To ensure that the bank's compensation practices are safe, by way of risk-adjusting performance outcomes, preventing inappropriate risk taking, ensuring sustained compatibility with capital and liquidity planning, and complying with regulation
- To apply and promote the bank's corporate values of integrity, sustainable performance, client centricity, innovation, discipline and partnership

Core remuneration principles

- Align compensation to shareholder interests and sustained bank-wide profitability, taking account of risk
- Maximize sustainable performance, both at the employee and the bank-wide level
- Attract and retain the best talent
- Calibrate compensation to reflect different divisions and levels of responsibility
- Apply a simple and transparent compensation design
- Ensure compliance with regulatory requirements

Group compensation framework

Our compensation framework emphasizes an appropriate balance between Fixed Pay (FP) and Variable Compensation (VC) – together Total Compensation (TC). It aligns incentives for sustainable performance at all levels of Deutsche Bank whilst ensuring the transparency of compensation decisions and their impact on shareholders and employees. The underlying principles of our compensation framework are applied to all employees equally, irrespective of differences in seniority, tenure or gender.

Pursuant to CRD 4 and the requirements subsequently adopted in the German Banking Act, Deutsche Bank is subject to a ratio of 1:1 with regard to fixed-to-variable remuneration components, which was increased to 1:2 through shareholder approval on May 22, 2014 with an approval rate of 95.27 %, based on valid votes by 27.68 % of the share capital represented at the Annual General Meeting. Nonetheless, the bank has determined that employees in specific infrastructure functions should continue to be subject to a ratio of at least 1:1 while Control Functions as defined by InstVV are subject to a ratio of 2:1.

The bank has assigned a Reference Total Compensation (RTC) to eligible employees that describes a reference value for their role. This value provides our employees orientation regarding their FP and VC. Actual individual TC can be at, above or below the Reference Total Compensation, depending on VC decisions.

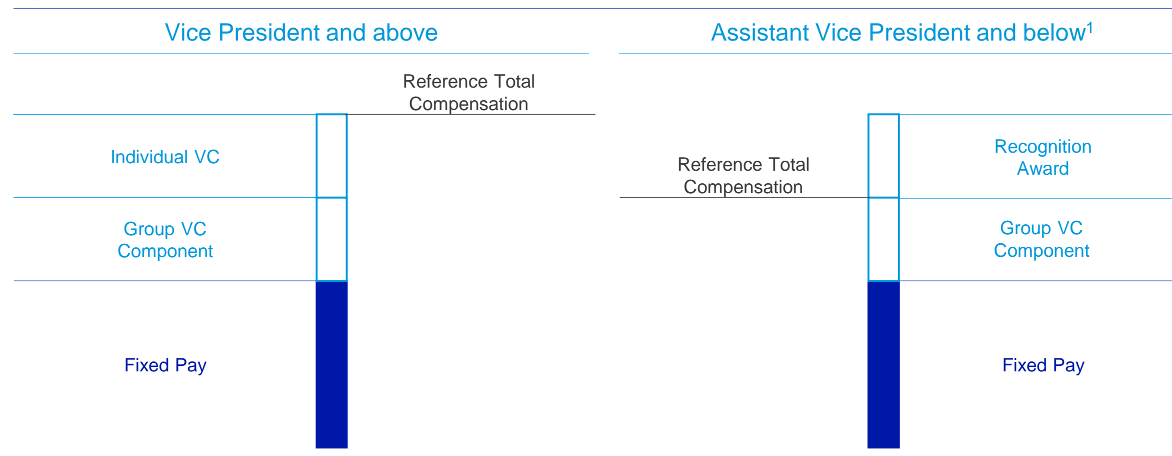
Fixed Pay is used to compensate employees for their skills, experience and competencies, commensurate with the requirements, size and scope of their role. The appropriate level of FP is determined with reference to the prevailing market rates for each role, internal comparisons and applicable regulatory requirements. FP plays a key role in permitting us to meet our strategic objectives by attracting and retaining the right talent. For the majority of our employees, FP is the primary compensation component.

Variable Compensation reflects affordability and performance at Group, divisional, and individual level. It allows us to differentiate individual performance and to drive behavior through appropriate incentives that can positively influence culture. It also allows for flexibility in the cost base. VC generally consists of two elements – the Group VC Component and the Individual VC Component.

The Group VC Component is based on one of the overarching goals of the compensation framework – to ensure an explicit link between VC and the performance of the Group. To assess our annual achievements in reaching our strategic targets, the four Key Performance Indicators (KPIs) utilized as the basis for determining the 2020 Group VC Component were: Common Equity Tier 1 (CET 1) Capital Ratio, Leverage Ratio, Adjusted Costs, and Post-Tax Return on Tangible Equity (RoTE). These four KPIs represent the bank's capital, leverage, profitability, and cost targets.

The Individual VC Component is delivered either in the form of Individual VC (generally applicable for employees at the level of Vice President (VP) and above) or as Recognition Award (generally applicable for employees at the level of Assistant Vice President (AVP) and below). In cases of negative performance contributions or misconduct, an employee's VC can be reduced accordingly and can go down to zero. VC is granted and paid out subject to Group affordability. Under our compensation framework, there continues to be no guarantee of VC in an existing employment relationship. Guaranteed VC arrangements are utilized only in very limited cases for new hires in the first year of employment and are subject to the bank's standard deferral requirements.

Key components of the compensation framework



[1] Some Assistant Vice Presidents and below in select entities and divisions are eligible for Individual VC in lieu of the Recognition Award.

Individual VC takes into consideration a number of financial and nonfinancial factors, including the applicable divisional performance, the employee's individual performance, conduct, and adherence to values and beliefs, as well as additional factors such as the comparison of pay levels with the employee's peer group and retention considerations.

Recognition Awards provide the opportunity to acknowledge and reward outstanding contributions made by the employees of lower seniority levels in a timely and transparent manner. Generally, the overall size of the Recognition Award budget is directly linked to a set percentage of FP for the eligible population and it is currently paid out twice a year, based on a review of nominations and contributions in a process managed at the divisional level.

In the context of InstVV, severance payments are considered variable compensation. The bank's framework for severance payments ensures full alignment with the respective InstVV requirements.

Employee benefits complement Total Compensation and are considered FP from a regulatory perspective, as they have no direct link to performance or discretion. They are granted in accordance with applicable local market practices and requirements. Pension expenses represent the main element of the bank's benefits portfolio globally.

Determination of performance-based variable compensation

In 2020, we put a special focus on further improving our governance on compensation related decision making processes. This included the development of more sophisticated analytical tools and scenarios for testing affordability and other premises to determine variable compensation. Furthermore, we simplified and increased transparency of our policies and procedures. This resulted in a strengthened set of rule-based principles for compensation decisions with an even closer link to the business and individual performance.

The total amount of VC for any given performance year is initially determined at Group level, taking into account the bank's affordability parameters, and then allocated to divisions and infrastructure functions based on their performance in support of achieving the bank's strategic objectives.

In a first step, Deutsche Bank assesses the bank's profitability, solvency and liquidity position in line with its Risk Appetite Framework, including a holistic review against the bank's multi-year strategic plan to determine what the bank "can" award in line with regulatory requirements (i.e. Group affordability). In the next step, the bank assesses Group and divisional risk-adjusted performance, i.e. what the bank "should" award in order to provide an appropriate compensation for contributions to the bank's success.

When assessing divisional performance, a range of considerations is referenced. Performance is assessed in the context of financial and – based on Balanced Scorecards – nonfinancial targets. The financial targets for front-office divisions are subject to appropriate risk-adjustment, in particular by referencing the degree of future potential risks to which Deutsche Bank may be exposed, and the amount of capital required to absorb severe unexpected losses arising from these risks. For the infrastructure functions, the financial performance assessment is mainly based on the achievement of cost targets. While the allocation of VC to infrastructure functions, and in particular to control functions, depends on the overall performance of Deutsche Bank, it is not dependent on the performance of the division(s) that these functions oversee.

At the level of the individual employee, we have established Variable Compensation Guiding Principles, which detail the factors and metrics that have to be taken into account when making Individual VC decisions. Our managers must fully appreciate the risk-taking activities of individuals to ensure that VC allocations are balanced and risk-taking is not inappropriately incentivized. The factors and metrics to be considered include, but are not limited to, individual performance based on quantitative and qualitative aspects, culture and behavioral considerations, and disciplinary sanctions. Managers of MRTs must specifically document the factors and risk metrics considered when making Individual VC decisions. Generally, performance is assessed based on a one year period. However, for Management Board members of Significant Institutions, the performance over three years is taken into account.

Variable compensation structure

Our compensation structures are designed to provide a mechanism that promotes and supports long-term performance of our employees and our bank. Whilst a portion of VC is paid upfront, these structures require that an appropriate portion is deferred to ensure alignment with the sustainable performance of the Group. For both parts of VC, we use Deutsche Bank shares as instruments and as an effective way to align compensation with Deutsche Bank's sustainable performance and the interests of shareholders.

We continue to go beyond regulatory requirements with the amount of VC that is deferred and our minimum deferral periods. The deferral rate and period are determined based on the risk categorization of the employee, the division and the business unit. We start to defer parts of variable compensation for MRTs where VC is set at or above € 50,000. For non-MRTs, deferrals start at higher levels of VC. MRTs are on average subject to deferral rates in excess of the minimum 40 % (60 % for Senior Management) as required by InstVV. For MRTs in Material Business Units (MBU) we introduced a deferral rate of at least 50 %. The VC threshold for MRTs requiring at least 60 % deferral is set at € 500,000.

Furthermore, Directors and Managing Directors in Corporate Bank (CB), Investment Bank (IB) or Capital Release Unit (CRU) are subject to a VC deferral rate of 100 % with respect to any VC in excess of € 500,000. If Fixed Pay for these employees exceeds an amount of € 500,000, the full VC is deferred.

As detailed in the table below, deferral periods range from three to five years, dependent on employee groups.

Overview on 2020 Award Types (excluding DWS Group)

Award Type	Description	Beneficiaries	Deferral Period	Retention Period	Proportion
Upfront: Cash VC	Upfront cash portion	All eligible employees	N/A	N/A	InstVV MRTs: 50 % of upfront VC Non-MRTs: 100 % of upfront VC
Upfront: Equity Upfront Award (EUA)	Upfront equity portion (linked to Deutsche Bank's share price over the retention period)	All InstVV MRTs with VC >= € 50,000	N/A	Twelve months	50 % of upfront VC
Deferred: Restricted Incentive Award (RIA)	Deferred cash portion	All employees with deferred VC	Equal tranche vesting: CB/IB/CRU: 4 years MRTs in MBU: 4 years Sen. Mgmt.[1]: 5 years Other: 3 years	N/A	50 % of deferred VC
Deferred: Restricted Equity Award (REA)	Deferred equity portion (linked to Deutsche Bank's share price over the vesting and retention period)	All employees with deferred VC	Equal tranche vesting: CB/IB/CRU: 4 years MRTs in MBU: 4 years Sen. Mgmt.[1]: 5 years Other: 3 years	Twelve months for InstVV MRTs	50 % of deferred VC

N/A – Not applicable
[1] For the purpose of Performance Year 2020 annual awards, Senior Management is defined as DB AG MB-1 positions; voting members of Business Division Top Executive Committees; MB members of Significant Institutions; respective MB-1 positions with managerial responsibility. For the specific deferral rules for the Management Board of DB AG refer to the Compensation Report for the Management Board.

Our employees are not allowed to sell, pledge, transfer or assign a deferred award or any rights in respect to the award. They may not enter into any transaction having an economic effect of hedging any variable compensation, for example offsetting the risk of price movement with respect to the equity-based award. Our Human Resources and Compliance functions, supported by the Compensation Officer, work together to monitor employee trading activity and to ensure that all our employees comply with this requirement.

Ex-post risk adjustment of variable compensation

In line with regulatory requirements relating to ex-post risk adjustment of variable compensation, we believe that a long-term view on conduct and performance of our employees is a key element of deferred VC. As a result, all deferred awards are subject to performance conditions and forfeiture provisions as detailed below.

Overview of Deutsche Bank Group performance conditions and forfeiture provisions of Variable Compensation granted for Performance Year 2020

Provision	Description	Forfeiture
Solvency and Liquidity	If at the quarter end preceding vesting and release, any one of the following falls below a defined Risk Appetite threshold: CET1 Capital Ratio; Leverage Ratio; Economic Capital Adequacy Ratio; Liquidity Coverage Ratio; Liquidity Reserves	Between 10% and 100% of the next tranche of deferred award due for delivery / of the Equity Upfront Award, depending on the Risk Appetite threshold and the extent the Group / Divisional PBT condition(s) is/ are met
Group PBT	If for the financial year end preceding the vesting date adjusted Group PBT is negative[1]	Between 10% and 100% of the next tranche of deferred award due for delivery, depending on the extent Solvency and Liquidity condition is met and whether Divisional PBT condition is met (if applicable)
Divisional PBT	If for the financial year end preceding the vesting date adjusted Divisional PBT is negative[1]	Between 10% and 100% of the next tranche of deferred award due for delivery, depending on the extent Solvency and Liquidity condition is met and whether Group PBT condition is met
Forfeiture Provisions[2]	– In the event of an internal policy or procedure breach, breach of any applicable laws or regulations, or a Control Failure – If any award was based on performance measures or assumptions that are later deemed to be materially inaccurate – Where a Significant Adverse Event occurs, and the Participant is considered sufficiently proximate – If forfeiture is required to comply with prevailing regulatory requirements	Up to 100 % of undelivered awards
Clawback	In the event an InstVV MRT participated in conduct that resulted in significant loss or regulatory sanction; or failed to comply with relevant external or internal rules regarding appropriate standards of conduct	100 % of award which has been delivered, before the second anniversary of the last vesting date for the award

[1] Considering clearly defined and governed adjustments for relevant Profit and Loss items (e.g., business restructurings; impairments of goodwill or intangibles).
[2] Other provisions may apply as outlined in the respective plan rules.

Employee groups with specific compensation structures

For some areas of our bank, compensation structures apply that deviate, within the applicable regulatory framework, in some aspects from the Group Compensation Framework outlined previously.

Postbank units

While generally executive staff of former Postbank follows the remuneration structure of Deutsche Bank, the compensation for any other staff in Postbank units is based on specific frameworks agreed with trade unions or with the respective workers' councils. Where no collective agreements exist, compensation is subject to individual contracts. In general, non-executive and tariff staff in Postbank units receive VC, but the structure and portion of VC can differ between legal entities.

DWS

The vast majority of DWS asset management entities and employees fall under AIFMD or UCITS, while a limited number of employees remain in scope of the bank's Group Compensation Framework and InstVV. DWS has established its own compensation governance, policy, and structures, as well as a Risk Taker identification process in line with AIFMD/UCITS requirements. These structures and processes are in line with InstVV where required, but tailored towards the Asset Management business. Pursuant to the ESMA Guidelines, DWS's compensation strategy is designed to ensure an appropriate ratio between fixed and variable compensation.

Generally, DWS applies remuneration rules that are equivalent to the Deutsche Bank Group approach, but use DWS Group-related parameters, where possible. Notable deviations from the Group Compensation Framework include the use of share-based instruments linked to DWS shares and fund-linked instruments. These serve to improve the alignment of employee compensation with DWS' shareholders' and investors' interests.

Control Functions

In line with InstVV, the bank has defined control functions that are subject to specific regulatory requirements. These control functions comprise Risk, Compliance, Anti-Financial Crime, Group Audit, parts of Human Resources, and the Compensation Officer and his Deputy. To prevent conflicts of interests, the parameters used to determine the Individual VC Component of these control functions do not follow the same parameters being used for the business they oversee. Based on their risk profile, these functions are subject to a fixed-to-variable pay ratio of 2:1.

In addition, for some corporate functions that perform internal control roles (including Legal, Group Finance, Group Tax, Regulation, and other parts of Human Resources), the bank has determined a fixed-to-variable pay ratio of 1:1.

Tariff staff

Within Deutsche Bank Group there are more than 17,000 tariff employees in Germany (based on full-time equivalent). These tariff employees are primarily employed by Deutsche Bank AG and former Postbank subsidiaries. Tariff employees employed by Deutsche Bank AG are subject to a collective agreement (*Tarifvertrag für das private Bankgewerbe und die öffentlichen Banken*), as negotiated between trade unions and employer associations. Former Postbank units are subject to agreements as negotiated with the respective trade unions directly. The remuneration of tariff staff is included in the quantitative disclosures in this report.

Compensation decisions for 2020

Year-end considerations and decisions for 2020

All compensation decisions are made within the boundaries of regulatory requirements. These requirements form the overarching and limiting principle of determining compensation in Deutsche Bank. In particular, management must ensure that compensation decisions are not detrimental to maintaining a sound capital base and liquidity resources of the bank.

In this respect, 2020 was an extraordinary year for the industry. In the light of the COVID-19 pandemic, the ECB and national regulators called upon all institutions to apply a moderate approach to variable compensation in order to preserve a strong capital base for the future. At the same time, despite the external circumstances and the bank's ongoing transformation, 2020 was a successful year for Deutsche Bank. Thanks to our new strategy and to the great dedication of our employees to the bank, we are ahead of our transformation plan. As a result, we have achieved all of our strategic objectives over the past year. In 2020, we are profitable with a pre-tax profit of more than € 1 billion and a net profit of more than € 600 million. We have also made further progress on costs, which allowed us to achieve our adjusted cost target. The bank has built firm foundations for sustainable profitability, and we are confident that this overall positive trend will continue in 2021, despite these challenging times.

At the same time, Deutsche Bank recognized the current economic situation and the recommendation of the ECB and took this into consideration when making its compensation decisions. We applied a prudent and forward-looking approach when deciding on the 2020 variable compensation and deferral structures, without losing sight of the need to remunerate our employees according to their performance and in line with market conditions, and of course within the boundaries of affordability. In particular, when determining the amount of year-end performance-based VC, we have exercised more moderation than the results at the Group and divisional level would have required. Also, we continue to apply deferral structures that go beyond the regulatory minimum, resulting in a deferral rate of 47 % in 2020.

In the context of the above considerations, the Management Board confirmed that the bank is in a position to award variable compensation, including a year-end performance-based VC pool of € 1.857 billion for 2020. The VC for the Management Board of Deutsche Bank AG was determined by our Supervisory Board in a separate process. It is, however, included in the tables and charts below. For details, please refer to the Management Board Compensation Report.

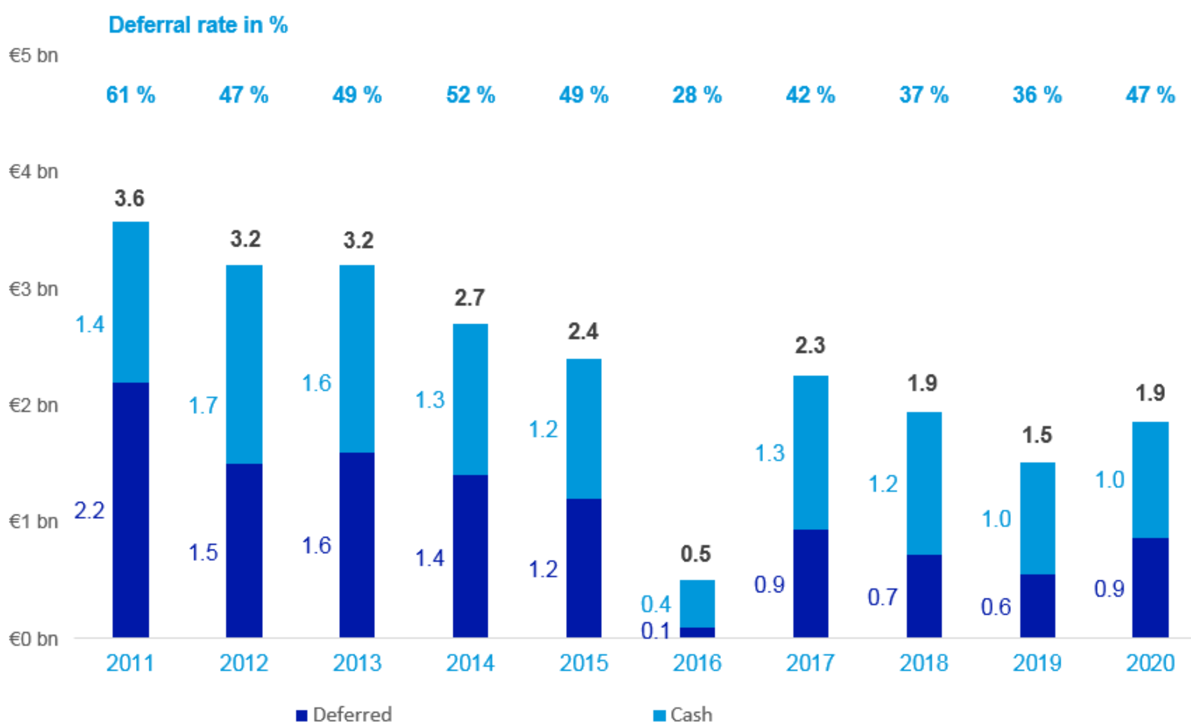
As part of the overall 2020 VC awards granted in March 2021, the Group VC Component was awarded to all eligible employees in line with the assessment of the four defined KPIs, as outlined in the section Group Compensation Framework. The Management Board determined a payout rate of 72.5 % for the Group VC Component in 2020 (2019: 60 %).

Compensation awards for 2020 – all employees

in € m. (unless stated otherwise)[1]	Supervisory Board[2]	Management Board[3]	IB[3]	CB[3]	PB[3]	AM[3]	CRU[3]	Control Functions[3]	Corporate Functions[3]	2020 Group Total	2019 Group Total
Number of employees (full-time equivalent)	20	10	4,258	7,368	29,945	3,926	482	6,423	32,247	84,659	87,597
Total compensation	6	62	2,048	1,032	2,570	690	161	757	2,798	10,119	10,093
Base salary and allowances	6	26	946	695	1,975	415	88	606	2,190	6,940	7,350
Pension expenses	0	7	60	67	138	37	7	56	182	554	581
Fixed Pay according to § 2 InstVV	6	32	1,006	762	2,113	451	95	663	2,371	7,494	7,931
Year-end performance-based VC[4]	**0**	**30**	**876**	**152**	**227**	**181**	**25**	**70**	**295**	**1,857**	1,444
Other VC[4]	0	0	138	14	54	36	15	4	25	286	314
Severance payments[5]	0	0	28	103	177	22	26	20	107	482	405
Variable Pay according to § 2 InstVV	0	30	1,042	269	457	239	66	95	427	2,625	2,162

[1] The table may contain marginal rounding differences. FTE (full-time equivalent) as of December 31, 2020. Pension expenses for 2019 adjusted.
[2] Supervisory Board includes the Deutsche Bank AG Supervisory Board members. They are not considered for the Group Total number of employees. Employee representatives are considered with their compensation for the Supervisory Board role only (their employee compensation is included in the relevant divisional column). The remuneration for members of the Deutsche Bank AG Supervisory Board is not reflected in the Group Total.
[3] Management Board includes the board members of Deutsche Bank AG. IB = Investment Bank; CB = Corporate Bank; PB = Private Bank; AM = Asset Management; CRU = Capital Release Unit. Control Functions include Chief Risk Office, Group Audit, Compliance and Anti-Financial Crime. Corporate Functions include any Infrastructure function which is neither captured as a Control Function nor part of any division. Employees' full year compensation is allocated to columns based on the role at yearend.
[4] Year-end performance-based VC includes Individual and Group VC. Other VC includes other contractual VC commitments such as sign-on awards and retention awards (including € 171 million granted at the beginning of the year due to increased retention risk). Other VC in 2020 also includes recognition awards (€ 45 million) and specific VC elements for tariff staff and civil servants formerly reported as Year-end performance-based VC. 2019 figures disclosed in the 2019 Compensation Report for Year-end performance-based VC (€ 1,516 million) and Other VC (€ 242 million) were adjusted accordingly for the purpose of this table. The table does not include expenses eligible for reimbursement related to Prime Finance and does not include new hire replacement awards for lost entitlements from previous employers (buyouts).
[5] Severance payments now includes restructuring based severance costs. 2019 number restated to include severance costs formerly reported in Note 10 "Restructuring" only. All relevant 2019 Group Totals adjusted accordingly.

Reported year-end performance-based Variable Compensation and deferral rates year over year



Due to rounding, numbers presented may not add up precisely to the totals.
Figures as disclosed in the 2019 Compensation Report; adjustments for 2019 as detailed in the above table are not reflected.

Material Risk Taker compensation disclosure

On a global basis, 2,298 employees were identified as MRTs according to InstVV for financial year 2020, compared to 2,553 employees for 2019 (-10 %). This decrease is primarily a result of a reduced number of quantitative (remuneration driven) MRTs, along with a reduction of headcount and our exit from some businesses. The remuneration elements for all MRTs are detailed in the table below in accordance with Section 16 InstVV and Article 450 CRR.

Aggregate remuneration for Material Risk Takers according to InstVV

										2020	2019
in € m. (unless stated otherwise)[1]	Supervisory Board[2]	Management Board[3]	IB[3]	CB[3]	PB[3]	AM[3]	CRU[3]	Control Functions[3]	Corporate Functions[3]	Group Total	Group Total
Number of MRTs (headcount)	41	45	1,027	183	301	37	95	229	340	2,298	2,553
Number of MRTs (FTE)	31	36	925	165	256	26	53	216	292	1,999	2,101
Thereof: Senior Management[4]	0	36	18	29	51	4	4	39	51	232	253
Total Pay	7	94	1,239	128	192	46	73	103	247	2,130	2,070
Total Fixed Pay	7	52	522	63	108	20	34	80	135	1,022	1,297
Thereof:											
In cash (incl. pension expenses)	6	52	522	63	108	20	34	80	135	1,020	1,295
In shares or other instruments	1	0	0	0	0	0	0	0	0	1	1
Total Variable Pay for period[5]	0	42	716	66	84	26	39	23	112	1,109	773
Thereof:											
In cash	0	22	364	37	48	17	23	14	66	590	411
In shares or share-based instruments	0	21	352	28	36	9	17	9	45	518	361
In other types of instruments	0	0	0	0	0	1	0	0	0	1	1
Total Variable Pay for period, deferred	0	36	593	41	45	10	28	8	51	813	526
Thereof:											
In cash	0	18	297	21	22	4	14	4	26	406	260
In shares or share-based instruments	0	18	296	21	22	5	14	4	26	406	265
In other types of instruments	0	0	0	0	0	1	0	0	0	1	1
Total amount of variable pay still outstanding at the beginning of the year that was deferred in previous years	0	64	1,050	69	93	43	65	29	122	1,536	1,971
Thereof:											
Vested	0	11	41	5	9	5	2	5	12	89	115
Vested and paid/delivered	0	10	41	4	9	5	2	5	11	88	114
Unvested	0	54	1,009	64	84	38	63	24	110	1,446	1,856
Deferred Variable Pay awarded, paid out or reduced during period											
Awarded during period	0	31	393	29	42	21	22	9	46	592	831
Paid out during period	0	17	247	17	36	10	15	11	36	389	461
Reduced through explicit risk adjustments[6]	0	5	187	13	20	5	11	7	27	275	2
Number of beneficiaries of guaranteed variable remuneration (incl. sign-on payments)	0	0	1	1	0	0	0	0	1	3	9
Total amount of guaranteed variable pay (incl. sign-on payments)	0	0	1	1	0	0	0	0	1	2	9
Total amount of severance payments granted during period[7]	0	2	11	8	10	9	6	3	20	69	70
Number of beneficiaries of severance payments granted during period	0	3	33	12	25	9	23	5	20	130	213
Highest severance payment granted to an individual during period	0	1	3	1	3	2	1	2	5	5	11

[1] The table may contain marginal rounding differences. Employees are allocated to columns based on their primary role. FTE as of December 31, 2020.
[2] Supervisory Board includes the Supervisory Board members of all Significant Institutions within Deutsche Bank Group. Employee representatives solely identified due to their Supervisory Board role are considered with their compensation for the Supervisory Board role only.
[3] Management Board includes the respective board members of all Significant Institutions within Deutsche Bank Group. IB = Investment Bank; CB = Corporate Bank; PB = Private Bank; AM = Asset Management; CRU = Capital Release Unit. Control Functions include Chief Risk Office, Group Audit, Compliance, Anti-Financial Crime. Corporate Functions include any Infrastructure function which is neither captured as a Control Function nor part of any division.
[4] Senior Management for the purpose of this disclosure includes DB AG MB and MB-1 positions, voting members of Business Division Top Executive committees, MB members of Significant Institutions and respective MB-1 positions with managerial responsibility.
[5] Total Variable Pay includes Deutsche Bank´s Year-end performance-based VC for 2020, Other VC, and severance payments. Buyouts are not included.
[6] Includes forfeited equity based parts of the Retention Award Program granted in January 2017 due to not meeting the predefined share price target in 2020.
[7] Severance payments are generally not deferred.

Remuneration of high earners

in €	2020 Number of individuals	2019 Number of individuals
Total Pay[1]		
1,000,000 to 1,499,999	333	305
1,500,000 to 1,999,999	150	122
2,000,000 to 2,499,999	67	50
2,500,000 to 2,999,999	38	37
3,000,000 to 3,499,999	25	21
3,500,000 to 3,999,999	15	20
4.000,000 to 4,499,999	17	9
4,500,000 to 4,999,999	9	8
5,000,000 to 5,999,999	12	6
6,000,000 to 6,999,999	10	4
7,000,000 to 7,999,999	3	0
8,000,000 to 8,999,999	3	0
9,000,000 to 9,999,999	1	0
10,000,000 to 10,999,999	1	0
11,000,000 to 11,999,999	0	0
12,000,000 to 12,999,999	0	0
13,000,000 to 13,999,999	0	1
Total	684	583

[1] Includes all components of FP and VC (including severances). Buyouts are not included. Includes DB AG Management Board members and 2020 leavers.

In total, 684 employees received a Total Pay of € 1 million or more for 2020, compared to 583 employees in 2019. This increase is based on higher levels of performance-based variable compensation following our significantly improved Group and divisional results as outlined above.

Compensation system for Supervisory Board members

The compensation principles for Supervisory Board members are set forth in our Articles of Association, which our shareholders amend from time to time at the Annual General Meeting. Such compensation provisions, which were newly conceived in 2013, were last amended by resolution of the Annual General Meeting on May 18, 2017 and became effective on October 5, 2017. Accordingly, the following provisions apply:

The members of the Supervisory Board receive fixed annual compensation (“Supervisory Board Compensation”). The annual base compensation amounts to € 100,000 for each Supervisory Board member. The Supervisory Board Chairman receives twice that amount and the Deputy Chairperson one and a half times that amount.

Members and chairs of the committees of the Supervisory Board are paid additional fixed annual compensation as follows:

Committee in €	Dec 31, 2020 Chair	 Member
Audit Committee	200,000	100,000
Risk Committee	200,000	100,000
Nomination Committee	100,000	50,000
Mediation Committee	0	0
Integrity Committee	200,000	100,000
Chairman’s Committee	100,000	50,000
Compensation Control Committee	100,000	50,000
Strategy Committee	100,000	50,000
Technology, Data and Innovation Committee	100,000	50,000

75 % of the compensation determined is disbursed to each Supervisory Board member after submitting invoices within the first three month of the following year. The other 25 % is converted by the company at the same time into company shares based on the average closing price on the Frankfurt Stock Exchange (Xetra or successor system) during the last ten trading days of the preceding January, calculated to three digits after the decimal point. The share value of this number of shares is paid to the respective Supervisory Board member in February of the year following his departure from the Supervisory Board or the expiration of his term of office, based on the average closing price on the Frankfurt Stock Exchange (Xetra or successor system) during the last ten trading days of the preceding January, provided that the member does not leave the Supervisory Board due to important cause which would have justified dismissal.

In case of a change in Supervisory Board membership during the year, compensation for the financial year will be paid on a pro rata basis, rounded up/down to full months. For the year of departure, the entire compensation is paid in cash; a forfeiture regulation applies to 25 % of the compensation for that financial year.

The company reimburses the Supervisory Board members for the cash expenses they incur in the performance of their office, including any value added tax (VAT) on their compensation and reimbursements of expenses. Furthermore, any employer contributions to social security schemes that may be applicable under foreign law to the performance of their Supervisory Board work shall be paid for each Supervisory Board member affected. Finally, the Chairman of the Supervisory Board will be appropriately reimbursed for travel expenses incurred in performing representative tasks that his function requires and for the costs of security measures required on account of his function.

In the interest of the company, the members of the Supervisory Board will be included in an appropriate amount, with a deductible, in any financial liability insurance policy held by the company. The premiums for this are paid by the company.

Supervisory Board compensation for the 2020 financial year

Individual members of the Supervisory Board received the following compensation for the 2020 financial year (excluding value added tax).

	Compensation for fiscal year 2020		Compensation for fiscal year 2019	
Members of the Supervisory Board in €	Fixed	Thereof payable in 1st quarter 2021	Fixed	Thereof paid in 1st quarter 2020
Dr. Paul Achleitner[1]	802,083	601,563	900,000	675,000
Detlef Polaschek	450,000	337,500	450,000	337,500
Ludwig Blomeyer-Bartenstein	300,000	225,000	300,000	225,000
Frank Bsirske	300,000	225,000	300,000	225,000
Mayree Carroll Clark	425,000	318,750	370,833	278,125
Jan Duscheck	250,000	187,500	250,000	187,500
Dr. Gerhard Eschelbeck	150,000	112,500	150,000	112,500
Sigmar Gabriel[2]	166,667	125,000	0	0
Katherine Garrett-Cox[3]	100,000	100,000	300,000	225,000
Timo Heider	250,000	187,500	250,000	187,500
Martina Klee	150,000	112,500	150,000	112,500
Henriette Mark	250,000	187,500	250,000	187,500
Richard Meddings[4]	0	0	87,500	87,500
Gabriele Platscher	300,000	225,000	300,000	225,000
Bernd Rose	275,000	206,250	250,000	187,500
Gerd Alexander Schütz	175,000	131,250	150,000	112,500
Prof. Dr. Stefan Simon[4]	0	0	320,833	320,833
Stephan Szukalski[5]	200,000	200,000	200,000	150,000
John Alexander Thain	200,000	150,000	200,000	150,000
Michele Trogni	350,000	262,500	320,833	240,625
Dr. Dagmar Valcárcel[6]	425,000	318,750	166,667	125,000
Dr. Theodor Weimer[7]	108,333	81,250	0	0
Prof. Dr. Norbert Winkeljohann	450,000	337,500	420,833	315,625
Jürg Zeltner[8]	0	0	25,000	25,000
Total	**6,077,083**	**4,632,813**	6,112,499	4,692,708

[1] In the context of the discussion of a voluntary waiver by senior managers of the bank of portions of their compensation claims, Dr. Achleitner offered to waive one-twelfth (€ 72,917) if this future compensation claim for the 2020 financial year pursuant to the Articles of Association. The Management Board accepted his offer.
[2] Member since March 11, 2020.
[3] Member until May 20, 2020.
[4] Member until July 31, 2019.
[5] Member until December 31, 2020.
[6] Member since August 1, 2019.
[7] Member since May 20,2020.
[8] Member from August 20 until December 15, 2019.

Following the submission of invoices 25 % of the compensation determined for each Supervisory Board member for the 2020 financial year was converted into notional shares of the company on the basis of a share price of € 8.9201 (average closing price on the Frankfurt Stock Exchange (Xetra) during the last ten trading days of January 2021). Members who left the Supervisory Board in 2020 were paid the entire amount of compensation in cash.

The following table shows the number of notional shares of the Supervisory Board members, to three digits after the decimal point, that were awarded in the first three months 2021 as part of their 2020 compensation as well as the number of notional shares accrued from previous years as part of the compensation accumulated during the respective membership in the Supervisory Board as well as the total amounts paid out in February 2021 for members that left the Supervisory Board.

Members of the Supervisory Board	Number of notional shares: Converted in February 2021 as part of the compensation 2020	Total number accrued during the current term of office	Total (cumulative)	In February 2021 payable in €[1]
Dr. Paul Achleitner[2]	22,479.662	63,229.466	85,709.128	0
Detlef Polaschek[3]	12,611.966	22,616.259	35,228.225	0
Ludwig Blomeyer-Bartenstein[3]	8,407.977	15,077.506	23,485.483	0
Frank Bsirske[4]	8,407.977	15,077.506	23,485.483	0
Mayree Carroll Clark[3]	11,911.301	18,256.494	30,167.795	0
Jan Duscheck[4]	7,006.648	12,564.588	19,571.236	0
Dr. Gerhard Eschelbeck[5]	4,203.989	9,788.371	13,992.360	0
Sigmar Gabriel[6]	4,671.099	0	4,671.099	0
Katherine Garrett-Cox[7]	0	21,530.850	21,530.850	192,057
Timo Heider[4]	7,006.648	12,564.588	19,571.236	0
Martina Klee[4]	4,203.989	7,538.753	11,742.742	0
Henriette Mark[4]	7,006.648	12,564.588	19,571.236	0
Gabriele Platscher[4]	8,407.977	15,077.506	23,485.483	0
Bernd Rose[4]	7,707.313	12,564.588	20,271.901	0
Gerd Alexander Schütz[8]	4,904.654	7,538.753	12,443.407	0
Stephan Szukalski[9]	0	10,051.671	10,051.671	89,662
John Alexander Thain[3]	5,605.318	10,051.671	15,656.989	0
Michele Trogni[3]	9,809.307	15,743.576	25,552.883	0
Dr. Dagmar Valcárcel[10]	11,911.301	5,328.559	17,239.860	0
Dr. Theodor Weimer[11]	3,036.214	0	3,036.214	0
Prof. Dr. Norbert Winkeljohann[12]	12,611.966	15,283.311	27,895.277	0
Total	**161,911.954**	302,448.604	**464,360.558**	**281,719**

[1] At a value of € 8.9201 based on the average closing price on the Frankfurt Stock Exchange (Xetra or successor system) during the last ten trading days of January 2021.
[2] Member was re-elected on May 18, 2017. The calculation was performed while taking into account Dr. Achleitner's waiver of one-twelfth (€ 72,917) of his compensation for the 2020 financial year pursuant to the Articles of Association.
[3] Member since May 24, 2018.
[4] As Employee representatives on April 26, 2018 re-elected.
[5] Member since May 18, 2017.
[6] Member since March 11, 2020.
[7] Member until May 20, 2020.
[8] Member on May 24, 2018 re-elected.
[9] Member until December 31, 2020.
[10] Member since August 1, 2019.
[11] Member since May 20, 2020.
[12] Member since August 1, 2018.

All employee representatives on the Supervisory Board, with the exception of Frank Bsirske, Jan Duscheck and Stephan Szukalski (Member until December 31, 2020), are employed by us. In the 2020 financial year, we paid such members a total amount of € 1.1 million in the form of salary, retirement and pension compensation in addition to their Supervisory Board compensation.

We do not provide members of the Supervisory Board with any benefits after they have left the Supervisory Board, though members who are or were employed by us are entitled to the benefits associated with the termination of such employment. During 2020, we set aside € 0.11 million for pension, retirement or similar benefits for the members of the Supervisory Board who are or were employed by us.

With the agreement of the Bank's Management Board, Dr. Paul Achleitner performs representative functions in various ways on an unpaid basis for the Bank and participates in opportunities for referrals of business for the Bank. These tasks are related to the functional responsibilities of the Chairman of the Supervisory Board of Deutsche Bank AG. In this respect, the reimbursement of costs is provided for in the Articles of Association. On the basis of a separate contractual agreement, the Bank provides Dr. Paul Achleitner with infrastructure and support services free of charge for his services in the interest of the Bank. He is therefore entitled to avail himself of internal resources for preparing and carrying out these activities. The Bank's security and car services are available for Dr. Paul Achleitner for use free of charge for these tasks. The Bank also reimburses travel expenses and attendance fees and covers the taxes for any non-cash benefits provided. On September 24, 2012, the Chairman's Committee approved the conclusion of this agreement. The provisions apply for the duration of Dr. Paul Achleitner's tenure as Chairman of the Supervisory Board and are reviewed on an annual basis for appropriateness. Under this agreement between Deutsche Bank and Dr. Achleitner, support services equivalent to € 135,000 (2019: € 208,000) were provided and reimbursements for expenses amounting to € 150,290 (2019: € 277,010) were paid during the 2020 financial year.

[Page intentionally left blank for SEC filing purposes]

Employees

Group Headcount

As of December 31, 2020, we employed a total of 84,659 staff members compared to 87,597 as of December 31, 2019. We calculate our employee figures on a full-time equivalent basis, meaning we include proportionate numbers of part-time employees.

The following table shows our numbers of full-time equivalent employees as of December 31, 2020, 2019 and 2018.

Employees[1]	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018
Germany	37,315	40,491	41,669
Europe (outside Germany), Middle East and Africa	19,617	19,672	20,871
Asia/Pacific	19,430	18,874	19,732
North America[2]	8,149	8,399	9,275
Latin America	148	162	189
Total employees	**84,659**	87,597	91,737

[1] Full-time equivalent employees; in 2019 the health insurance company of Deutsche Bank aligned its FTE definition which decreased the Group number as of December 31, 2019 by 81 (prior period not restated).
[2] Primarily the United States.

The number of our employees decreased in 2020 by 2,938 or 3.4 % driven by implementation of our targets announced in July 2019:

- Germany (-3,176; -7.8 %) driven by the implementation of restructuring measures, primarily in the Private Bank related to private clients and global functions of the Private Bank and to Infrastructure functions driven by the sale of Postbank Systems AG (-1,339);
- North America (-250; -3.0 %) driven by reductions in all divisions and related infrastructure functions;
- Latin America (-14; -8.6 %) due to reductions primarily in Mexico as a result of the implementation of our footprint strategy;
- EMEA ex Germany (-55; -0.3 %) mainly driven by reductions in the Private Bank partly offset by increases in Technology Data & Innovation and in COO;
- Asia/Pacific (+556; +2.9 %) primarily driven by increases in Technology Data & Innovation and in COO.

The following table shows the distribution of full-time equivalent employees by division as of December 31, 2020, 2019 and 2018.

Employees	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018
Corporate Bank (CB)	8.7 %	8.8 %	8.3 %
Investment Bank (IB)	5.0 %	5.0 %	5.0 %
Private Bank (PB)	35.4 %	36.0 %	35.4 %
Asset Management (AM)	4.6 %	4.5 %	4.4 %
Capital Release Unit (CRU)	0.6 %	0.7 %	1.7 %
Infrastructure	45.7 %	45.0 %	45.2 %

- Corporate Bank (CB, -345; -4.5 %) mainly driven by reductions in Commercial Banking Germany;
- Investment Bank (IB, -93; -2.1 %) mainly reductions in Fixed Income & Currencies;
- Private Bank (PB, -1,654; -5.2 %) mainly driven by the reductions in Germany and in EMEA ex Germany;
- Asset Management (AM, +1; +0.0 %) primarily driven by reductions in the US and UK more than offset by increases in Asia/Pacific related to DWS COO;
- Capital Release Unit (CRU, -139; -22.3 %) mainly driven by reductions in the legacy Equities Business;
- Infrastructure functions (-709; -1.8 %) primarily driven by the sale of Postbank Systems AG (-1,339) and reductions in Chief Transformation Office and HR (-171) and in Finance (-146), partly offset by increases in Technology Data & Innovation (+667 excluding sale of Postbank Systems AG) and in COO division (+322) mainly driven by insourcing of business critical external roles.

Post-Employment Benefit Plans

We sponsor a number of post-employment benefit plans on behalf of our employees, both defined contribution plans and defined benefit plans.

In our globally coordinated accounting process covering defined benefit plans with a defined benefit obligation exceeding € 2 million our global actuary reviews the valuations provided by locally appointed actuaries in each country.

By applying our global principles for determining the financial and demographic assumptions we ensure that the assumptions are best-estimate, unbiased and mutually compatible, and that they are globally consistent.

For a further discussion on our employee benefit plans see Note 33 "Employee Benefits" to our consolidated financial statements.

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

2-

Consolidated Financial Statements

233 Consolidated statement of income
234 Consolidated statement of comprehensive income
235 Consolidated balance sheet
236 Consolidated statement of changes in equity
238 Consolidated statement of cash flows
240 Notes to the consolidated financial statements
1 – Significant accounting policies and critical accounting estimates – 240
2 – Recently adopted and new accounting pronouncements – 263
3 – Acquisitions and dispositions – 266
4 – Business segments and related information – 266
274 Notes to the consolidated income statement
5 – Net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss – 274
6 – Commissions and fee income – 276
7 – Gains and losses on derecognition of financial assets measured at amortized cost – 278
8 – Other income (loss) – 278
9 – General and administrative expenses – 278
10 – Restructuring – 279
11 – Earnings per share – 280
281 Notes to the consolidated balance sheet
12 – Financial assets/liabilities at fair value through profit or loss – 281
13 – Financial instruments carried at fair value – 282
14 – Fair value of financial instruments not carried at fair value – 296
15 – Financial assets at fair value through other comprehensive income – 298
16 – Equity method investments – 298
17 – Offsetting financial assets and financial liabilities – 299
18 – Loans – 302
19 – Allowance for credit losses – 303
20 – Transfer of financial assets, assets pledged and received as collateral – 305
21 – Property and equipment – 308
22 – Leases – 309
23 – Goodwill and other intangible assets – 310
24 – Non-current assets and disposal groups held for sale – 315
25 – Other assets and other liabilities – 316
26 – Deposits – 316
27 – Provisions – 317
28 – Credit related commitments and contingent liabilities – 329
29 – Other short-term borrowings – 330
30 – Long-term debt and trust preferred securities – 331
31 – Maturity analysis of the earliest contractual undiscounted cash flows of financial liabilities – 331
333 Additional notes
32 – Common shares – 333
33 – Employee benefits – 334
34 – Income taxes – 348
35 – Derivatives – 350
36 – Related party transactions – 354
37 – Information on subsidiaries – 355
38 – Structured entities – 357
39 – Current and non-current assets and liabilities – 361
40 – Events after the reporting period – 362
41 – Regulatory capital information – 363
42 – Impact of Deutsche Bank's transformation – 367
43 – Condensed Deutsche Bank AG (parent company only) financial information – 368
391 Report of Independent Registered Public Accounting Firm

Consolidated statement of income

in € m.	Notes	2020	2019	2018
Interest and similar income[1]	5	17,954	25,208	24,718
Interest expense	5	6,405	11,458	11,402
Net interest income	5	**11,548**	13,749	13,316
Provision for credit losses	19	1,792	723	525
Net interest income after provision for credit losses		**9,756**	13,026	12,791
Commissions and fee income	6	9,424	9,520	10,039
Net gains (losses) on financial assets/liabilities at fair value through profit or loss	5	2,332	193	1,209
Net gains (losses) on derecognition of assets measured at amortized cost		324	0	2
Net gains (losses) on financial assets at fair value through other comprehensive income		323	260	317
Net income (loss) from equity method investments	16	120	110	219
Other income (loss)	8	(61)	(668)	215
Total noninterest income		**12,463**	9,416	12,000
Compensation and benefits	33	10,471	11,142	11,814
General and administrative expenses	9	10,259	12,253	11,286
Impairment of goodwill and other intangible assets	23	0	1,037	0
Restructuring activities	10	485	644	360
Total noninterest expenses		**21,216**	25,076	23,461
Profit (loss) before income taxes		**1,003**	(2,634)	1,330
Income tax expense (benefit)	34	391	2,630	989
Profit (loss)		**612**	(5,265)	341
Profit (loss) attributable to noncontrolling interests		129	125	75
Profit (loss) attributable to Deutsche Bank shareholders and additional equity components		483	(5,390)	267

[1] Interest and similar income included € 14.1 billion, € 18.0 billion and € 16.8 billion for the year ended December 31, 2020, 2019 and 2018, respectively, calculated based on effective interest method.

Earnings per share

in € m.	Notes	2020	2019	2018
Earnings per share:[1]	11			
Basic		€ 0.06	(€ 2.71)	(€ 0.01)
Diluted		€ 0.06	(€ 2.71)	(€ 0.01)
Number of shares in million:				
Denominator for basic earnings per share – weighted-average shares outstanding		2,108.2	2,110.0	2,102.2
Denominator for diluted earnings per share – adjusted weighted-average shares after assumed conversions[2]		2,170.1	2,110.0	2,102.2

[1] Earnings were adjusted by € 349 million and € 330 million before tax and € 292 million net of tax for the coupons paid on Additional Tier 1 Notes in April 2020, April 2019 and April 2018. Since 2019 the tax impact is recognized in net income (loss) directly. In accordance with IAS 33 the coupons paid on Additional Tier 1 Notes are not attributable to Deutsche Bank shareholders and therefore need to be deducted in the calculation. This adjustment created a net loss situation for Earnings per Common Share for 2018.
[2] Due to the net loss situation for 2019 and 2018 potentially dilutive shares are generally not considered for the earnings per share calculation, because to do so would decrease the net loss per share. Under a net income situation however, the number of adjusted weighted average shares after assumed conversion would have been increased by 60 million shares for 2019 and 53 million shares for 2018.

The accompanying notes are an integral part of the Consolidated Financial Statements.

Consolidated statement of comprehensive income

in € m.	2020	2019	2018
Profit (loss) recognized in the income statement	**612**	(5,265)	341
Other comprehensive income			
Items that will not be reclassified to profit or loss			
Remeasurement gains (losses) related to defined benefit plans, before tax	149	(1,396)	(216)
Net fair value gains (losses) attributable to credit risk related to financial liabilities designated as at fair value through profit or loss, before tax	(24)	(3)	52
Total of income tax related to items that will not be reclassified to profit or loss	82	403	10
Items that are or may be reclassified to profit or loss			
Financial assets at fair value through other comprehensive income			
Unrealized net gains (losses) arising during the period, before tax	676	309	(245)
Realized net (gains) losses arising during the period (reclassified to profit or loss), before tax	(323)	(260)	(317)
Derivatives hedging variability of cash flows			
Unrealized net gains (losses) arising during the period, before tax	(14)	(2)	(3)
Realized net (gains) losses arising during the period (reclassified to profit or loss), before tax	4	(2)	0
Assets classified as held for sale			
Unrealized net gains (losses) arising during the period, before tax	0	0	2
Realized net (gains) losses arising during the period (reclassified to profit or loss), before tax	0	0	(2)
Foreign currency translation			
Unrealized net gains (losses) arising during the period, before tax	(1,819)	(20)	457
Realized net (gains) losses arising during the period (reclassified to profit or loss), before tax	6	(9)	0
Equity Method Investments			
Net gains (losses) arising during the period	1	(22)	(10)
Total of income tax related to items that are or may be reclassified to profit or loss	(122)	193	228
Other comprehensive income (loss), net of tax	**(1,385)**	(809)	(43)
Total comprehensive income (loss), net of tax	**(774)**	(6,073)	298
Attributable to:			
Noncontrolling interests	59	136	116
Deutsche Bank shareholders and additional equity components	(833)	(6,209)	182

The accompanying notes are an integral part of the Consolidated Financial Statements.

Consolidated balance sheet

in € m.	Notes	Dec 31, 2020	Dec 31, 2019
Assets:			
Cash and central bank balances		166,208	137,592
Interbank balances (w/o central banks)		9,130	9,636
Central bank funds sold and securities purchased under resale agreements	20	8,533	13,801
Securities borrowed	20	0	428
Financial assets at fair value through profit or loss			
Trading assets		107,929	110,875
Positive market values from derivative financial instruments		343,493	332,931
Non-trading financial assets mandatory at fair value through profit and loss		76,121	86,901
Financial assets designated at fair value through profit or loss		437	7
Total financial assets at fair value through profit or loss	12, 13, 20, 35	527,980	530,713
Financial assets at fair value through other comprehensive income	15	55,834	45,503
Equity method investments	16	901	929
Loans at amortized cost	18, 19, 20	426,691	429,841
Property and equipment	21, 22	5,549	4,930
Goodwill and other intangible assets	23	6,725	7,029
Other assets [1]	24, 25	110,360	110,359
Assets for current tax		986	926
Deferred tax assets	34	6,063	5,986
Total assets		**1,324,961**	1,297,674
Liabilities and equity:			
Deposits	26	567,745	572,208
Central bank funds purchased and securities sold under repurchase agreements	20	2,325	3,115
Securities loaned	20	1,697	259
Financial liabilities at fair value through profit or loss			
Trading liabilities		44,316	37,065
Negative market values from derivative financial instruments		327,775	316,506
Financial liabilities designated at fair value through profit or loss		46,582	50,332
Investment contract liabilities		526	544
Total financial liabilities at fair value through profit or loss	12, 13, 20, 35	419,199	404,448
Other short-term borrowings	29	3,553	5,218
Other liabilities [1]	22, 24, 25	114,208	107,964
Provisions	19, 27	2,430	2,622
Liabilities for current tax		574	651
Deferred tax liabilities	34	561	545
Long-term debt	30	149,163	136,473
Trust preferred securities	30	1,321	2,013
Total liabilities		**1,262,777**	1,235,515
Common shares, no par value, nominal value of € 2.56	32	5,291	5,291
Additional paid-in capital		40,606	40,505
Retained earnings		10,002	9,644
Common shares in treasury, at cost	32	(7)	(4)
Accumulated other comprehensive income (loss), net of tax		(1,118)	421
Total shareholders' equity		**54,774**	55,857
Additional equity components		5,824	4,665
Noncontrolling interests		1,587	1,638
Total equity		**62,184**	62,160
Total liabilities and equity		**1,324,961**	1,297,674

[1] Includes non-current assets and disposal groups held for sale.

The accompanying notes are an integral part of the Consolidated Financial Statements.

Consolidated statement of changes in equity

in € m.	Common shares (no par value)	Additional paid-in capital	Retained earnings	Common shares in treasury, at cost	Unrealized net gains (losses): On financial assets available for sale, net of tax[2]	Unrealized net gains (losses): On financial assets at fair value through other comprehensive income, net of tax[2]	Unrealized net gains (losses): Attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax[2]	Unrealized net gains (losses): On derivatives hedging variability of cash flows, net of tax[2]	Unrealized net gains (losses): On assets classified as held for sale, net of tax[2]	Foreign currency translation, net of tax[2]	Unrealized net gains (losses) from equity method investments	**Accumulated other comprehensive income, net of tax[1]**	Total shareholders' equity	Additional equity components[3]	Noncontrolling interests	Total equity
Balance as of December 31, 2017	5,291	39,918	17,454	(9)	689	0	0	18	0	(227)	40	520	63,174	4,675	250	68,099
IFRS 9 introduction impact	0	(2)	(301)	0	(689)	394	(16)	0	0	(45)	(12)	(368)	(671)	0	(1)	(672)
Balance as of January 1, 2018 (IFRS 9)	5,291	39,916	17,153	(9)	0	394	(16)	18	0	(272)	28	152	62,503	4,675	249	67,427
Total comprehensive income (loss), net of tax[1]	0	0	267	0	0	(428)	44	(1)	0	500	(14)	101	368	0	122	490
Gains (losses) attributable to equity instruments designated as at fair value through other comprehensive income, net of tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gains (losses) upon early extinguishment attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash dividends paid	0	0	(227)	0	0	0	0	0	0	0	0	0	(227)	0	(8)	(235)
Coupon on additional equity components, net of tax	0	0	(292)	0	0	0	0	0	0	0	0	0	(292)	0	0	(292)
Remeasurement gains (losses) related to defined benefit plans, net of tax	0	0	(186)	0	0	0	0	0	0	0	0	0	(186)	0	(12)	(198)
Net change in share awards in the reporting period	0	90	0	0	0	0	0	0	0	0	0	0	90	0	23	112
Treasury shares distributed under share-based compensation plans	0	0	0	199	0	0	0	0	0	0	0	0	199	0	0	199
Tax benefits related to share-based compensation plans	0	(5)	0	0	0	0	0	0	0	0	0	0	(5)	0	1	(4)
Option premiums and other effects from options on common shares	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases of treasury shares	0	0	0	(4,119)	0	0	0	0	0	0	0	0	(4,119)	0	0	(4,119)
Sale of treasury shares	0	0	0	3,914	0	0	0	0	0	0	0	0	3,914	0	0	3,914
Net gains (losses) on treasury shares sold	0	(2)	0	0	0	0	0	0	0	0	0	0	(2)	0	0	(2)
Other	0	253[4]	0	0	0	0	0	0	0	0	0	0	253[4]	0	1,193[4]	1,446
Balance as of December 31, 2018	5,291	40,252	16,714	(15)	0	(34)	28	17	0	228	15	253	62,495	4,675	1,568	68,737
IFRS 16 transition impact	0	0	(136)	0	0	0	0	0	0	0	0	0	(136)	0	0	(137)
Balance as of January 1, 2019 (IFRS 16)	5,291	40,252	16,578	(15)	0	(34)	28	17	0	228	15	253	62,358	4,675	1,568	68,601
Total comprehensive income (loss), net of tax[1]	0	0	(5,390)	0	0	79	(2)	(3)	0	108	(15)	168	(5,222)	0	142	(5,079)
Gains (losses) attributable to equity instruments designated as at fair value through other comprehensive income, net of tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gains (losses) upon early extinguishment attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash dividends paid	0	0	(227)	0	0	0	0	0	0	0	0	0	(227)	0	(59)	(286)
Coupon on additional equity components, before tax	0	0	(330)[5]	0	0	0	0	0	0	0	0	0	(330)[5]	0	0	(330)
Remeasurement gains (losses) related to defined benefit plans, net of tax	0	0	(987)	0	0	0	0	0	0	0	0	0	(987)	0	(7)	(994)
Net change in share awards in the reporting period	0	118	0	0	0	0	0	0	0	0	0	0	118	0	2	119
Treasury shares distributed under share-based compensation plans	0	0	0	185	0	0	0	0	0	0	0	0	185	0	0	185
Tax benefits related to share-based compensation plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Option premiums and other effects from options on common shares	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases of treasury shares	0	0	0	(1,359)	0	0	0	0	0	0	0	0	(1,359)	0	0	(1,359)
Sale of treasury shares	0	0	0	1,185	0	0	0	0	0	0	0	0	1,185	0	0	1,185
Net gains (losses) on treasury shares sold	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	3
Other	0	133	0	0	0	0	0	0	0	0	0	0	133	(10)[6]	(9)	114
Balance as of December 31, 2019	5,291	40,505	9,644	(4)	0	45	25	14	0	336	0	421	55,857	4,665	1,638	62,160

in € m.	Common shares (no par value)	Additional paid-in capital	Retained earnings	Common shares in treasury, at cost	Unrealized net gains (losses)					Foreign currency translation, net of tax[2]	Unrealized net gains (losses) from equity method investments	**Accumulated other comprehensive income, net of tax[1]**	Total shareholders' equity	Additional equity components[3]	Noncontrolling interests	Total equity
					On financial assets available for sale, net of tax[2]	On financial assets at fair value through other comprehensive income, net of tax[2]	Attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax[2]	On derivatives hedging variability of cash flows, net of tax[2]	On assets classified as held for sale, net of tax[2]							
Total comprehensive income (loss), net of tax[1]	0	0	483	0	0	233	(18)	(7)	0	(1,747)	(1)	(1,539)	(1,056)	0	57	(999)
Gains (losses) attributable to equity instruments designated as at fair value through other comprehensive income, net of tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gains (losses) upon early extinguishment attributable to change in own credit risk of financial liabilities designated as at fair value through profit and loss, net of tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash dividends paid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(77)	(77)
Coupon on additional equity components, before tax	0	0	(349)[5]	0	0	0	0	0	0	0	0	0	(349)[5]	0	0	(349)
Remeasurement gains (losses) related to defined benefit plans, net of tax	0	0	223	0	0	0	0	0	0	0	0	0	223	0	2	225
Net change in share awards in the reporting period	0	(131)	0	0	0	0	0	0	0	0	0	0	(131)	0	(4)	(135)
Treasury shares distributed under share-based compensation plans	0	0	0	208	0	0	0	0	0	0	0	0	208	0	0	208
Tax benefits related to share-based compensation plans	0	11	0	0	0	0	0	0	0	0	0	0	11	0	0	11
Option premiums and other effects from options on common shares	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases of treasury shares	0	0	0	(279)	0	0	0	0	0	0	0	0	(279)	0	0	(279)
Sale of treasury shares	0	0	0	68	0	0	0	0	0	0	0	0	68	0	0	68
Net gains (losses) on treasury shares sold	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	221	0	0	0	0	0	0	0	0	0	0	221	1,159[6]	(28)	1,352
Balance as of December 31, 2020	**5,291**	**40,606**	**10,002**	**(7)**	0	278	7	7	0	(1,411)	(1)	**(1,118)**	**54,774**	**5,824**	**1,587**	**62,184**

[1] Excluding remeasurement gains (losses) related to defined benefit plans, net of tax.
[2] Excluding unrealized net gains (losses) from equity method investments.
[3] Includes Additional Tier 1 Notes, which constitute unsecured and subordinated notes of Deutsche Bank and are classified as equity in accordance with IFRS.
[4] Includes the impact from the initial public offering of DWS Group GmbH & Co. KGaA.
[5] Since 2019 tax impact is recognized in net income (loss) directly.
[6] Includes net proceeds from issuance, purchase and sale of Additional Equity Components.

Consolidated statement of cash flows

in € m.	2020	2019	2018
Net Income (loss)	**612**	(5,265)	341
Cash flows from operating activities:			
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Provision for credit losses	1,792	723	525
Restructuring activities	485	644	360
Gain on sale of financial assets at fair value through other comprehensive income, equity method investments and other	(665)	(277)	(619)
Deferred income taxes, net	(301)	1,868	276
Impairment, depreciation and other amortization, and accretion	1,896	3,993	2,391
Share of net income from equity method investments	(103)	(104)	(129)
Income (loss) adjusted for noncash charges, credits and other items	**3,717**	1,582	3,145
Adjustments for net change in operating assets and liabilities:			
Interest-earning time deposits with central banks and banks	(1,202)	(1,203)	(10,954)
Central bank funds sold, securities purchased under resale agreements, securities borrowed	5,688	(2,529)	15,004
Non-Trading financial assets mandatory at fair value through profit and loss	8,597	11,403	(98,560)
Financial assets designated at fair value through profit or loss	(430)	101	91,176
Loans at amortized cost	(780)	(27,335)	302
Other assets	(11,743)	7,464	6,284
Deposits	(2,159)	6,432	(16,763)
Financial liabilities designated at fair value through profit or loss and investment contract liabilities[1]	(3,233)	(3,766)	(10,549)
Central bank funds purchased, securities sold under repurchase agreements, securities loaned	678	(4,871)	(16,716)
Other short-term borrowings	(1,638)	(8,954)	(4,266)
Other liabilities	7,030	(16,563)	(19,119)
Senior long-term debt[2]	13,282	(16,112)	(6,840)
Trading assets and liabilities, positive and negative market values from derivative financial instruments, net	9,854	22,559	20,542
Other, net	3,075	(8,657)	(6,858)
Net cash provided by (used in) operating activities	**30,736**	(40,449)	(54,172)
Cash flows from investing activities:			
Proceeds from:			
Sale of financial assets at fair value through other comprehensive income	38,325	23,721	22,126
Maturities of financial assets at fair value through other comprehensive income	32,964	40,806	26,001
Sale of debt securities held to collect at amortized cost	10,110	390	94
Maturities of debt securities held to collect at amortized cost	4,890	964	1,904
Sale of equity method investments	69	9	30
Sale of property and equipment	24	92	356
Purchase of:			
Financial assets at fair value through other comprehensive income	(82,709)	(56,568)	(41,031)
Debt Securities held to collect at amortized cost	(4,011)	(20,134)	(309)
Equity method investments	(3)	(17)	(1)
Property and equipment	(512)	(327)	(465)
Net cash received in (paid for) business combinations/divestitures	5	1,762	220
Other, net	(1,045)	(978)	(1,291)
Net cash provided by (used in) investing activities	**(1,892)**	(10,280)	7,634
Cash flows from financing activities:			
Issuances of subordinated long-term debt	1,684[3]	47	68
Repayments and extinguishments of subordinated long-term debt	(1,168)[3]	(152)	(1,171)
Issuances of trust preferred securities	0[4]	0	4
Repayments and extinguishments of trust preferred securities	(676)[4]	(1,235)	(2,733)
Principal portion of lease payments	(653)	(659)	N/A
Common shares issued	0	0	0
Purchases of treasury shares	(279)	(1,359)	(4,119)
Sale of treasury shares	76	1,191	3,912
Additional Equity Components (AT1) issued	1,153	0	0
Purchases of Additional Equity Components (AT1)	(792)	(131)	(236)
Sale of Additional Equity Components (AT1)	798	121	234
Coupon on additional equity components, pre tax	(349)	(330)	(315)
Dividends paid to noncontrolling interests	(77)	(59)	(8)
Net change in noncontrolling interests	(28)	(9)	1,205
Cash dividends paid to Deutsche Bank shareholders	0	(227)	(227)
Other, net	0	0	52
Net cash provided by (used in) financing activities	**(311)**	(2,802)	(3,334)
Net effect of exchange rate changes on cash and cash equivalents	**(1,074)**	1,578	1,668
Net increase (decrease) in cash and cash equivalents	27,459	(51,953)	(48,203)
Cash and cash equivalents at beginning of period	128,869	180,822	229,025
Cash and cash equivalents at end of period	156,328	128,869	180,822

in € m.	2020	2019	2018
Net cash provided by (used in) operating activities include			
Income taxes paid (received), net	805	945	468
Interest paid	7,062	11,493	11,743
Interest received	18,645	23,748	22,408
Dividends received	307	1,309	2,186
Cash and cash equivalents comprise			
Cash and central bank balances (not included: Interest-earning time deposits with central banks)	149,323	121,412	174,059
Interbank balances (w/o central banks) (not included: time deposits with banks of € 19.0 billion as of December 31, 2020, € 18.4 billion as of December 31, 2019 and € 16.8 billion as of December 31, 2018)	7,006	7,457	6,763
Total	**156,328**	128,869	180,822

[1] Included are senior long-term debt issuances of € 2.3 billion and € 3.1 billion and repayments and extinguishments of € 3.5 billion and € 4.4 billion through December 31, 2020 and December 31, 2019, respectively.
[2] Included are issuances of € 67.4 billion and € 23.4 billion and repayments and extinguishments of € 51.4 billion and € 42.7 billion through December 31, 2020 and December 31, 2019, respectively.
[3] Non-cash changes for Subordinated Long Term Debt are € (114) million in total, mainly driven by Foreign Exchange movements € (293) million and Fair Value changes of € 177 million.
[4] Non-cash changes for Trust Preferred Securities are € (15) million in total and driven by Foreign Exchange movements of € (18) million and Fair Value changes of € 12 million.

The accompanying notes are an integral part of the Consolidated Financial Statements.

Notes to the consolidated financial statements

01 – Significant accounting policies and critical accounting estimates

Basis of accounting

Deutsche Bank Aktiengesellschaft, Frankfurt am Main ("Deutsche Bank" or the "Parent") is a stock corporation organized under the laws of the Federal Republic of Germany. Deutsche Bank together with all entities in which Deutsche Bank has a controlling financial interest (collectively the "Group", "Deutsche Bank" or "DB") is a global provider of a full range of corporate and investment banking, private clients and asset management products and services.

The accompanying consolidated financial statements are stated in euros, the presentation currency of the Group. All financial information presented in million euros has been rounded to the nearest million. The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB").

EU carve-out

For purposes of the Group's primary financial reporting outside the United States, the Group prepares its consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and endorsed by the EU. As a result, the Group applies fair value hedge accounting for portfolio hedges of interest rate risk (fair value macro hedges) in accordance with the European Union (EU) carve out version of IAS 39. The purpose of applying the EU carve out version of IAS 39 is to align the Group's hedge accounting approach with its risk management practice and the accounting practice of its major European peers. Under the EU carve out version of IAS 39, fair value macro hedge accounting may be applied to core deposits and hedge ineffectiveness is only recognized when the revised estimate of the amount of cash flows in scheduled time buckets falls below the original designated amount of that bucket. If the revised amount of cash flows in scheduled time buckets is more than the original designated amount then there is no hedge ineffectiveness. Under IFRS as issued by the IASB, hedge accounting for fair value macro hedges cannot be applied to core deposits. In addition, under IFRS as issued by the IASB hedge ineffectiveness arises for all fair value macro hedge accounting relationships whenever the revised estimate of the amount of cash flows in scheduled time buckets is either more or less than the original designated amount of that bucket.

The application of the EU carve-out version of IAS 39 was only applied for the financial year ended December 31, 2020 and had a positive impact of € 18 million on net revenues and profit before tax and of € 12 million on profit after tax. The impact on profit after tax also impacts the calculation of equity on the balance sheet by € 12 million. Effective as of January 1, 2020, the Group's regulatory capital and ratios thereof are also reported on the basis of applying the EU carve out version of IAS 39, in both the primary financial statements and the versions thereof included herein. This impacts the calculation of CET 1 capital, Tier 1 capital, Total capital and ratios based thereon, including the Leverage ratio, as the amount of profit after tax impacts the equity balance. As of December 31, 2020, this had a positive impact of less than 1 basis point on the CET 1 capital ratio.

IFRS 7 disclosures

Disclosures about the nature and the extent of risks arising from financial instruments as required by IFRS 7, "Financial Instruments: Disclosures" are set forth in the Risk Report section of the Management Report and are an integral part of the Consolidated Financial Statements. These audited disclosures are identified by grey shading in the Risk report.

COVID-19 related disclosures

The impact of the COVID-19 pandemic on the Group's financial statements is reflected as follows:

The Management Report section includes the impact of COVID-19 on the Group's financial targets and client franchise, on the Global Economy and on the Macroeconomic and market conditions in the chapters Strategy, Outlook and Risks and Opportunities, respectively.

The Risk Report section includes references to the COVID-19 pandemic in the Risk and Capital Management chapter, specifically in the line items "Forward-looking-information", "Application of EBA guidance regarding Default, Forbearance and IFRS 9 in light of COVID-19 measures", "Legislative and non-legislative moratoria and public guarantee schemes", "ECL

Model" and "Focus Industries". The Risk and Capital Performance chapter includes the impact of supervisory measures in reaction to the COVID-19 pandemic in the line item "Minimum capital requirements and additional capital buffers".

The accompanying consolidated financial statements include COVID-19 related disclosures in the notes 5 "Net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss", 13 "Financial instruments measured at fair value", 23 "Goodwill and Other Intangible Assets" and 33 "Employee Benefits".

The section Supplementary Information (Unaudited) describes the impact of COVID-19 on the Group transformation charges in the Non-GAAP Financial Measures chapter.

Change in accounting treatment of purchased financial guarantees

In the second quarter of 2020, the Group changed its accounting policies for purchased contracts that meet the definition of a financial guarantee under IFRS 9. Previously, the Group accounted for purchased financial guarantees as contingent assets and did not recognize the reimbursement gain as Other Income (loss) in the Group's Consolidated Statement of Income until the Group received payment from the guarantor. Under the Group's new accounting policy, purchased financial guarantees are deemed to result in reimbursements under IAS 37 to the extent that the financial guarantee is entered into to mitigate the credit exposure from debt instruments with Hold to Collect (HTC) or Hold to Collect and Sell (HTC&S) business models. The new accounting policy results in recognition of a reimbursement asset for subsequent increases in the expected credit losses, to the extent it is virtually certain that the purchased financial guarantee will reimburse the Group for the loss incurred. Accordingly, when the credit risk of the borrower significantly deteriorates a reimbursement asset is recognized equal to the life-time expected credit losses and is presented as Other Assets in the Group's Consolidated Balance Sheet. The corresponding reimbursement gain is recognized as a reduction in the Provision for credit losses in the Group's Consolidated Statement of Income. Purchased financial guarantees entered into to mitigate credit exposure from debt instruments included in the Other business model are accounted for at fair value through profit or loss. The new accounting policy more appropriately aligns the measurement basis and income statement presentation of the debt instruments and associated purchased financial guarantees. It therefore more accurately presents the credit exposure and provision for credit losses in the financial statements resulting in the presentation of more relevant information. The adoption of the changes for the financial year ended December 31, 2020 did not have a material impact to the Group's Consolidated Statement of Income.

Revision in estimate of contractual redemption payment from CLO's issued

In the second quarter of 2020, the Group refined its estimation of contractual cash flows from Collateralized Loan Obligations (CLO's) issued that mitigate credit exposure from debt instruments with HTC or HTC&S business models. Under this refinement, the Group revises its estimated contractual redemption payment from the CLO when the credit risk of a borrower covered by the embedded financial guarantee in the CLO significantly deteriorates. The Group revises its estimated contractual redemption payment under the CLO based on the life-time expected credit losses of the debt instrument (to the extent covered by the CLO). The refinement in the estimate of the contractual cashflows reduced the Group's interest expense for financial year ended December 31, 2020, by € 44.5 million.

Valuation adjustments for defined benefit pension plans

For the Group's most significant pension plans in the key countries, the discount rate used at each measurement date is set based on a high quality corporate bond yield curve, which is derived using a bond universe sourced from reputable third-party index data providers and rating agencies, and reflects the timing, amount and currency of the future expected benefit payments for the respective plan. A review of the Eurozone discount rate derivation was instigated in March 2020 following unprecedented market turmoil, which resulted in several refinements to the methodology being implemented in 2020, initially in Q1 and more fundamentally in Q4 with the introduction of an internally produced DB Proprietary curve, which was employed as the basis for discounting the defined benefit obligation from December 31, 2020. Compared to the curve deployed at December 31, 2019, the DB Proprietary curve results in a defined benefit obligation that is € 20 million higher, with the impact recognized through Other Comprehensive Income. The defined benefit obligation was € 435 million lower as at December 31, 2020 compared to curve utilized as at June 30, 2020. Due to the change in discount rate methodology and other effects, the Group's net pension liability for the German pension plans was reduced by € 481 million from € 1,355 million as of December 31, 2019 to € 874 million as of December 31, 2020.

In the financial year ended December 31, 2020, the Group recognized € 48 million of negative past service costs in connection with the inclusion of a lump-sum payment option to one of the German retirement benefit arrangements in the Private Bank division. This reduction in defined benefit plan obligations was reported in Compensation and benefits in the Consolidated Statement of Income.

Adjustment of compensation expense

Due to recent developments and historical experience, the Group has in the second quarter of 2020 changed its estimate of the service period for certain compensation awards granted to employees to recognize compensation expense over the respective vesting periods in which the related employee services are rendered. As a result of the change in estimate, the Group reported a benefit of approximately € 105 million in "Compensation and benefits" in the Group's Consolidated Statement of Income in the second quarter 2020, and a benefit of approximately € 115 million due to the change in the ongoing rate of expense for the financial year ended December 31, 2020.

Critical accounting estimates

The preparation of financial statements under IFRS requires management to make estimates and assumptions for certain categories of assets and liabilities. These estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the balance sheet date, and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from management's estimates, especially in relation to the COVID-19 crisis. The Group's significant accounting policies are described in "Significant Accounting Policies".

Certain of the Group's accounting policies require critical accounting estimates that involve complex and subjective judgments and the use of assumptions, some of which may be for matters that are inherently uncertain and susceptible to change. Such critical accounting estimates could change from period to period and may have a material impact on the Group's financial condition, changes in financial condition or results of operations. Critical accounting estimates could also involve estimates where management could have reasonably used another estimate in the current accounting period. The Group has identified the following significant accounting policies that involve critical accounting estimates:

- the impairment of associates (see "Associates" below)
- the impairment of financial assets at fair value through other comprehensive income (see "Financial Assets – Financial Assets at Fair Value through Other Comprehensive Income" below)
- the determination of fair value (see "Determination of Fair Value" below)
- the recognition of trade date profit (see "Recognition of Trade Date Profit" below)
- the impairment of loans and provisions for off-balance sheet positions (see "Impairment of Loans and Provision for Off-balance Sheet Positions" below)
- the impairment of goodwill and other intangibles (see "Goodwill and Other Intangible Assets" below)
- the recognition and measurement of deferred tax assets (see "Income Taxes" below)
- the accounting for legal and regulatory contingencies and uncertain tax positions (see "Provisions" below)

Significant accounting policies

The following is a description of the significant accounting policies of the Group. Except for the changes in accounting policies and changes in accounting estimates described previously and noted below these policies have been consistently applied for 2018, 2019 and 2020.

Principles of consolidation

The financial information in the Consolidated Financial Statements includes the parent company, Deutsche Bank AG, together with its consolidated subsidiaries, including certain structured entities presented as a single economic unit.

Subsidiaries

The Group's subsidiaries are those entities which it directly or indirectly controls. Control over an entity is evidenced by the Group's ability to exercise its power in order to affect any variable returns that the Group is exposed to through its involvement with the entity.

The Group sponsors the formation of structured entities and interacts with structured entities sponsored by third parties for a variety of reasons, including allowing clients to hold investments in separate legal entities, allowing clients to invest jointly in alternative assets, for asset securitization transactions, and for buying or selling credit protection.

When assessing whether to consolidate an entity, the Group evaluates a range of control factors, namely:

- the purpose and design of the entity
- the relevant activities and how these are determined
- whether the Group's rights result in the ability to direct the relevant activities

- whether the Group has exposure or rights to variable returns
- whether the Group has the ability to use its power to affect the amount of its returns

Where voting rights are relevant, the Group is deemed to have control where it holds, directly or indirectly, more than half of the voting rights over an entity unless there is evidence that another investor has the practical ability to unilaterally direct the relevant activities.

Potential voting rights that are deemed to be substantive are also considered when assessing control.

Likewise, the Group also assesses existence of control where it does not control the majority of the voting power but has the practical ability to unilaterally direct the relevant activities. This may arise in circumstances where the size and dispersion of holdings of the shareholders give the Group the power to direct the activities of the investee.

The Group reassesses the consolidation status at least at every quarterly reporting date. Therefore, any changes in the structure leading to a change in one or more of the control factors, require reassessment when they occur. This includes changes in decision making rights, changes in contractual arrangements, changes in the financing, ownership or capital structure as well as changes following a trigger event which was anticipated in the original documentation.

All intercompany transactions, balances and unrealized gains on transactions between Group companies are eliminated on consolidation.

Consistent accounting policies are applied throughout the Group for the purposes of consolidation. Issuances of a subsidiary's stock to third parties are treated as non-controlling interests. Profit or loss attributable to non-controlling interests are reported separately in the Consolidated Statement of Income and Consolidated Statement of Comprehensive Income.

At the date that control of a subsidiary is lost, the Group a) derecognizes the assets (including attributable goodwill) and liabilities of the subsidiary at their carrying amounts, b) derecognizes the carrying amount of any non-controlling interests in the former subsidiary, c) recognizes the fair value of the consideration received and any distribution of the shares of the subsidiary, d) recognizes any investment retained in the former subsidiary at its fair value and e) recognizes any resulting difference of the above items as a gain or loss in the income statement. Any amounts recognized in prior periods in other comprehensive income in relation to that subsidiary would be reclassified to the Consolidated Statement of Income or transferred directly to retained earnings if required by other IFRSs.

Associates

Investments in associates are accounted for under the equity method of accounting. An associate is an entity in which the Group has significant influence, but not a controlling interest, over the operating and financial management policy decisions of the entity. Significant influence is generally presumed when the Group holds between 20 % and 50 % of the voting rights. The existence and effect of potential voting rights that are currently exercisable or convertible are considered in assessing whether the Group has significant influence. Among the other factors that are considered in determining whether the Group has significant influence are representation on the board of directors (supervisory board in the case of German stock corporations) and material intercompany transactions. The existence of these factors could require the application of the equity method of accounting for a particular investment even though the Group's investment is less than 20 % of the voting stock.

Under the equity method of accounting, the Group's investments in associates and jointly controlled entities are initially recorded at cost including any directly related transaction costs incurred in acquiring the associate, and subsequently increased (or decreased) to reflect both the Group's pro-rata share of the post-acquisition net income (or loss) of the associate or jointly controlled entity and other movements included directly in the equity of the associate or jointly controlled entity. The Group's share of the results of associates is adjusted to conform to the accounting policies of the Group and is reported in the Consolidated Statement of Income as Net income (loss) from equity method investments. The Group's share in the associate's profits and losses resulting from intercompany sales is eliminated on consolidation. Goodwill arising on the acquisition of an associate or a jointly controlled entity is included in the carrying value of the investment. As goodwill is not reported separately it is not specifically tested for impairment. Rather, the entire equity method investment is tested for impairment at each balance sheet date.

If there is objective evidence of impairment, an impairment test is performed by comparing the investment's recoverable amount, which is the higher of its value in use and fair value less costs to sell, with its carrying amount. An impairment loss recognized in prior periods is only reversed if there has been a positive change in the estimates used to determine the investment's recoverable amount since the last impairment loss was recognized. If this is the case the carrying amount of the investment is increased to its higher recoverable amount. The increased carrying amount of the investment in the associate attributable to a reversal of an impairment loss shall not exceed the carrying amount that would have been determined had no impairment loss been recognized for the investment in prior years.

At the date that the Group ceases to have significant influence over the associate or jointly controlled entity the Group recognizes a gain or loss on the disposal of the equity method investment equal to the difference between the sum of the fair value of any retained investment and the proceeds from disposing of the associate and the carrying amount of the investment. Amounts recognized in prior periods in other comprehensive income in relation to the associate are accounted for on the same basis as would have been required if the investee had directly disposed of the related assets or liabilities.

Critical accounting estimates: The assessment of whether there is objective evidence of impairment may require significant management judgment and the estimates for impairment could change from period to period based on future events that may or may not occur. The Group considers this to be a critical accounting estimate.

Foreign currency translation

The Consolidated Financial Statements are prepared in euro, which is the presentation currency of the Group. Various entities in the Group use a different functional currency, being the currency of the primary economic environment in which the entity operates.

An entity records foreign currency revenues, expenses, gains and losses in its functional currency using the exchange rates prevailing at the dates of recognition.

Monetary assets and liabilities denominated in currencies other than the entity's functional currency are translated at the period end closing rate. Foreign exchange gains and losses resulting from the translation and settlement of these items are recognized in the Consolidated Statement of Income as net gains (losses) on financial assets/liabilities at fair value through profit or loss in order to align the translation amounts with those recognized from foreign currency related transactions (derivatives) which hedge these monetary assets and liabilities.

Non-monetary items that are measured at historical cost are translated using the historical exchange rate at the date of the transaction. Translation differences on non-monetary items which are held at fair value through profit or loss are recognized in profit or loss.

For purposes of translation into the presentation currency, assets and liabilities of foreign operations are translated at the period end closing rate and items of income and expense are translated into euros at the rates prevailing on the dates of the transactions, or average rates of exchange where these approximate actual rates. The exchange differences arising on the translation of a foreign operation are included in other comprehensive income. For foreign operations that are subsidiaries, the amount of exchange differences attributable to any non-controlling interests is recognized in non-controlling interests.

Upon disposal of a foreign subsidiary and associate (which results in loss of control or significant influence over that operation) the total cumulative exchange differences recognized in other comprehensive income are reclassified to profit or loss.

Upon partial disposal of a foreign operation that is a subsidiary and which does not result in loss of control, the proportionate share of cumulative exchange differences is reclassified from other comprehensive income to non-controlling interests as this is deemed a transaction with equity holders. For a partial disposal of an associate which does not result in a loss of significant influence, the proportionate share of cumulative exchange differences is reclassified from other comprehensive income to profit or loss.

Interest, commissions and fees

Net interest income – Interest income and expense from all interest-bearing assets and liabilities is recognized as net interest income using the effective interest method. The effective interest rate (EIR) is a method of calculating the amortized cost of a financial asset or a financial liability and of allocating the interest income or expense over the relevant period using the estimated future cash flows.

The estimated future cash flows used in the EIR calculation include those determined by all of the contractual terms of the asset or liability, all fees (including commissions) that are considered to be integral to the effective interest rate, direct and incremental transaction costs and all other premiums or discounts. However, if the financial instrument is carried at fair value through profit or loss, any associated fees are recognized in trading income when the instrument is initially recognized, provided there are no significant unobservable inputs used in determining its fair value.

If a financial asset is credit impaired interest revenue is calculated by applying the effective interest rate to the amortized cost amount. The amortized cost amount of a financial asset is the gross carrying amount of a financial asset after adjusting for any impairment allowance. For assets which are initially recognized as purchased or credit impaired, interest revenue is calculated through the use of a credit-adjusted effective interest rate which takes into consideration expected credit losses.

The Group presents negative interest paid on interest-bearing assets as interest expense, and interest revenue received from interest-bearing liabilities as interest income.

Commissions and fee income –The Group applies the IFRS 15, "Revenue from Contracts with Customers" five-step revenue recognition model to the recognition of Commissions and Fee Income, under which income must be recognized when control of goods and services is transferred, hence the contractual performance obligations to the customer has been satisfied.

Accordingly, after a contract with a customer has been identified in the first step, the second step is to identify the performance obligation – or a series of distinct performance obligations – provided to the customer. The Group must examine whether the service is capable of being distinct and is actually distinct within the context of the contract. A promised service is distinct if the customer can benefit from the service either on its own or together with other resources that are readily available to the customer, and the promise to transfer the service to the customer is separately identifiable from other promises in the contract. The amount of income is measured on the basis of the contractually agreed transaction price for the performance obligation defined in the contract. If a contract includes a variable consideration, the Group estimates the amount of consideration to which it will be entitled in exchange for transferring the promised goods or services to a customer. Income is recognized in profit and loss when the identified performance obligation has been satisfied. The Group does not present information about its remaining performance obligations if it is part of a contract that has an original expected duration of one year or less.

The Group determines the stand-alone selling price at contract inception of a distinct service underlying each performance obligation in the contract and allocates the transaction price in proportion to those stand-alone selling prices. The stand-alone selling price is the price at which DB would sell a promised service separately to a customer on an unbundled basis. The best evidence of a stand-alone selling price is the observable price of a service when the Group sells that service separately in similar circumstances and to similar customers. If the Group does not sell the service to a customer separately, it estimates the stand-alone selling price at an amount using a suitable method, for example, in loan syndication transactions the Group applies the requirements for recognition of trade day profit and considers the price at which other market participants provide the same service on an unbundled basis. As such when estimating a stand-alone selling price, the Group considers all information (including market conditions) that is reasonably available to it. In doing so, the Group maximizes the use of observable inputs and applies estimation methods consistently in similar circumstances.

The Group provides asset management services that give rise to asset management and performance fees and constitute a single performance obligation. The asset management and performance fee components are variable considerations such that at each reporting date the Group estimates the fee amount to which it will be entitled in exchange for transferring the promised services to the customer. The benefits arising from the asset management services are simultaneously received and consumed by the customer over time. The Group recognizes revenue over time by measuring the progress towards complete satisfaction of that performance obligation, subject to the removal of any uncertainty as to whether it is highly probable that a significant reversal in the cumulative amount of revenue recognized would occur or not. For the management fee component this is the end of the monthly or quarterly service period. For performance fees this date is when any uncertainty related to the performance component has been fully removed.

Loan commitment fees related to commitments that are accounted for off balance sheet are recognized in commissions and fee income over the life of the commitment if it is unlikely that the Group will enter into a specific lending arrangement. If it is probable that the Group will enter into a specific lending arrangement, the loan commitment fee is deferred until the origination of a loan and recognized as an adjustment to the loan's effective interest rate.

Commissions and Fee Income predominantly earned from services that are received and consumed by the customer over time: Administration, assets under management, foreign commercial business, loan processing and guarantees sundry other customer services. The Group recognizes revenue from these services over time by measuring the progress towards complete satisfaction of that performance obligation, subject to the removal of any uncertainty as to whether it is highly probable that a significant reversal in the cumulative amount of revenue recognized would occur or not.

Commissions and Fee Income predominantly earned from providing services at a point in time or transaction-type services include: other securities, underwriting and advisory fees, brokerage fees, local payments, foreign currency/ exchange business and intermediary fees.

Expenses that are directly related and incremental to the generation of Commissions and Fee Income are presented net in Commissions and Fee Income in the Consolidated Statement of Income. This includes income and associated expense where the Group contractually owns the performance obligation (i.e. as Principal) in relation to the service that gives rise to the revenue and associated expense. In contrast, it does not include situations where the Group does not contractually own the performance obligation and is acting as agent. The determination of whether the Group is acting as principal or agent is based on the contractual terms of the underlying service arrangement. The gross Commissions and Fee Income and Expense amounts are disclosed in "Note 6 – Commissions and Fee Income".

Financial assets

The Group classifies financial assets in line with the classification and measurement requirements of IFRS 9, where financial assets are classified based on both the business model used for managing the financial assets and the contractual cash flow characteristics of the financial asset (known as Solely Payments of Principal and Interest or “SPPI”). There are three business models available:

- Hold to Collect - Financial assets held with the objective to collect contractual cash flows. They are subsequently measured at amortized cost and are recorded in multiple lines on the Group’s consolidated balance sheet.
- Hold to Collect and Sell - Financial assets held with the objective of both collecting contractual cash flows and selling financial assets. They are recorded as Financial assets at Fair Value through Other Comprehensive Income on the Group’s consolidated balance sheet.
- Other - Financial assets that do not meet the criteria of either “Hold to Collect” or “Hold to Collect and Sell”. They are recorded as Financial Assets at Fair Value through Profit or Loss on the Group’s consolidated balance sheet.

The assessment of business model requires judgment based on facts and circumstances upon initial recognition. As part of this assessment, the Group considers quantitative factors (e.g., the expected frequency and volume of sales) and qualitative factors such as how the performance of the business model and the financial assets held within that business model are evaluated and reported to the Group’s key management personnel. In addition to taking into consideration the risks that affect the performance of the business model and the financial assets held within that business model, in particular, the way in which those market and credit risks are managed; and how managers of the business are compensated (e.g., whether the compensation is based on the fair value of the assets managed or on the contractual cash flows collected). This assessment results in an asset being classified in either a Hold to Collect, Hold to Collect and Sell or Other business model.

If the Group holds a financial asset either in a Hold to Collect or a Hold to Collect and Sell business model, then an assessment at initial recognition to determine whether the contractual cash flows of the financial asset are Solely Payments of Principal and Interest on the principal amount outstanding at initial recognition is required to determine the business model classification. Contractual cash flows, that are SPPI on the principal amount outstanding, are consistent with a basic lending arrangement. Interest in a basic lending arrangement is consideration for the time value of money and the credit risk associated with the principal amount outstanding during a particular period of time. It can also include consideration for other basic lending risks (e.g., liquidity risk) and costs (e.g., administrative costs) associated with holding the financial asset for a particular period of time; and a profit margin that is consistent with a basic lending arrangement.

Financial assets at fair value through profit or loss

Financial assets are classified at fair value through profit or loss if they are held in the Other business model because they are either held for trading or because they do not meet the criteria for Hold to Collect or Hold to Collect and Sell. In addition, it includes financial assets that meet the criteria for Hold to Collect or Hold to Collect and Sell business model, but the financial asset fails SPPI or where the Group designated the financial assets under the fair value option.

Financial assets classified as Financial assets at fair value through profit or loss are measured at fair value with realized and unrealized gains and losses included in Net gains (losses) on financial assets/liabilities at fair value through profit or loss. Interest on interest earning assets such as trading loans and debt securities and dividends on equity instruments are presented in Interest and Similar Income.

Financial assets classified at fair value through profit or loss are recognized or derecognized on trade date. Trade date is the date on which the Group commits to purchase or sell the asset.

Trading assets – Financial assets are classified as held for trading if they have been originated, acquired or incurred principally for the purpose of selling or repurchasing them in the near term, or they form part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit-taking. Trading assets include debt and equity securities, derivatives held for trading purposes, and trading loans. This also includes loan commitments that are allocated to the Other business model and that are presented as derivatives held for trading.

Non-trading financial assets mandatory at fair value through profit and loss –The Group assigns any non-trading financial asset that does not fall into the Hold to Collect nor Hold to Collect and Sell business models into the Other business model and classifies them as Non-Trading Financial Assets mandatory at Fair Value through Profit and Loss. This includes predominately reverse repurchase agreements which are managed on a fair value basis. Additionally, any financial asset that falls into the Hold to Collect or Hold to Collect and Sell business models for which the contractual cash flow characteristics are not SPPI is classified by the Group as Non-Trading Financial Assets Mandatory at Fair Value through Profit and Loss.

Financial assets designated at fair value through profit or loss – Certain financial assets that would otherwise be measured subsequently at amortized cost or at fair value through other comprehensive income, may be designated at Fair Value through

Profit or Loss if the designation eliminates or significantly reduces a measurement or recognition inconsistency. The use of the fair value option under IFRS 9 is limited. The Group allows the fair value option to be designated only for those financial instruments for which a reliable estimate of fair value can be obtained.

Financial assets at fair value through other comprehensive income

A financial asset shall be classified and measured at Fair Value through Other Comprehensive Income ("FVOCI"), if the financial asset is held in a Hold to Collect and Sell business model and the contractual cash flows are SPPI, unless designated under the fair value option.

Under FVOCI, a financial asset is measured at its fair value with any changes being recognized in Other Comprehensive Income ("OCI") and is assessed for impairment under the IFRS 9 expected credit loss model where provisions are recorded through profit or loss based on expectations of potential credit losses. The Group's impairment policy is described further in the section "Impairment of Loans and Provision for Off-Balance Sheet Positions (IFRS 9)". The foreign currency translation effect for FVOCI assets is recognized in profit or loss, as is the interest component by using the effective interest method. The amortization of premiums and accretion of discounts are recorded in net interest income. Realized gains and losses are reported in net gains (losses) on financial assets at FVOCI. Generally, the weighted-average cost method is used to determine the cost of FVOCI financial assets.

Financial assets classified as FVOCI are recognized or derecognized on trade date. Trade date is the date on which the Group commits to purchase or sell the asset.

It is possible to designate non-trading equity instruments as FVOCI. However, this category is expected to have limited usage by the Group and has not been used to date.

Financial assets at amortized cost

A financial asset is classified and subsequently measured at amortized cost if the financial asset is held in a Hold to Collect business model and the contractual cash flows are SPPI.

Under this measurement category, the financial asset is measured at fair value at initial recognition. Subsequently the carrying amount is reduced for principal payments, plus or minus the cumulative amortization using the effective interest method. The financial asset is assessed for impairment under the IFRS 9 expected credit loss model where provisions are recognized based on expectations of potential credit losses. The Group's impairment of financial instruments policy is described further in the section "Impairment of Loans and Provision for Off-Balance Sheet Positions (IFRS 9)". Financial assets measured at amortized cost are recognized on a settlement date basis.

Financial Assets at amortized cost include predominately Loans at amortized cost, Central bank funds sold and securities purchased under resale agreements, Securities borrowed and certain receivables presented in Other Assets.

Modification of financial assets and financial liabilities

When the terms of a financial asset are renegotiated or modified and the modification does not result in derecognition, a gain or loss is recognized in the income statement as the difference between the original contractual cash flows and the modified cash flows discounted at the original effective interest rate. The modified financial asset will continue to accrued interest at its original EIR. When a modification results in derecognition the original instrument is derecognized and the new instrument recognized at fair value.

Non-credit related or commercial renegotiations where an obligor has not experienced a significant increase in credit risk since origination, and has a readily exercisable right to early terminate the financial asset results in derecognition of the original agreement and recognition of a new financial asset based on the newly negotiated commercial terms.

For credit related modifications (i.e. those modifications due to significant increase in credit risk since inception) or those where the obligor does not have the readily exercisable right to early terminate, the Group assesses whether the modified terms result in the financial asset being significantly modified and therefore derecognized. This assessment includes a quantitative assessment of the impact of the change in cash flows from the modification of contractual terms and additionally, where necessary, a qualitative assessment of the impact of the change in the contractual terms. Where these modifications are not concluded to be significant, the financial asset is not derecognized and is accounted for as a modification as described above.

If the changes are concluded to be significant, the old instrument is derecognized and a new instrument recognized. The Group then recognizes a credit loss allowance based on 12-month expected credit losses. However, if following a modification that results in a derecognition of the original financial asset, there is evidence that the new financial asset is credit-impaired

on initial recognition; then the new financial asset should be recognized as an originated credit-impaired financial asset and initially classified in Stage 3 (refer to section “Impairment of Loans and Provision for Off-Balance Sheet Positions” below).

When the terms of a financial liability are renegotiated or modified then the Group assesses whether the modified terms result in the financial liability being significantly modified and therefore derecognized. This assessment includes a quantitative assessment of the impact of the change in cash flows from the modification of contractual terms and additionally, where necessary, a qualitative assessment of the impact of the change in the contractual terms. Where these modifications are not concluded to be significant, the financial liability is not derecognized and a gain or loss is recognized in the income statement as the difference between the original contractual cash flows and the modified cash flows discounted at the original effective interest rate. Where there is derecognition the original financial liability is derecognized and the new liability recognized at its fair value.

Loan commitments

Loan commitments remain off-balance sheet, unless allocated to the Other business model and presented as derivatives held for trading. The Group does not recognize and measure changes in fair value of off-balance sheet loan commitments that result from changes in market interest rates or credit spreads. However, as specified in the sections “Impairment of Loans and Provision for Off-Balance Sheet Positions” below, these off-balance sheet loan commitments are assessed for impairment individually and where appropriate, collectively.

Financial liabilities

Under IFRS 9 financial liabilities are measured at amortized cost using the effective interest method, except for financial liabilities at fair value through profit or loss.

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include Trading Liabilities, Financial Liabilities Designated at Fair Value through Profit or Loss and Non-Participating Investment Contracts (“Investment Contracts”). Under IFRS 9 they are carried at fair value with realized and unrealized gains and losses included in net gains (losses) on financial assets and liabilities at fair value through profit or loss. For financial liabilities designated at fair value through profit and loss the fair value movements attributable to the Group’s own credit component for fair value movements is recognized in Other Comprehensive Income.

Financial liabilities classified at fair value through profit or loss are recognized or derecognized on trade date. Trade date is the date on which the Group commits to issue or repurchase the financial liability.

Interest on interest paying liabilities are presented in interest expense for financial instruments at fair value through profit or loss.

Trading liabilities - Financial liabilities that arise from debt issued are classified as held for trading if they have been originated or incurred principally for the purpose of repurchasing them in the near term. Trading liabilities consist primarily of derivative liabilities (including certain loan commitments) and short positions. This also includes loan commitments where the resulting loan upon funding is allocated to the other business model such that the undrawn loan commitment is classified as derivatives held for trading.

Financial liabilities designated at fair value through profit or loss - Certain financial liabilities that do not meet the definition of trading liabilities are designated at fair value through profit or loss using the fair value option. To be designated at fair value through profit or loss, financial liabilities must meet one of the following criteria: (1) the designation eliminates or significantly reduces a measurement or recognition inconsistency; (2) a group of financial liabilities is managed and its performance is evaluated on a fair value basis in accordance with a documented risk management or investment strategy; or (3) the instrument contains one or more embedded derivatives unless: (a) the embedded derivative does not significantly modify the cash flows that otherwise would be required by the contract; or (b) it is clear with little or no analysis that separation is prohibited. In addition, the Group allows the fair value option to be designated only for those financial instruments for which a reliable estimate of fair value can be obtained. Financial liabilities which are designated at fair value through profit or loss, under the fair value option, include repurchase agreements, loan commitments and structured note liabilities.

Investment contracts - All of the Group’s investment contracts are unit-linked contract that match specific assets held by the Group. The contracts oblige the Group to use these assets to settle investment contract liabilities. They do not contain significant insurance risk or discretionary participation features. The contract liabilities are determined using current unit prices multiplied by the number of units attributed to the contract holders as of the balance sheet date. As this amount represents fair value, the liabilities have been classified as financial liabilities at fair value through profit or loss. Deposits collected under investment contracts are accounted for as an adjustment to the investment contract liabilities. Investment income attributable

to investment contracts is included in the consolidated statement of Income. Investment contract claims reflect the excess of amounts paid over the account balance released. Investment contract policyholders are charged fees for policy administration, investment management, surrenders or other contract services.

Embedded derivatives

Some hybrid financial liability contracts contain both a derivative and a non-derivative component. In such cases, the derivative component is termed an embedded derivative, with the non-derivative component representing the host financial liability contract. If the economic characteristics and risks of embedded derivatives are not closely related to those of the host financial liability contract and the hybrid financial liability contract itself is not carried at fair value through profit or loss, the embedded derivative is bifurcated and reported at fair value, with gains and losses recognized in net gains (losses) on financial assets/liabilities at fair value through profit or loss. The host financial liability contract will continue to be accounted for in accordance with the appropriate accounting standard. The carrying amount of an embedded derivative is reported in the same Consolidated balance sheet line item as the host financial liability contract. Certain hybrid financial liability instruments have been designated at fair value through profit or loss using the fair value option.

Financial liabilities at amortized cost

Financial liabilities measured at amortized cost include long-term and short-term debt issued which are initially measured at fair value, which is the consideration received, net of transaction costs incurred. Repurchases of issued debt in the market are treated as extinguishments and any related gain or loss is recorded in the Consolidated Statement of Income. A subsequent sale of own bonds in the market is treated as a reissuance of debt. Financial liabilities measured at amortized cost are recognized on a settlement date basis.

Offsetting of financial instruments

Financial assets and liabilities are offset, with the net amount presented in the Consolidated balance sheet, only if the Group holds a currently enforceable legal right to set off the recognized amounts and there is an intention to settle on a net basis or to realize an asset and settle the liability simultaneously. The legal right to set off the recognized amounts must be enforceable in both the normal course of business and in the event of default, insolvency or bankruptcy of both the Group and its counterparty. In all other situations they are presented gross. When financial assets and financial liabilities are offset in the Consolidated balance sheet, the associated income and expense items will also be offset in the Consolidated Statement of Income, unless specifically prohibited by an applicable accounting standard.

The majority of the offsetting applied by the Group relates to derivatives and repurchase and reverse repurchase agreements. A significant portion of offsetting is applied to interest rate derivatives and related cash margin balances, which are cleared through central clearing parties. For further information please refer to Note 17 “Offsetting Financial Assets and Financial Liabilities”.

Determination of fair value

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an arm’s length transaction between market participants at the measurement date. The fair value of instruments that are quoted in active markets is determined using the quoted prices where they represent those at which regularly and recently occurring transactions take place.

The Group measures certain portfolios of financial assets and financial liabilities on the basis of their net risk exposures when the following criteria are met:

- The group of financial assets and liabilities is managed on the basis of its net exposure to a particular market risk (or risks) or to the credit risk of a particular counterparty, in accordance with a documented risk management strategy,
- The fair values are provided to key management personnel, and
- The financial assets and liabilities are measured at fair value through profit or loss.

This portfolio valuation approach is consistent with how the Group manages its net exposures to market and counterparty credit risks.

Critical accounting estimates – The Group uses valuation techniques to establish the fair value of instruments where prices quoted in active markets are not available. Therefore, where possible, parameter inputs to the valuation techniques are based on observable data derived from prices of relevant instruments traded in an active market. These valuation techniques involve some level of management estimation and judgment, the degree of which will depend on the price transparency for the instrument or market and the instrument’s complexity.

In reaching estimates of fair value management judgment needs to be exercised. The areas requiring significant management judgment are identified, documented and reported to senior management as part of the valuation control process and the standard monthly reporting cycle. The specialist model validation and valuation control groups focus attention on the areas of subjectivity and judgment.

The level of management judgment required in establishing fair value of financial instruments for which there is a quoted price in an active market is usually minimal. Similarly there is little subjectivity or judgment required for instruments valued using valuation models which are standard across the industry and where all parameter inputs are quoted in active markets.

The level of subjectivity and degree of management judgment required is more significant for those instruments valued using specialized and sophisticated models and where some or all of the parameter inputs are less liquid or less observable. Management judgment is required in the selection and application of appropriate parameters, assumptions and modelling techniques. In particular, where data are obtained from infrequent market transactions then extrapolation and interpolation techniques must be applied. Where no market data are available for a particular instrument then pricing inputs are determined by assessing other relevant sources of information such as historical data, fundamental analysis of the economics of the transaction and proxy information from similar transactions, and making appropriate adjustment to reflect the actual instrument being valued and current market conditions. Where different valuation techniques indicate a range of possible fair values for an instrument then management has to decide what point within the range of estimates appropriately represents the fair value. Further, some valuation adjustments may require the exercise of management judgment to achieve fair value.

Financial assets and liabilities carried at fair value are required to be disclosed according to the inputs to the valuation method that are used to determine their fair value. Specifically, segmentation is required between those valued using quoted market prices in an active market (level 1), valuation techniques based on observable parameters (level 2) and valuation techniques using significant unobservable parameters (level 3). Management judgment is required in determining the category to which certain instruments should be allocated. This specifically arises when the valuation is determined by a number of parameters, some of which are observable and others are not. Further, the classification of an instrument can change over time to reflect changes in market liquidity and therefore price transparency.

The Group provides a sensitivity analysis of the impact upon the level 3 financial instruments of using a reasonably possible alternative for the unobservable parameter. The determination of reasonably possible alternatives requires significant management judgment.

For financial instruments measured at amortized cost (which include loans, deposits and short and long term debt issued) the Group discloses the fair value. Generally there is limited or no trading activity in these instruments and therefore the fair value determination requires significant management judgment.

For further discussion of the valuation methods and controls and quantitative disclosures with respect to the determination of fair value, please refer to Note 13 “Financial Instruments carried at Fair Value” and Note 14 “Fair Value of Financial Instruments not carried at Fair Value”.

Recognition of trade date profit

Trade date profit is recognized if the fair value of the financial instrument measured at fair value through profit or loss is obtained from a quoted market price in an active market, or otherwise evidenced by comparison to other observable current market transactions or based on a valuation technique incorporating observable market data. If there are significant unobservable inputs used in the valuation technique, the financial instrument is recognized at the transaction price and any profit implied from the valuation technique at trade date is deferred.

Using systematic methods, the deferred amount is recognized over the period between trade date and the date when the market is expected to become observable, or over the life of the trade (whichever is shorter). Such methodology is used because it reflects the changing economic and risk profile of the instrument as the market develops or as the instrument itself progresses to maturity. Any remaining trade date deferred profit is recognized in the Consolidated Statement of Income when the transaction becomes observable. In the rare circumstances that a trade date loss arises, it would be recognized at inception of the transaction to the extent that it is probable that a loss has been incurred and a reliable estimate of the loss amount can be made.

Critical Accounting Estimates – Management judgment is required in determining whether there exist significant unobservable inputs in the valuation technique. Once deferred, the decision to subsequently recognize the trade date profit requires a careful assessment of the then current facts and circumstances supporting observability of parameters and/or risk mitigation.

Derivatives and hedge accounting

Derivatives are used to manage exposures to interest rate, foreign currency, credit and other market price risks, including exposures arising from forecast transactions. All freestanding contracts that are considered derivatives for accounting purposes are carried at fair value on the Consolidated balance sheet regardless of whether they are held for trading or non-trading purposes.

The changes in fair value on derivatives held for trading are included in net gains (losses) on financial assets/liabilities at fair value through profit or loss.

Hedge accounting

IFRS 9 includes an accounting policy choice to defer the adoption of IFRS 9 hedge accounting and to continue with IAS 39 hedge accounting. The Group decided to exercise this accounting policy choice and did not adopt IFRS 9 hedge accounting as of January 1, 2018.

For accounting purposes there are three possible types of hedges: (1) hedges of changes in the fair value of assets, liabilities or unrecognized firm commitments (fair value hedges); (2) hedges of the variability of future cash flows from highly probable forecast transactions and floating rate assets and liabilities (cash flow hedges); and (3) hedges of the translation adjustments resulting from translating the functional currency financial statements of foreign operations into the presentation currency of the parent (hedges of net investments in foreign operations).

When hedge accounting is applied, the Group designates and documents the relationship between the hedging instrument and the hedged item as well as its risk management objective and strategy for undertaking the hedging transactions and the nature of the risk being hedged. This documentation includes a description of how the Group will assess the hedging instrument's effectiveness in offsetting the exposure to changes in the hedged item's fair value or cash flows attributable to the hedged risk. Hedge effectiveness is assessed at inception and throughout the term of each hedging relationship. Hedge effectiveness is always assessed, even when the terms of the derivative and hedged item are matched.

For hedges of changes in fair value, the changes in the fair value of the hedged asset, liability or unrecognized firm commitment, or a portion thereof, attributable to the risk being hedged, are recognized in the Consolidated Statement of Income along with changes in the entire fair value of the derivative. When hedging interest rate risk, any interest accrued or paid on both the derivative and the hedged item is reported in interest income or expense and the unrealized gains and losses from the hedge accounting fair value adjustments are reported in other revenue. Hedge ineffectiveness is reported in other revenue and is measured as the net effect of changes in the fair value of the hedging instrument and changes in the fair value of the hedged item arising from changes in the market rate or price related to the risk(s) being hedged.

If a fair value hedge of a debt instrument is discontinued prior to the instrument's maturity because the derivative is terminated or the relationship is de-designated, any remaining interest rate-related fair value adjustments made to the carrying amount of the debt instrument (basis adjustments) are amortized to interest income or expense over the remaining term of the original hedging relationship. For other types of fair value adjustments and whenever a fair value hedged asset or liability is sold or otherwise derecognized, any basis adjustments are included in the calculation of the gain or loss on derecognition.

For hedges of variability in future cash flows, there is no change to the accounting for the hedged item and the derivative is carried at fair value, with changes in value reported initially in other comprehensive income to the extent the hedge is effective. These amounts initially recorded in other comprehensive income are subsequently reclassified into the Consolidated Statement of Income in the same periods during which the forecast transaction affects the Consolidated Statement of Income. Thus, for hedges of interest rate risk, the amounts are amortized into interest income or expense at the same time as the interest is accrued on the hedged transaction.

Hedge ineffectiveness is recorded in other income and is measured as changes in the excess (if any) in the absolute cumulative change in fair value of the actual hedging derivative over the absolute cumulative change in the fair value of the hypothetically perfect hedge.

When hedges of variability in cash flows attributable to interest rate risk are discontinued, amounts remaining in accumulated other comprehensive income are amortized to interest income or expense over the remaining life of the original hedge relationship, unless the hedged transaction is no longer expected to occur in which case the amount will be reclassified into other income immediately. When hedges of variability in cash flows attributable to other risks are discontinued, the related amounts in accumulated other comprehensive income are reclassified into either the same Consolidated Statement of Income caption and period as profit or loss from the forecast transaction, or into other income when the forecast transaction is no longer expected to occur.

For hedges of the translation adjustments resulting from translating the functional currency financial statements of foreign operations (hedges of net investments in foreign operations) into the functional currency of the parent, the portion of the change in fair value of the derivative due to changes in the spot foreign exchange rates is recorded as a foreign currency translation adjustment in other comprehensive income to the extent the hedge is effective; the remainder is recorded as other income in the Consolidated Statement of Income.

Changes in fair value of the hedging instrument relating to the effective portion of the hedge are subsequently recognized in profit or loss on disposal of the foreign operations.

Hedging derivatives are reported as other assets and other liabilities. In the event that a derivative is subsequently de-designated from a hedging relationship, it is transferred to financial assets/liabilities at fair value through profit or loss.

Impairment of loans and provision for off-balance sheet positions

The impairment requirements of IFRS 9 apply to all credit exposures that are measured at amortized cost or FVOCI, and to off balance sheet lending commitments such as loan commitments and financial guarantees. For purposes of the impairment policy below, these instruments are referred to as (“Financial Assets”)

The determination of impairment losses an expected credit loss (“ECL”) model under IFRS 9, where allowances are taken upon initial recognition of the Financial Asset, based on expectations of potential credit losses at the time of initial recognition.

Staged approach to the determination of expected credit losses

IFRS 9 states a three stage approach to impairment for Financial Assets that are not credit impaired at the date of origination or purchase. This approach is summarized as follows:

- Stage 1: The Group recognizes a credit loss allowance at an amount equal to 12-month expected credit losses for all Financial Assets. This represents the portion of lifetime expected credit losses from default events that are expected within 12 months of the reporting date, assuming that credit risk has not increased significantly after initial recognition.
- Stage 2: The Group recognizes a credit loss allowance at an amount equal to lifetime expected credit losses for those Financial Assets which are considered to have experienced a significant increase in credit risk since initial recognition. This requires the computation of ECL based on lifetime probability of default, lifetime loss given default and lifetime exposure at default that represents the probability of default occurring over the remaining lifetime of the Financial Asset. Allowance for credit losses are higher in this stage because of an increase in credit risk and the impact of a longer time horizon being considered compared to 12 months in Stage 1.
- Stage 3: The Group recognizes a loss allowance at an amount equal to lifetime expected credit losses, reflecting a Probability of Default of 100 %, via the expected recoverable cash flows for the asset, for those Financial Assets that are credit-impaired. The Group’s definition of default is aligned with the regulatory definition. Financial Assets that are credit-impaired upon initial recognition are categorized within Stage 3 with a carrying value already reflecting the lifetime expected credit losses. The accounting treatment for these purchased or originated credit-impaired (“POCI”) assets is discussed further below.

Significant increase in credit risk

Under IFRS 9, when determining whether the credit risk (i.e., risk of default) of a Financial Asset has increased significantly since initial recognition, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes quantitative and qualitative information based on the Group’s historical experience, credit risk assessment and forward-looking information (including macro-economic factors). The assessment of significant credit deterioration is key in determining when to move from measuring an allowance based on 12-month ECLs to one that is based on lifetime ECLs (i.e., transfer from Stage 1 to Stage 2).

The Group’s framework for determining if there has been a significant increase in credit risk aligns with the internal Credit Risk Management (“CRM”) process and covers rating related and process related indicators which are discussed further in section “IFRS 9 Impairment Approach” in the Risk Report.

Credit impaired financial assets in Stage 3

The Group has aligned its definition of credit impaired under IFRS 9 to when a Financial Asset has defaulted for regulatory purposes, according to the Capital Requirements Regulation under Art. 178.

The determination of whether a Financial Asset is credit impaired and therefore in Stage 3 focusses exclusively on default risk, without taking into consideration the effects of credit risk mitigants such as collateral or guarantees. Specifically, a Financial Asset is credit impaired and in Stage 3 when:

- The Group considers the obligor is unlikely to pay its credit obligations to the Group. Determination may include forbearance actions, where a concession has been granted to the borrower or economic or legal reasons that are qualitative indicators of credit impairment; or
- Contractual payments of either principal or interest by the obligor are past due by more than 90 days.

For Financial Assets considered to be credit impaired, the ECL allowance covers the amount of loss the Group is expected to suffer. The estimation of ECLs is done on a case-by-case basis for non-homogeneous portfolios, or by applying portfolio based parameters to individual Financial Assets in these portfolios via the Group's ECL model for homogeneous portfolios. This estimate includes the use of discounted cash flows that are adjusted for scenarios.

Forecasts of future economic conditions when calculating ECLs are considered. The lifetime expected losses are estimated based on the probability-weighted present value of the difference between the contractual cash flows that are due to the Group under the contract; and the cash flows that the Group expects to receive.

A Financial Asset can be classified as credit impaired in Stage 3 but without an allowance for credit losses (i.e., no impairment loss is expected). This may be due to the value of collateral. The Group's engine based ECL calculation is conducted on a monthly basis, whereas the case-by-case assessment of ECL in Stage 3 for non-homogeneous portfolio has to be performed at least on a quarterly basis.

Purchased or originated credit impaired financial assets in Stage 3

A Financial Asset is considered purchased or originated credit-impaired if there is objective evidence of impairment at the time of initial recognition. Such credit impaired Financial Assets are termed POCI Financial Assets. POCI Financial Assets are measured to reflect lifetime expected credit losses, and all subsequent changes in lifetime expected credit losses, whether positive or negative, are recognized in the income statement as a component of the provision for credit losses. POCI Financial Assets can only be classified in Stage 3 over the life of the Financial Asset.

Write-offs

The Group reduces the gross carrying amount of a Financial Asset when there is no reasonable expectation of recovery. Write-offs can relate to a Financial Asset in its entirety, or to a portion of it, and constitute a derecognition event. The Group considers all relevant information in making this determination, including but not limited to:

- Foreclosure actions taken by the Group which have not been successful or have a high probability of not being successful
- Collateral liquidation which has not, or will not lead to further considerable recoveries
- Situations where no further recoveries are reasonably expected

Write-offs can take place before legal actions against the borrower to recover the debt have been concluded, and a write-off does not involve the Group forfeiting its legal right to recover the debt.

Collateral for financial assets considered in the impairment analysis

IFRS 9 requires cash flows expected from collateral and other credit enhancement to be reflected in the ECL calculation. The following are key aspects with respect to collateral and guarantees:

- Eligibility of collateral, i.e. which collateral should be considered in the ECL calculation;
- Collateral evaluation, i.e. what collateral (liquidation) value should be used; and
- Projection of the available collateral amount over the life of a transaction.

These concepts are outlined in more detail in section "IFRS 9 Impairment Approach" in the Risk Report.

Critical accounting estimates – The accounting estimates and judgments related to the impairment of Financial Assets is a critical accounting estimate because the underlying assumptions used can change from period to period and may significantly affect the Group's results of operations.

In assessing assets for impairments, management judgment is required, particularly in projecting future economic information and scenarios in particular in circumstances of economic and financial uncertainty, when developments and changes to expected cash flows can occur both with greater rapidity and less predictability. The actual amount of the future cash flows and their timing may differ from the estimates used by management and consequently may cause actual losses to differ from reported allowances.

For those non-homogeneous loans in Stage 3 the determination of the impairment allowance often requires the use of considerable judgment concerning such matters as local economic conditions, the financial performance of the counterparty and the value of any collateral held, for which there may not be a readily accessible market.

The determination of the expected credit losses in Stages 1 and 2 and for homogeneous loans in Stage 3 is calculated using statistical expected loss models. The model incorporates numerous estimates and judgments. The Group performs a regular review of the model and underlying data and assumptions. The probability of defaults, loss recovery rates and judgments concerning ability of borrowers in foreign countries to transfer the foreign currency necessary to comply with debt repayments, amongst other things, are incorporated into this review.

The quantitative disclosures are provided in Note 18 “Loans” and Note 19 “Allowance for credit losses”.

Derecognition of financial assets and liabilities

Financial asset derecognition

A financial asset is considered for derecognition when the contractual rights to the cash flows from the financial asset expire, or the Group has either transferred the contractual right to receive the cash flows from that asset, or has assumed an obligation to pay those cash flows to one or more recipients, subject to certain criteria.

The Group derecognizes a transferred financial asset if it transfers substantially all the risks and rewards of ownership.

The Group enters into transactions in which it transfers previously recognized financial assets but retains substantially all the associated risks and rewards of those assets; for example, a sale to a third party in which the Group enters into a concurrent total return swap with the same counterparty. These types of transactions are accounted for as secured financing transactions.

In transactions in which substantially all the risks and rewards of ownership of a financial asset are neither retained nor transferred, the Group derecognizes the transferred asset if control over that asset is not retained, i.e., if the transferee has the practical ability to sell the transferred asset. The rights and obligations retained in the transfer are recognized separately as assets and liabilities, as appropriate. If control over the asset is retained, the Group continues to recognize the asset to the extent of its continuing involvement, which is determined by the extent to which it remains exposed to changes in the value of the transferred asset.

The derecognition criteria are also applied to the transfer of part of an asset, rather than the asset as a whole, or to a group of similar financial assets in their entirety, when applicable. If transferring a part of an asset, such part must be a specifically identified cash flow, a fully proportionate share of the asset, or a fully proportionate share of a specifically-identified cash flow.

If an existing financial asset is replaced by another asset from the same counterparty on substantially different terms, or if the terms of the financial asset are substantially modified (due to forbearance measures or otherwise), the existing financial asset is derecognized and a new asset is recognized. Any difference between the respective carrying amounts is recognized in the Consolidated Statement of Income.

Securitization

The Group securitizes various consumer and commercial financial assets, which is achieved via the transfer of these assets to a structured entity, which issues securities to investors to finance the acquisition of the assets. Financial assets awaiting securitization are classified and measured as appropriate under the policies in the “Financial Assets and Liabilities” section. If the structured entity is not consolidated then the transferred assets may qualify for derecognition in full or in part, under the policy on derecognition of financial assets. Synthetic securitization structures typically involve derivative financial instruments for which the policies in the “Derivatives and Hedge Accounting” section would apply. Those transfers that do not qualify for derecognition may be reported as secured financing or result in the recognition of continuing involvement liabilities. The investors and the securitization vehicles generally have no recourse to the Group’s other assets in cases where the issuers of the financial assets fail to perform under the original terms of those assets.

Interests in the securitized financial assets may be retained in the form of senior or subordinated tranches, interest only strips or other residual interests (collectively referred to as “retained interests”). Provided the Group’s retained interests do not result in consolidation of a structured entity, nor in continued recognition of the transferred assets, these interests are typically recorded in financial assets at fair value through profit or loss and carried at fair value. Consistent with the valuation of similar financial instruments, the fair value of retained tranches or the financial assets is initially and subsequently determined using market price quotations where available or internal pricing models that utilize variables such as yield curves, prepayment speeds, default rates, loss severity, interest rate volatilities and spreads. The assumptions used for pricing are based on observable transactions in similar securities and are verified by external pricing sources, where available. Where observable

transactions in similar securities and other external pricing sources are not available, management judgment must be used to determine fair value. The Group may also periodically hold interests in securitized financial assets and record them at amortized cost.

In situations where the Group has a present obligation (either legal or constructive) to provide financial support to an unconsolidated securitization entity a provision will be created if the obligation can be reliably measured and it is probable that there will be an outflow of economic resources required to settle it.

When an asset is derecognized a gain or loss equal to the difference between the consideration received and the carrying amount of the transferred asset is recorded. When a part of an asset is derecognized, gains or losses on securitization depend in part on the carrying amount of the transferred financial assets, allocated between the financial assets derecognized and the retained interests based on their relative fair values at the date of the transfer.

Derecognition of financial liabilities

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. If an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of the existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognized in the Consolidated Statement of Income.

Repurchase and reverse repurchase agreements

Securities purchased under resale agreements (“reverse repurchase agreements”) and securities sold under agreements to repurchase (“repurchase agreements”) are treated as collateralized financings and are recognized initially at fair value, being the amount of cash disbursed and received, respectively. The party disbursing the cash takes possession of the securities serving as collateral for the financing and having a market value equal to, or in excess of, the principal amount loaned. The securities received under reverse repurchase agreements and securities delivered under repurchase agreements are not recognized on, or derecognized from, the balance sheet, because the risks and rewards of ownership are not obtained nor relinquished. Securities delivered under repurchase agreements which are not derecognized from the balance sheet and where the counterparty has the right by contract or custom to sell or repledge the collateral are disclosed in Note 20 “Transfer of Financial Assets, Assets Pledged and Received as Collateral”.

The Group allocates reverse repurchase portfolios that are managed on a fair value basis to the other business model under IFRS 9 and classifies them as “Non-trading financial assets mandatory at fair value through profit or loss”.

Interest earned on reverse repurchase agreements and interest incurred on repurchase agreements is reported as interest income and interest expense, respectively.

Securities borrowed and securities loaned

Securities borrowed transactions generally require the Group to deposit cash with the securities lender. In a securities loaned transaction, the Group generally receives either cash collateral, in an amount equal to or in excess of the market value of securities loaned, or securities. The Group monitors the fair value of securities borrowed and securities loaned and additional collateral is disbursed or obtained, if necessary.

The securities borrowed are not themselves recognized in the financial statements. If they are sold to third parties, the obligation to return the securities is recorded as a financial liability at fair value through profit or loss and any subsequent gain or loss is included in the Consolidated Statement of Income in net gains (losses) on financial assets/liabilities at fair value through profit or loss. Securities lent to counterparties are also retained on the Consolidated balance sheet.

The Group records the amount of cash advanced or received as securities borrowed and securities loaned, respectively, in the Consolidated balance sheet.

Fees received or paid are reported in interest income and interest expense, respectively. Securities lent to counterparties which are not derecognized from the Consolidated balance sheet and where the counterparty has the right by contract or custom to sell or repledge the collateral are disclosed in Note 20 “Transfer of Financial Assets, Assets Pledged and Received as Collateral”.

Goodwill and other intangible assets

Goodwill arises on the acquisition of subsidiaries and associates and represents the excess of the aggregate of the cost of an acquisition and any non-controlling interests in the acquiree over the fair value of the identifiable net assets acquired at the date of the acquisition.

For the purpose of calculating goodwill, fair values of acquired assets, liabilities and contingent liabilities are determined by reference to market values or by discounting expected future cash flows to present value. This discounting is either performed using market rates or by using risk-free rates and risk-adjusted expected future cash flows. Any non-controlling interests in the acquiree is measured either at fair value or at the non-controlling interests' proportionate share of the acquiree's identifiable net assets (this is determined for each business combination).

Goodwill on the acquisition of subsidiaries is capitalized and reviewed for impairment annually or more frequently if there are indications that impairment may have occurred. For the purposes of impairment testing, goodwill acquired in a business combination is allocated to cash-generating units ("CGUs"), which are the smallest identifiable groups of assets that generate cash inflows largely independent of the cash inflows from other assets or groups of assets and that are expected to benefit from the synergies of the combination and considering the business level at which goodwill is monitored for internal management purposes. In identifying whether cash inflows from an asset (or a group of assets) are largely independent of the cash inflows from other assets (or groups of assets) various factors are considered, including how management monitors the entity's operations or makes decisions about continuing or disposing of the entity's assets and operations.

If goodwill has been allocated to a CGU and an operation within that unit is disposed of, the attributable goodwill is included in the carrying amount of the operation when determining the gain or loss on its disposal.

Corporate assets are allocated to a CGU when the allocation can be done on a reasonable and consistent basis. If this is not possible, the individual CGU is tested without the corporate assets. They are then tested on the level of the minimum collection of CGUs to which they can be allocated on a reasonable and consistent basis.

Intangible assets are recognized separately from goodwill when they are separable or arise from contractual or other legal rights and their fair value can be measured reliably. Intangible assets that have a finite useful life are stated at cost less any accumulated amortization and accumulated impairment losses. Customer-related intangible assets that have a finite useful life are amortized over periods of between 1 and 20 years on a straight-line basis based on their expected useful life. These assets are tested for impairment and their useful lives reaffirmed at least annually.

Certain intangible assets have an indefinite useful life and hence are not amortized, but are tested for impairment at least annually or more frequently if events or changes in circumstances indicate that impairment may have occurred.

Costs related to software developed or obtained for internal use are capitalized if it is probable that future economic benefits will flow to the Group and the cost can be measured reliably. Capitalized costs are amortized using the straight-line method over the asset's useful life which is deemed to be either three, five or ten years. Eligible costs include external direct costs for materials and services, as well as payroll and payroll-related costs for employees directly associated with an internal-use software project. Overhead costs, as well as costs incurred during the research phase or after software is ready for use, are expensed as incurred. Capitalized software costs are tested for impairment either annually if still under development or any time when there is an indication of impairment once the software is in use.

Critical accounting estimates – The determination of the recoverable amount in the impairment assessment of non-financial assets requires estimates based on quoted market prices, prices of comparable businesses, present value or other valuation techniques (such as the cost approach), or a combination thereof, necessitating management to make subjective judgments and assumptions. Because these estimates and assumptions could result in significant differences to the amounts reported if underlying circumstances were to change, the Group considers these estimates to be critical.

The quantitative disclosures are provided in Note 23 "Goodwill and other intangible assets".

Provisions

Provisions are recognized if the Group has a present legal or constructive obligation as a result of past events, if it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation as of the balance sheet date, taking into account the risks and uncertainties surrounding the obligation.

If the effect of the time value of money is material, provisions are discounted and measured at the present value of the expenditure expected to be required to settle the obligation, using a pre-tax rate that reflects the current market assessments of the time value of money and the risks specific to the obligation. The increase in the provision due to the passage of time is recognized as interest expense.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party (for example, because the obligation is covered by an insurance policy), an asset is recognized if it is virtually certain that reimbursement will be received.

If the Group has a contract that is onerous, the present obligation under the contract is recognized and measured as a provision. An onerous contract is a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it.

Critical accounting estimates –The use of estimates is important in determining provisions for potential losses that may arise from litigation and regulatory proceedings. The Group estimates and provides for potential losses that may arise out of litigation and regulatory proceedings to the extent that such losses are probable and can be estimated, in accordance with IAS 37, “Provisions, Contingent Liabilities and Contingent Assets”. Significant judgment is required in making these estimates and the Group’s final liabilities may ultimately be materially different.

Contingencies in respect of legal matters are subject to many uncertainties and the outcome of individual matters is not predictable with assurance. Significant judgment is required in assessing probability and making estimates in respect of contingencies, and the Group’s final liability may ultimately be materially different. The Group’s total liability in respect of litigation, arbitration and regulatory proceedings is determined on a case-by-case basis and represents an estimate of probable losses after considering, among other factors, the progress of each case, the Group’s experience and the experience of others in similar cases, and the opinions and views of legal counsel. Predicting the outcome of the Group’s litigation matters is inherently difficult, particularly in cases in which claimants seek substantial or indeterminate damages. See Note 27 “Provisions” for information on the Group’s judicial, regulatory and arbitration proceedings.

Income taxes

The Group recognizes the current and deferred tax consequences of transactions that have been included in the consolidated financial statements using the provisions of the respective jurisdictions’ tax laws. Current and deferred taxes are recognized in profit or loss except to the extent that the tax relates to items that are recognized directly in equity or other comprehensive income in which case the related tax is recognized either directly in equity or other comprehensive income accordingly.

Deferred tax assets and liabilities are recognized for future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, unused tax losses and unused tax credits. Deferred tax assets are recognized only to the extent that it is probable that sufficient taxable profit will be available against which those unused tax losses, unused tax credits and deductible temporary differences can be utilized.

Deferred tax assets and liabilities are measured based on the tax rates that are expected to apply in the period that the asset is realized or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the balance sheet date.

Current tax assets and liabilities are offset when (1) they arise from the same tax reporting entity or tax group of reporting entities, (2) the legally enforceable right to offset exists and (3) they are intended to be settled net or realized simultaneously.

Deferred tax assets and liabilities are offset when the legally enforceable right to offset current tax assets and liabilities exists and the deferred tax assets and liabilities relate to income taxes levied by the same taxing authority on either the same tax reporting entity or tax group of reporting entities.

Deferred tax liabilities are provided on taxable temporary differences arising from investments in subsidiaries, branches and associates and interests in joint ventures except when the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the difference will not reverse in the foreseeable future. Deferred income tax assets are provided on deductible temporary differences arising from such investments only to the extent that it is probable that the differences will reverse in the foreseeable future and sufficient taxable income will be available against which those temporary differences can be utilized.

Deferred tax related to fair value remeasurement of financial assets classified as FVTOCI, cash flow hedges and other items, which are charged or credited directly to other comprehensive income, is also credited or charged directly to other comprehensive income and subsequently recognized in the Consolidated Statement of Income once the underlying transaction or event to which the deferred tax relates is recognized in the Consolidated Statement of Income.

For share-based payment transactions, the Group may receive a tax deduction related to the compensation paid in shares. The amount deductible for tax purposes may differ from the cumulative compensation expense recorded. At any reporting date, the Group must estimate the expected future tax deduction based on the current share price. The associated current and deferred tax consequences are recognized as income or expense in the consolidated statement of Income for the period. If the amount deductible, or expected to be deductible, for tax purposes exceeds the cumulative compensation expense, the excess tax benefit is recognized directly in equity.

Critical accounting estimates – In determining the amount of deferred tax assets, the Group uses historical tax capacity and profitability information and, if relevant, forecasted operating results based upon approved business plans, including a review of the eligible carry-forward periods, available tax planning opportunities and other relevant considerations. The analysis of historical tax capacity includes the determination as to whether a history of recent losses exists at the reporting date. The determination of a history of recent losses is based on the pre-tax results adjusted for permanent differences and typically covers the current and the two preceding financial years. Each quarter, the Group re-evaluates its estimate related to deferred tax assets, including its assumptions about future profitability.

The Group believes that the accounting estimate related to the deferred tax assets is a critical accounting estimate because the underlying assumptions can change from period to period and requires significant management judgment. For example, tax law changes or variances in future projected operating performance could result in a change of the deferred tax asset. If the Group was not able to realize all or part of its net deferred tax assets in the future, an adjustment to its deferred tax assets would be charged to income tax expense or directly to equity in the period such determination was made. If the Group was to recognize previously unrecognized deferred tax assets in the future, an adjustment to its deferred tax asset would be credited to income tax expense or directly to equity in the period such determination was made.

The use of estimates is also important in determining provisions for potential losses that may arise from uncertain income tax positions. The Group estimates and provides for potential losses that may arise out of uncertain income tax positions, in accordance with IAS 12, “Income Taxes” and IFRIC 23, “Uncertainty over Income Tax Treatment”. Significant judgment is required in making these estimates and the Group’s final liabilities may ultimately be materially different.

For further information on the Group’s deferred taxes (including quantitative disclosures on recognized deferred tax assets) see Note 34 “Income Taxes”.

Business combinations and non-controlling Interests

The Group uses the acquisition method to account for business combinations. At the date the Group obtains control of the subsidiary, the cost of an acquisition is measured at the fair value of the consideration given, including any cash or non-cash consideration (equity instruments) transferred, any contingent consideration, any previously held equity interest in the acquiree and liabilities incurred or assumed. The excess of the aggregate of the cost of an acquisition and any non-controlling interests in the acquiree over the Group’s share of the fair value of the identifiable net assets acquired is recorded as goodwill. If the aggregate of the acquisition cost and any non-controlling interests is below the fair value of the identifiable net assets (negative goodwill), a gain is reported in other income. Acquisition-related costs are recognized as expenses in the period in which they are incurred.

In business combinations achieved in stages (“step acquisitions”), a previously held equity interest in the acquiree is remeasured to its acquisition-date fair value and the resulting gain or loss, if any, is recognized in profit or loss. Amounts recognized in prior periods in other comprehensive income associated with the previously held investment would be recognized on the same basis as would be required if the Group had directly disposed of the previously held equity interest.

Non-controlling interests are shown in the consolidated balance sheet as a separate component of equity, which is distinct from the Group’s shareholders’ equity. The net income attributable to non-controlling interests is separately disclosed on the face of the Consolidated Statement of Income. Changes in the ownership interest in subsidiaries which do not result in a change of control are treated as transactions between equity holders and are reported in additional paid-in capital (“APIC”).

Non-current assets held for sale

Individual non-current assets (and disposal groups) are classified as held for sale if they are available for immediate sale in their present condition subject only to the customary sales terms of such assets (and disposal groups) and their sale is considered highly probable. For a sale to be highly probable, management must be committed to a sales plan and be actively looking for a buyer and has no substantive regulatory approvals outstanding. Furthermore, the assets (and disposal groups) must be actively marketed at a reasonable sales price in relation to their current fair value and the sale should be expected to be completed within one year. Non-current non-financial assets (and disposal groups) which meet the criteria for held for sale classification are measured at the lower of their carrying amount and fair value less costs of disposal and are presented within “Other assets” and “Other liabilities” in the balance sheet. Financial assets and liabilities meeting the criteria continue to be

measured in accordance with IFRS 9. The comparatives are not presented when non-current assets (and disposal groups) are classified as held for sale. If the disposal group contains financial instruments, no adjustment to their carrying amounts is permitted.

Property and equipment

Property and equipment includes own-use properties, leasehold improvements, furniture and equipment and software (operating systems only). Right-of-use assets are presented together with property and equipment on the Group's consolidated balance sheet. Own-use properties are carried at cost less accumulated depreciation and accumulated impairment losses. Depreciation is generally recognized using the straight-line method over the estimated useful lives of the assets. The range of estimated useful lives is 25 to 50 years for property and 3 to 10 years for furniture and equipment (including initial improvements to purchased buildings). Leasehold improvements are capitalized and subsequently depreciated on a straight-line basis over the shorter of the term of the lease and the estimated useful life of the improvement, which generally ranges from 3 to 18 years. Depreciation of property and equipment is included in general and administrative expenses. Maintenance and repairs are also charged to general and administrative expenses. Gains and losses on disposals are included in other income.

Property and equipment are assessed for any indication of impairment at each quarterly reporting date. If such indication exists, the recoverable amount, which is the higher of fair value less costs of disposal and value in use, must be estimated and an impairment charge is recorded to the extent the recoverable amount is less than its carrying amount. Value in use is the present value of the future cash flows expected to be derived from the asset. After the recognition of impairment of an asset, the depreciation charge is adjusted in future periods to reflect the asset's revised carrying amount. If an impairment is later reversed, the depreciation charge is adjusted prospectively.

Financial guarantees

Financial guarantee contracts are contracts that require the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payments when due in accordance with the terms of a debt instrument.

Financial guarantees written

The Group has chosen to apply the fair value option to certain written financial guarantees that are managed on a fair value basis. Financial guarantees that the Group has not designated at fair value are recognized initially in the financial statements at fair value on the date the guarantee is given. Subsequent to initial recognition, the Group's liabilities under such guarantees are measured at the higher of the amount initially recognized, less cumulative amortization, and the best estimate of the expenditure required to settle any financial obligation as of the balance sheet date. These estimates are determined based on experience with similar transactions and history of past losses, and management's determination of the best estimate.

Any increase in the liability relating to guarantees is recorded in the Consolidated Statement of Income in Provision for Credit Losses.

Financial guarantees purchased

Purchased financial guarantees result in reimbursements under IAS 37 to the extent that the financial guarantee is entered into to mitigate the credit exposure from debt instruments with Hold to Collect (HTC) or Hold to Collect and Sell (HTC&S) business models. This results in recognition of a reimbursement asset for subsequent increases in the expected credit losses, to the extent it is virtually certain that the purchased financial guarantee will reimburse the Group for the loss incurred. Accordingly, when the credit risk of the borrower significantly deteriorates a reimbursement asset is recognized equal to the life-time expected credit losses and is presented as Other Assets in the Group's Consolidated Balance Sheet. The corresponding reimbursement gain is recognized as a reduction in the Provision for credit losses in the Group's Consolidated Statement of Income.

Purchased financial guarantees entered into to mitigate credit exposure from debt instruments allocated to HTC or HTC&S business models may also be embedded in Collateralized Loan Obligations (CLO's) issued by the Group. Such embedded guarantees are not accounted for separately as a reimbursement asset and instead accounted as part of the CLO's liability held at amortized cost. The Group regularly revises its estimated contractual redemption payment (including the benefit of such embedded guarantees) from the CLO when the credit risk of a borrower covered by the embedded financial guarantee in the CLO significantly deteriorates. The revision is based on the life-time expected credit losses of the debt instrument (to the extent covered by the CLO).

Purchased financial guarantees entered into to mitigate credit exposure from debt instruments included in the Other business model are accounted for at fair value through profit or loss.

Leasing transactions

The Group enters into lease contracts, predominantly for land and buildings, as a lessee. Other categories are company cars and technical/IT equipment.

The Group assesses at contract inception whether a contract is, or contains, a lease. That is, if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

The Group applies a single recognition and measurement approach for all leases with a term of more than 12 months, unless the underlying asset is of low value. As a lessee, at the lease commencement date, the Group recognizes a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments.

The right-of-use asset is measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any re-measurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities, adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the site on which it is located, less any lease incentives received. Right-of-use assets are depreciated on a straight-line basis over the lease term.

The lease liability is measured at the present value of lease payments to be made over the lease term. The lease payments include fixed payments (including in substance fixed payments) less any lease incentives receivable and variable lease payments that depend on an index or a rate. Variable lease payments that do not depend on an index or a rate are recognized as expenses in the period in which the event or condition that triggers the payment occurs.

In calculating the present value of lease payments, the Group uses its incremental borrowing rate at the lease commencement date because the interest rate implicit in the lease is not readily determinable. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is re-measured if there is a modification, a change in the lease term or a change in the lease payments (e.g., changes to future payments resulting from a change in an index or rate used to determine such lease payments).

Right-of-use assets are assessed for any indication of impairment at each quarterly reporting date. If such indication exists, the recoverable amount, which is the fair value less costs of disposal, must be estimated and an impairment charge is recorded to the extent the recoverable amount is less than its carrying amount. As right-of-use assets do not have independently generated cash flows to calculate its value in use, the Group considers any sublease income that could reasonably be earned. After the recognition of impairment of an asset, the depreciation charge is adjusted in future periods to reflect the asset's revised carrying amount. If an impairment is later reversed, the depreciation charge is adjusted prospectively.

The Group presents right-of-use assets "Property and Equipment" and lease liabilities in "Other Liabilities".

The Group applies the short-term lease recognition exemption to its short-term leases, i.e., those leases that have a lease term of 12 months or less from the commencement date. It also applies the lease of low-value assets recognition exemption to leases of technical/IT equipment that are considered to be low value. Lease payments on short-term leases and leases of low value assets are recognized as expense on a straight-line basis over the lease term.

Employee benefits

Pension benefits

The Group provides a number of pension plans. In addition to defined contribution plans, there are retirement benefit plans accounted for as defined benefit plans. The assets of all the Group's defined contribution plans are held in independently administered funds. Contributions are generally determined as a percentage of salary and are expensed based on employee services rendered, generally in the year of contribution.

All retirement benefit plans accounted for as defined benefit plans are valued using the projected unit-credit method to determine the present value of the defined benefit obligation and the related service costs. Under this method, the determination is based on actuarial calculations which include assumptions about demographics, salary increases and interest and inflation rates. Actuarial gains and losses are recognized in Other Comprehensive Income and presented in equity in the period in which they occur. The majority of the Group's benefit plans is funded.

For the Group's most significant pension plans in the key countries, the discount rate used at each measurement date is set based on a high quality corporate bond yield curve – derived based on bond universe information sourced from reputable

third-party index data providers and rating agencies – reflecting the timing, amount and currency of the future expected benefit payments for the respective plan.

Other post-employment benefits

In addition, the Group maintains unfunded contributory post-employment medical plans for a number of current and retired employees who are mainly located in the United States. These plans pay stated percentages of eligible medical and dental expenses of retirees after a stated deductible has been met. The Group funds these plans on a cash basis as benefits are due. Analogous to retirement benefit plans these plans are valued using the projected unit-credit method. Actuarial gains and losses are recognized in full in the period in which they occur in other comprehensive income and presented in equity.

Refer to Note 33 “Employee benefits” for further information on the accounting for pension benefits and other post-employment benefits.

Termination benefits

Termination benefits arise when employment is terminated by the Group before the normal retirement date or whenever an employee accepts voluntary redundancy in exchange for these benefits. The Group recognizes termination benefits as a liability and an expense if the Group is demonstrably committed to a detailed formal plan without realistic possibility of withdrawal. In the case of an offer made to encourage voluntary redundancy, termination benefits are measured based on the number of employees expected to accept the offer. Benefits falling due more than twelve months after the end of the reporting period are discounted to their present value. The discount rate is determined by reference to market yields on high-quality corporate bonds.

Share-based compensation

Compensation expense for awards classified as equity instruments is measured at the grant date based on the fair value of the share-based award. For share awards, the fair value is the quoted market price of the share reduced by the present value of the expected dividends that will not be received by the employee and adjusted for the effect, if any, of restrictions beyond the vesting date. In case an award is modified such that its fair value immediately after modification exceeds its fair value immediately prior to modification, a remeasurement takes place and the resulting increase in fair value is recognized as additional compensation expense.

The Group records the offsetting amount to the recognized compensation expense in additional paid-in capital (“APIC”). Compensation expense is recorded on a straight-line basis over the period in which employees perform services to which the awards relate or over the period of the tranches for those awards delivered in tranches. Estimates of expected forfeitures are periodically adjusted in the event of actual forfeitures or for changes in expectations. The timing of expense recognition relating to grants which, due to early retirement provisions, include a nominal but non-substantive service period are accelerated by shortening the amortization period of the expense from the grant date to the date when the employee meets the eligibility criteria for the award, and not the vesting date. For awards that are delivered in tranches, each tranche is considered a separate award and amortized separately.

Compensation expense for share-based awards payable in cash is remeasured to fair value at each balance sheet date and recognized over the vesting period in which the related employee services are rendered. The related obligations are included in Other Liabilities until paid.

Government grants

The Group recognizes income from government grants when there is reasonable assurance that it will receive the grant and will comply with the conditions attached to the grant. The Group presents income from government grants as a deduction of the related expense.

The Group considers long-term debt that arises from the ECB’s Targeted Longer-Term Refinancing Operations III (“TLTRO III”)-refinancing program as a borrowing at below-market rate interest. The effective interest rate for borrowings under the TLTRO III refinancing program is determined based on the applicable ECB refinancing rates outside of TLTRO III. The Group accounts for the benefit from the below-market rate interest as a government grant. The TLTRO III refinancing program is intended to stimulate credit creation in the Eurozone area by incentivizing lending by participating banks to the “real economy”. The size of the benefit depends on the amounts borrowed and on meeting the various lending performance thresholds. The Group considers the ECB as a government or similar body for purposes of IAS 20. The Group recognizes the benefit from the TLTRO III refinancing program in the period in which the grant is intended to compensate the Group for the related borrowing costs if it has established reasonable assurance that it will meet the relevant lending thresholds.

For further information on the benefit recognized by the Group from the TLTRO III refinancing program see Note 5 “Net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss”.

Obligations to purchase common shares

Forward purchases of Deutsche Bank shares, and written put options where Deutsche Bank shares are the underlying, are reported as obligations to purchase common shares if the number of shares is fixed and physical settlement for a fixed amount of cash is required. At inception, the obligation is recorded at the present value of the settlement amount of the forward or option. For forward purchases and written put options of Deutsche Bank shares, a corresponding charge is made to shareholders’ equity and reported as equity classified as an obligation to purchase common shares.

The liabilities are accounted for on an accrual basis, and interest costs, which consist of time value of money and dividends, on the liability are reported as interest expense. Upon settlement of such forward purchases and written put options, the liability is extinguished and the charge to equity is reclassified to common shares in treasury.

Deutsche Bank common shares subject to such forward contracts are not considered to be outstanding for purposes of basic earnings per share calculations, but are considered for dilutive earnings per share calculations to the extent that they are, in fact, dilutive.

Option and forward contracts on Deutsche Bank shares are classified as equity if the number of shares is fixed and physical settlement is required. All other contracts in which Deutsche Bank shares are the underlying are recorded as financial assets or liabilities at fair value through profit or loss.

Consolidated statement of cash flows

For purposes of the consolidated statement of cash flows, the Group’s cash and cash equivalents include highly liquid investments that are readily convertible into cash and which are subject to an insignificant risk of change in value. Such investments include cash and balances at central banks and demand deposits with banks.

The Group’s assignment of cash flows to the operating, investing or financing category depends on the business model (“management approach”). For the Group the primary operating activity is to manage financial assets and financial liabilities. Therefore, the issuance and management of long-term borrowings is a core operating activity which is different than for a non-financial company, where borrowing is not a principal revenue producing activity and thus is part of the financing category.

The Group views the issuance of senior long-term debt as an operating activity. Senior long-term debt comprises structured notes and asset-backed securities, which are designed and executed by the Corporate Bank and Investment Bank business line segments and which are revenue generating activities. The other component is debt issued by Treasury, which is considered interchangeable with other funding sources; all of the funding costs are allocated to business activities to establish their profitability.

Cash flows related to subordinated long-term debt and trust preferred securities are viewed differently than those related to senior-long term debt because they are managed as an integral part of the Group’s capital, primarily to meet regulatory capital requirements. As a result they are not interchangeable with other operating liabilities, but can only be interchanged with equity and thus are considered part of the financing category.

The amounts shown in the consolidated statement of cash flows do not precisely match the movements in the consolidated balance sheet from one period to the next as they exclude non-cash items such as movements due to foreign exchange translation and movements due to changes in the group of consolidated companies.

Movements in balances carried at fair value through profit or loss represent all changes affecting the carrying value. This includes the effects of market movements and cash inflows and outflows. The movements in balances carried at fair value are usually presented in operating cash flows.

02 – Recently adopted and new accounting pronouncements

Recently adopted accounting pronouncements

The following are those accounting pronouncements which are relevant to the Group and which have been adopted during 2020 in the preparation of these consolidated financial statements.

IFRS 16 Leases

On June 1, 2020, the Group adopted amendments to IFRS 16 “Leases” that provide lessees with an exemption from assessing whether a COVID-19-related rent concession is a lease modification. The adoption of the amendments did not have a material impact on the Group’s consolidated financial statements.

IFRS 3 Business Combinations

On January 1, 2020, the Group adopted amendments to IFRS 3, “Business Combinations”. These amendments clarify the determination of whether an acquisition made is of a business or a group of assets. The amended definition of a business emphasizes that the output of a business is to provide goods and services to customers, whereas the previous definition focused on returns in the form of dividends, lower costs or other economic benefits to investors and others. Distinguishing between a business and a group of assets is important because an acquirer recognizes goodwill only when acquiring a business. The adoption of the amendments did not have an impact on the Group’s consolidated financial statements.

In addition, the Group adopted on January 1, 2020 “Amendments to IAS 1 and IAS 8: Definition of Material” and “Amendments to References to the Conceptual Framework in IFRS Standards”. The adoption of the amendments did not have an impact on the Group's consolidated financial statements.

New accounting pronouncements

The following accounting pronouncements were not effective as of December 31, 2020 and therefore have not been applied in preparing these consolidated financial statements.

IFRS 17 Insurance Contracts

In May 2017, the IASB issued IFRS 17, “Insurance Contracts”, which establishes the principles for the recognition, measurement, presentation and disclosure of insurance contracts within the scope of the standard. IFRS 17 replaces IFRS 4 which has given companies dispensation to carry on accounting for insurance contracts using national accounting standards, resulting in a multitude of different approaches. IFRS 17 solves the comparison problems created by IFRS 4 by requiring all insurance contracts to be accounted for in a consistent manner, benefiting both investors and insurance companies. Insurance obligations will be accounted for using current values – instead of historical cost. The information will be updated regularly, providing more useful information to users of financial statements. IFRS 17 is effective for annual periods beginning on or after January 1, 2023. Based on the Group’s current business activities it is expected that IFRS 17 will not have a material impact on the Group’s consolidated financial statements. These amendments have yet to be endorsed by the EU.

In June 2020, the IASB issued amendments to IFRS 17 “Insurance Contracts” that address concerns and implementation challenges that were identified after IFRS 17 was published in 2017. The amendments are effective for annual periods beginning on or after January 1, 2023 with early adoption permitted. These amendments have yet to be endorsed by the EU.

IFRS 4 Insurance Contracts

The IASB has also issued an amendment to IFRS 4 “Insurance Contracts” which extends the temporary exemption to apply IFRS 9 to annual periods beginning on or after 1 January 2023. The amendments will not have a material impact on the Group’s consolidated financial statements.

IAS 37 Provisions, Contingent Liabilities and Contingent Assets

In May 2020, the IASB issued amendments to IAS 37, “Provisions, Contingent Liabilities and Contingent Assets” to clarify what costs an entity considers in assessing whether a contract is onerous. The amendments specify that the ‘cost of fulfilling’ a contract comprises the ‘costs that relate directly to the contract’. Costs that relate directly to a contract can either be incremental costs of fulfilling that contract or an allocation of other costs that relate directly to fulfilling contracts. The amendments are effective for annual periods beginning on or after January 1, 2022 with early adoption permitted. The

amendments will not have a material impact on the Group's consolidated financial statements. These amendments have yet to be endorsed by the EU.

IAS 1 Presentation of Financial Statements

In January 2020, the IASB issued amendments to IAS 1 "Presentation of Financial Statements: Classification of Liabilities as Current or Non-Current". They clarify that the classification of liabilities as current or non-current should be based on rights that are in existence at the end of the reporting period. The amendments also clarify that classification is unaffected by expectations about whether an entity will exercise its right to defer settlement of a liability and make clear that settlement refers to the transfer to the counterparty of cash, equity instruments, other assets or services. The amendments will be effective for annual periods beginning on or after January 1, 2023 with early adoption permitted. The Group is currently assessing the impact to its consolidated financial statements. These amendments have yet to be endorsed by the EU.

Improvements to IFRS 2018-2020 Cycles

In May 2020, the IASB issued amendments to multiple IFRS standards, which resulted from the IASB's annual improvement project for the 2018-2020 cycles. This comprises amendments that result in accounting changes for presentation, recognition or measurement purposes as well as terminology or editorial amendments related to IFRS 1 "First-time Adoption of International Financial Reporting Standards", IFRS 9 "Financial Instruments", IFRS 16 "Leases" and IAS 41 "Agriculture". The amendments to IFRS 9 clarify which fees an entity includes when assessing whether to derecognize a financial liability. The amendments will be effective for annual periods beginning on or after January 1, 2022 with early adoption permitted. The amendments will not have a material impact on the Group's consolidated financial statements. These amendments have yet to be endorsed by the EU.

Interest Rate Benchmark Reform (Amendments to IFRS 9, IAS 39 and IFRS 7)

In August 2020, the IASB issued amendments to IFRS 9, "Financial Instruments", IAS 39, "Financial Instruments: Recognition and Measurement", IFRS 7, "Financial Instruments: Disclosures", IFRS 4, "Insurance Contracts" and IFRS 16, "Leases" as Phase 2 of their project addressing the potential effects from the reform of the Interbank Offered Rate ("IBOR") on financial reporting. The amendments in Phase 2 deal with replacement issues, therefore, they address issues that might affect financial reporting when an existing interest rate benchmark is actually replaced. This includes modification of financial assets, financial liabilities and lease liabilities as well as specific hedge accounting requirements. The amendments introduce a practical expedient for modifications required by the reform (modifications required as a direct consequence of the IBOR reform and made on an economically equivalent basis). These modifications are accounted for by updating the effective interest rate. All other modifications are accounted for using the current IFRS requirements. A similar practical expedient is introduced for lessee accounting applying IFRS 16. Under the amendments, hedge accounting is not discontinued solely because of the IBOR reform. Hedging relationships (and related documentation) must be amended to reflect modifications to the hedged item, hedging instrument and hedged risk. Amended hedging relationships should meet all qualifying criteria to apply hedge accounting, including effectiveness requirements. The amendments also amended IFRS 4 to require insurers that apply the temporary exemption from IFRS 9 to apply the amendments in accounting for modifications directly required by IBOR reform.

The amendments also require additional disclosures that allow users to understand the nature and extent of risks arising from the IBOR reform to which the entity is exposed to and how the entity manages those risks as well as the entity's progress in transitioning from IBORs to alternative benchmark rates, and how the entity is managing this transition. The amendments will be effective for annual periods beginning on or after January 1, 2021 with early adoption permitted. Although the Group has significant exposure to IBORs predominantly in financial instruments, the amendments will not have a material impact on transition on the Group's consolidated financial statements.

Recent Developments on Interest Rate Benchmark Reform

In recent years, transactions in the unsecured short-term financing market, which IBOR interest rate benchmarks seek to measure, have significantly reduced. As a result, IBOR reform projects have been initiated under the leadership of the FSB and central bank working groups, which aim to create alternative and robust benchmark interest rates or so-called risk-free rates ("RFRs").

Some reforms are already effective, e.g. on July 27, 2020 the discounting methodology of Euro denominated interest rate derivatives centrally cleared through LCH, EUREX and CME changed from EONIA to €STR. This changed the fair value of the derivatives with a compensating cash payment or receipt so there was no value transfer. The change in discounting to €STR did not have a material impact to the Group's consolidated income statement. A similar change for USD interest rate discounted centrally cleared interest rate derivatives to change discounting from Federal Funds Rate to SOFR occurred on October 19, 2020. The change in discounting to SOFR did not have a material impact to the Group's consolidated income statement.

Other reforms are still to be implemented or are under consideration. In 2019, EURIBOR was reformed to comply with the EU financial benchmarks regulation and continues to be available. Effective October 2, 2019, the administrator of EONIA has changed the way it calculates EONIA, so that it is now based on the "€STR" euro short-term rate". EONIA will cease to exist from January 3, 2022. In December 2020, the administrator of LIBOR consulted on its intention to cease publication of GBP, CHF, JPY, EUR and certain USD settings after December 31, 2021, and additionally, to cease publication of the remaining USD LIBOR settings after June 30, 2023.

Regulators have strongly urged market participants to transition to RFRs. As significant change effort is required across the Group, specifically in relation to RFR product development, client legal documentation, upgrades and infrastructure changes including to systems, processes and models, the Group has established a Group-wide IBOR & EU Benchmark Regulation transition program in 2018, aimed at managing a smooth transition from LIBOR and other IBORs to the new RFRs. The program is sponsored by the Chief Financial Officer and has senior representation from each division, region and infrastructure functions. The program has been focused on identifying and quantifying exposures to various interest rate benchmarks, providing the capability to trade products referencing alternative RFRs and evaluating existing contracts that reference IBORs. Efforts also include identifying potential accounting impacts and options to mitigate these impacts, for example, through impact analysis on the reform and its effects on Financial Reporting. Progress updates are provided monthly to the Group's IBOR Transition In the United States, Deutsche Bank AG is required Steering Committee and the CFO. The Group continues to work closely with regulators and industry bodies to manage the impact. Oversight of the program to prepare for the transition has been a major focus along with activities across all three lines of defense to minimize risk and disruption to customers.

The Group has significant exposure to IBORs predominantly in financial instruments and many of these contracts mature after 2021. The Group's exposures from derivatives results from transactions that are entered into in order to make markets for its clients and hedge its risks as well as from loans and deposits, bonds and securitizations. The Group's core planning for LIBOR transition has been a base case scenario of LIBOR cessation by end of 2021 with sufficient market adoption of RFRs to provide a viable replacement. There are a number of dependencies within this scenario that are outside of the Group's control, creating significant uncertainty. Recently the cessation date for certain US LIBOR tenors was extended to be the end of June 2023 and so the Group's plans have been updated accordingly.

As part of the program, the Group has undertaken a comprehensive risk assessment which is refreshed regularly and has identified key inherent risks and mitigating actions. Key risks include business strategic risk, legal and compliance risk, liquidity risk, market risk, credit risk, operational risk, transition risk, model risk, accounting, financial reporting and tax risk, information security and technology transformation risk.

The Group continues to implement plans, aiming to mitigate the risks associated with the expected discontinuation of IBOR-referenced benchmark interest rates, including LIBOR. In this regards, the Group:

- has reviewed, or is in the process of reviewing, the fallback language for LIBOR-linked instruments including the development of a new framework introduced to quantify the potential impact of positions difficult to transition, referred to as "tough legacy";
- has active cross functional and advocacy channels to ensure continued appropriate offering of RFR linked products to clients and gauge their adoption appetite in RFR related products. A Conduct Risk Advisory forum was initiated in the beginning of 2020, aiming to discuss and review all conduct risks types (including new risks and current plan) relevant for the IBOR transition;
- continues to engage with regulators, standard setters and industry groups in relation to the additional items for which relief is being considered;
- has been engaged in the discussions with the IASB in relation to its project IBOR Reform and its effects on financial reporting—Phase 2 which the Group will adopt on January 1, 2021.

The Group continues to develop infrastructure improvements and assess potential transition risk impacts alongside relevant stress scenarios. Where possible, the Group is proactively using the most effective fallback language available when conducting new transactions.

03 – Acquisitions and dispositions

Business combinations

During the years 2020, 2019 and 2018, the Group did not undertake any acquisitions accounted for as business combinations.

Dispositions

During 2020, 2019 and 2018, the Group finalized several dispositions of subsidiaries/businesses. These disposals are mainly comprised of businesses the Group had previously classified as held for sale. Accordingly, dispositions in 2020 included the sale of Postbank Systems AG. Disposals in 2019 mainly included the sale of the Private & Commercial Clients business in Portugal, while dispositions in 2018 included the partial sale of the Polish Private & Commercial Bank business. For more detail on these transactions, please refer to Note 24 “Non-Current Assets and Disposal Groups Held for Sale”. The total consideration received for these dispositions (thereof in cash) in 2020, 2019 and 2018 was € 7 million (cash € 7 million), € 1.8 billion (cash € 1.8 billion) and € 398 million (cash € 270 million), respectively. The table below shows the assets and liabilities that were included in these disposals.

in € m.	2020	2019	2018
Cash and cash equivalents	2	0	50
All remaining assets	7	2,713	4,619
Total assets disposed	9	2,714	4,669
Total liabilities disposed	79	1,003	6,035

04 – Business segments and related information

The Group’s segmental information has been prepared in accordance with the “management approach”, which requires presentation of the segments on the basis of the internal management reports of the entity which are regularly reviewed by the chief operating decision maker, which is the Deutsche Bank Management Board, in order to allocate resources to a segment and to assess its financial performance.

Business segments

The Group’s segment reporting follows the organizational structure as reflected in its internal management reporting systems, which are the basis for assessing the financial performance of the business segments and for allocating resources to the business segments. Restatements due to changes in the organizational structure were implemented in the presentation of prior period comparisons.

Our business operations are organized under the divisional structure comprising the following corporate divisions:-

- Corporate Bank (CB)
- Investment Bank (IB)
- Private Bank (PB)
- Asset Management (AM)
- Capital Release Unit (CRU)
- Corporate & Other (C&O)

The segmental information for the corporate divisions CB, IB, AM, CRU and C&O remained unchanged in its scope. Within PB, Wealth Management (WM) and Private & Commercial Business International (PCBI) has been combined into one unit called the International Private Bank (IPB) from the third quarter 2020 reporting onwards. The segmental information for the corporate divisions are outlined below.

The Corporate Bank is comprised of Global Transaction Banking as well Commercial Banking. The division covers global corporate clients and commercial and business banking clients in Germany.

The Investment Bank (IB) combines Deutsche Bank’s Fixed Income, Currency (FIC) Sales & Trading and, Origination & Advisory, as well as Deutsche Bank Research.

The Private Bank comprises of Private Bank Germany and International Private Bank. Private Bank Germany remains unchanged in its scope. The International Private Bank brings together WM's globally connected clients across Germany, Europe, the Americas, Asia and the Middle East and Africa, along with PCBI's private clients and small and medium-sized enterprises in Italy, Spain, Belgium and India. IPB revenues are further categorized into the client segments "IPB Personal Banking" and "IPB Private Banking and Wealth Management". The "IPB Personal Banking" client segment covers the retail and affluent customers as well as small businesses. The client segment "Private Banking and Wealth Management" combines our coverage of high-net-worth and ultra-high-net-worth clients, as well as private banking clients and small and medium-sized corporate clients, providing an integrated servicing model for wealth management, private and business banking. Prior period data has been restated.

Asset Management operates under the DWS brand. Asset Management provides investment solutions to individual investors and institutions with a diversified range of Active, Passive and Alternative Asset Management products and services.

Capital Release Unit (CRU) includes the remaining assets transferred in from our Equities Sales & Trading business, lower yielding fixed income positions, particularly in Rates, our former CIB Non-Strategic portfolio as well as a legacy loan portfolio from the former Private & Commercial Bank in Poland. BNP Paribas and Deutsche Bank have signed a master transaction agreement to provide continuity of service to Deutsche Bank's Prime Finance and Electronic Equities clients. Under the agreement Deutsche Bank will continue to operate the platform until clients can be migrated to BNP Paribas.

Corporate & Other includes revenues, costs and resources held centrally that are not allocated to the individual business segments as well as valuation and timing differences from different accounting methods used for management reporting and IFRS and unallocated items.

Measurement of segment profit or loss

Segment reporting requires a presentation of the segment results based on management reporting methods, including a reconciliation between the results of the business segments and the consolidated financial statements, which is presented in the "Segmental Results of Operations" within this note. The information provided about each segment is based on internal management reporting about segment profit or loss, assets and other information which is regularly reviewed by the chief operating decision maker. Segment assets are presented in the Group's internal management reporting based on a consolidated view, i.e., the amounts do not include intersegment balances. The Group`s internal management reporting does not consider segment liabilities or interest expense separately. Similarly, depreciation and amortization, tax expenses and other comprehensive income are not presented separately internally and are therefore not disclosed here

Non-IFRS compliant accounting methods used in the Group's management reporting represent either valuation or classification differences. The largest valuation differences relate to measurement at fair value in management reporting versus measurement at amortized cost under IFRS and to the recognition of trading results from own shares in revenues in management reporting (in IB) and in equity under IFRS. The major classification difference relates to noncontrolling interest, which represents the net share of minority shareholders in revenues, provision for credit losses, noninterest expenses and income tax expenses. Noncontrolling interest is reported as a component of the profit before tax of the businesses in management reporting (with a reversal in C&O) and a component of net income appropriation under IFRS.

Since the Group's business activities are diverse in nature and its operations are integrated, certain estimates and judgments have been made to apportion revenue and expense items among the business segments.

The management reporting systems allocate the Group's external net interest income according to the value of funding consumed or provided by each business segment's activities, in accordance with our internal funds transfer pricing ("FTP") framework. Furthermore, to retain comparability with those competitors that have legally independent units with their own equity funding, the Group allocates a net notional interest benefit on its consolidated capital, in line with each segment's proportion of average shareholders' equity.

Management uses certain measures for equity and related ratios as part of its internal reporting system because it believes that these measures provide it with a useful indication of the financial performance of the business segments. The Group discloses such measures to provide investors and analysts with further insight into how management operates the Group's businesses and to enable them to better understand the Group's results. These measures includes allocation of average shareholder's equity..

Funds transfer pricing

In the third quarter of 2019, the FTP framework was changed in order to enhance its effectiveness as a management tool, as well as to better support funding cost optimization. The new FTP framework aims to more accurately allocate funding costs and benefits to the firm's business divisions in a risk-adjusted and uniform manner across the Group. The methodology

changes do not impact overall group funding costs for 2019, however, the framework results in a re-allocation of costs and benefits between segments. This re-allocation resulted in a benefit to the trading businesses, partially offset by a reduction in funding benefits to the Private Bank (PB) and Corporate Bank (CB) versus the prior methodology. As part of the introduction of the new framework, a decision was made to hold certain transitional costs in Corporate & Others (C&O), which will reduce over time, reflecting the long dated nature of our liabilities.

The impact of the new FTP framework for the first half of 2019 would have been a positive impact on the results of IB and CRU of approximately € 140 million and € 30 million, respectively, while the results of CB, PB and C&O would have been lower by approximately € 20 million, € 30 million and € 120 million, respectively.

The impact of the new FTP framework for the full year 2018 would have been a positive impact on the results of IB and CRU of approximately € 200 million and € 40 million, respectively, while the results of CB, PB and C&O would have been lower by approximately € 60 million, € 60 million and € 120 million, respectively.

Allocation of average shareholder's equity

Shareholders' equity is fully allocated to the Group's segments based on the regulatory capital demand of each segment. Regulatory capital demand reflects the combined contribution of each segment to the Groups' Common Equity Tier 1 ratio, the Groups' Leverage ratio and the Group's Capital Loss under Stress. Contributions in each of the three dimensions are weighted to reflect their relative importance and level of constraint for the Group. Contributions to the Common Equity Tier 1 ratio and the Leverage ratio are measured through Risk Weighted Assets (RWA) and Leverage Ratio Exposure. The Group's Capital Loss under Stress is a measure of the Group's overall economic risk exposure under a defined stress scenario. Goodwill and other intangible assets are directly attributed to the Group's segments in order to allow the determination of allocated tangible shareholders' equity and the respective returns. Shareholders' equity and tangible shareholders' equity is allocated on a monthly basis and averaged across quarters and for the full year

US Tax Exempt Securities

Net interest income as a component of net revenues, profit (loss) before tax and related ratios are presented on a fully taxable-equivalent basis for US tax-exempt securities for the Investment Bank. This enables management to measure performance of taxable and tax-exempt securities on a comparable basis. This presentation resulted in an increase in Investment Bank net interest income of € 45 million for full year 2020, € 35 million for full year 2019 and € 42 million for full year 2018. This increase is offset in Group consolidated figures through a reversal in C&O. The tax rate used in determining the fully taxable-equivalent of net interest income in respect of the majority of the US tax-exempt securities is 21 % for 2020, 2019 and 2018.

Infrastructure full-time Employees realignment

During 2020 Infrastructure functions that were embedded within the operating business segments were realigned to the business segment C&O. Accordingly, approximately 11,600 full-time equivalent employees (FTEs) moved from the Investment Bank, Private Bank and Capital Release Unit to the business segment C&O. This change did not result in a material financial impact at a segment level, as costs are allocated from C&O to the operating business segments that are using the service of the respective infrastructure functions, in accordance with the plan. Comparative segmental financial information has been restated accordingly.

Segmental results of operations

The following tables present the results of the Group's business segments, including the reconciliation to the consolidated results of operations under IFRS.

in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total Consolidated
							2020
Net revenues[1]	5,145	9,283	8,126	2,229	(225)	(548)	24,011
Provision for credit losses	366	688	711	2	29	(3)	1,792
Noninterest expenses							
Compensation and benefits	1,064	1,906	2,884	740	168	3,709	10,471
General and administrative expenses	3,126	3,493	4,242	764	1,774	(3,140)	10,259
Impairment of goodwill and other intangible assets	0	0	0	0	0	0	0
Restructuring activities	28	14	413	22	5	3	485
Total noninterest expenses	4,218	5,413	7,539	1,527	1,947	572	21,216
Noncontrolling interests	0	11	0	157	(0)	(169)	0
Profit (loss) before tax	561	3,171	(124)	544	(2,201)	(948)	1,003
Cost/income ratio	82%	58%	93%	68%	N/M	N/M	88%
Assets[2]	237,497	573,673	296,637	9,453	197,667	10,035	1,324,961
Additions to non-current assets	10	4	485	32	0	2,891	3,423
Risk-weighted assets	57,288	128,487	77,074	9,997	34,415	21,690	328,951
Leverage exposure (fully loaded)[3]	273,795	476,261	307,746	4,695	71,726	29,243	1,078,268
Average allocated shareholders' equity	9,904	22,943	11,521	4,760	6,205	(23)	55,308
Post-tax return on average shareholders' equity[4]	3 %	9 %	(1) %	8 %	(26) %	N/M	0 %
Post-tax return on average tangible shareholders' equity[4]	4 %	10 %	(2) %	21 %	(27) %	N/M	0 %
[1] includes:							
Net interest income	2,882	3,325	4,475	1	61	804	11,548
Net income (loss) from equity method investments	3	22	23	63	9	1	120
[2] includes:							
Equity method investments	69	399	60	304	67	4	901

N/M – Not meaningful
[3] The Group leverage exposure is presented excluding certain Euro-based exposures facing Eurosystem central banks based on the ECB-decision (EU) 2020/1306 and after having obtained permission from the ECB. The segmental leverage exposures are presented without that deduction.
[4] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was 39 % for the year ended December 31, 2020. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 28% for the year ended December 31, 2020. For further information, please refer to "Supplementary Information (Unaudited): Non-GAAP Financial Measures" of this annual report.

in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total Consolidated
							2019
Net revenues[1]	5,244	7,019	8,206	2,332	217	147	23,165
Provision for credit losses	284	109	344	1	(14)	0	723
Noninterest expenses							
Compensation and benefits	1,073	1,983	2,990	832	359	3,906	11,142
General and administrative expenses	3,165	4,237	4,481	851	2,898	(3,380)	12,253
Impairment of goodwill and other intangible assets	492	0	545	0	0	0	1,037
Restructuring activities	137	169	126	29	143	40	644
Total noninterest expenses	4,867	6,389	8,142	1,711	3,400	566	25,076
Noncontrolling interests	0	20	(0)	152	1	(173)	0
Profit (loss) before tax	92	502	(279)	468	(3,170)	(247)	(2,634)
Cost/income ratio	93 %	91 %	99 %	73 %	N/M	N/M	108 %
Assets[2]	228,663	501,774	270,334	9,936	259,224	27,743	1,297,674
Additions to non-current assets	9	1	215	27	0	1,069	1,322
Risk-weighted assets	58,808	116,552	74,032	9,527	45,874	19,223	324,015
Leverage exposure (fully loaded)	270,647	432,254	282,575	4,643	126,905	51,016	1,168,040
Average allocated shareholders' equity	10,464	23,052	11,729	4,821	10,105	0	60,170
Post-tax return on average shareholders' equity[3]	0 %	1 %	(2) %	7 %	(23) %	N/M	(10) %
Post-tax return on average tangible shareholders' equity[3]	0 %	1 %	(3) %	18 %	(24) %	N/M	(11) %
[1] includes:							
Net interest income	2,633	2,707	4,804	(39)	85	3,559	13,749
Net income (loss) from equity method investments	3	32	14	49	12	1	110
[2] includes:							
Equity method investments	66	412	82	276	90	4	929

N/M – Not meaningful
Prior year segmental information presented in the current structure
[3] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was (100) % for the year ended December 31, 2019. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 28 % for the year ended December 31, 2019. For further information, please refer to "Supplementary Information (Unaudited): Non-GAAP Financial Measures" of this annual report.

							2018
in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total Consolidated
Net revenues[1]	5,278	7,561	8,520	2,187	1,911	(142)	25,316
Provision for credit losses	142	70	349	(1)	(36)	1	525
Noninterest expenses							
Compensation and benefits	1,063	2,175	3,059	787	547	4,183	11,814
General and administrative expenses	2,787	4,134	4,448	929	2,742	(3,754)	11,286
Impairment of goodwill and other intangible assets	0	0	0	0	0	0	0
Restructuring activities	32	199	49	19	62	(1)	360
Total noninterest expenses	3,882	6,509	7,556	1,735	3,351	428	23,461
Noncontrolling interests	0	24	(0)	85	1	(109)	0
Profit (loss) before tax	1,254	958	616	368	(1,404)	(461)	1,330
Cost/income ratio	74 %	86 %	89 %	79 %	N/M	N/M	93 %
Assets[2]	216,163	458,464	270,150	10,030	370,090	23,240	1,348,137
Additions to non-current assets	13	2	303	43	1	1,286	1,647
Risk-weighted assets[3]	60,305	122,662	67,180	10,365	72,133	17,789	350,432
Leverage exposure (fully loaded)	257,921	413,631	287,760	5,044	280,638	27,933	1,272,926
Average allocated shareholders' equity	10,927	22,629	12,397	4,837	11,704	115	62,610
Post-tax return on average shareholders' equity[4]	8 %	2 %	3 %	5 %	(9) %	N/M	(0) %
Post-tax return on average tangible shareholders' equity[4]	9 %	3 %	4 %	14 %	(9) %	N/M	(0) %
[1] includes:							
Net interest income	2,419	2,209	4,905	(51)	416	3,417	13,316
Net income (loss) from equity method investments	3	157	2	41	10	6	219
[2] includes:							
Equity method investments	63	406	78	240	87	5	879

N/M – Not meaningful
Prior year segmental information presented in the current structure
[3] Risk-weighted assets are based upon CRR/CRD 4 fully loaded.
[4] The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was 74 % for the year ended December 31, 2018. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 28 % for the year ended December 31, 2018. For further information, please refer to "Supplementary Information (Unaudited): Non-GAAP Financial Measures" of this annual report.

Corporate Bank

				2020 increase (decrease) from 2019		2019 increase (decrease) from 2018	
in € m. (unless stated otherwise)	2020	2019	2018	in € m.	in %	in € m.	in %
Net revenues							
Global Transaction Banking	3,698	3,810	3,908	(112)	(3)	(98)	(3)
Commercial Banking	1,447	1,433	1,370	14	1	63	5
Total net revenues	**5,145**	5,244	5,278	(98)	(2)	(34)	(1)
Provision for credit losses	**366**	284	142	82	29	142	100
Noninterest expenses							
Compensation and benefits	1,064	1,073	1,063	(9)	(1)	10	1
General and administrative expenses	3,126	3,165	2,787	(40)	(1)	378	14
Impairment of goodwill and other intangible assets	0	492	0	(492)	N/M	492	N/M
Restructuring activities	28	137	32	(108)	(79)	105	N/M
Total noninterest expenses	**4,218**	4,867	3,882	(649)	(13)	986	25
Noncontrolling interests	**0**	0	0	0	N/M	0	N/M
Profit (loss) before tax	**561**	92	1,254	469	N/M	(1,162)	(93)
Total assets (in € bn)[1]	237	229	216	9	4	13	6
Loans (gross of allowance for loan losses, in € bn)	114	119	114	(5)	(4)	5	5
Employees (full-time equivalent)	7,368	7,712	7,653	(345)	(4)	60	1

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.

Investment Bank

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019		2019 increase (decrease) from 2018	
				in € m.	in %	in € m.	in %
Net revenues							
Fixed Income, Currency (FIC) Sales & Trading	7,088	5,525	5,644	1,563	28	(119)	(2)
Debt Origination	1,542	1,119	1,146	423	38	(27)	(2)
Equity Origination	379	149	197	231	155	(48)	(24)
Advisory	277	370	458	(93)	(25)	(88)	(19)
Origination & Advisory	2,198	1,638	1,801	560	34	(163)	(9)
Other	(3)	(144)	117	142	(98)	(261)	N/M
Total net revenues	9,283	7,019	7,561	2,265	32	(542)	(7)
Provision for credit losses	688	109	70	579	N/M	38	54
Noninterest expenses							
Compensation and benefits	1,906	1,983	2,175	(76)	(4)	(192)	(9)
General and administrative expenses	3,493	4,237	4,134	(744)	(18)	103	2
Impairment of goodwill and other intangible assets	0	0	0	0	N/M	0	N/M
Restructuring activities	14	169	199	(155)	(92)	(30)	(15)
Total noninterest expenses	5,413	6,389	6,509	(975)	(15)	(121)	(2)
Noncontrolling interests	11	20	24	(8)	(41)	(4)	(18)
Profit (loss) before tax	3,171	502	958	2,669	N/M	(456)	(48)
Total assets (in € bn)[1]	574	502	458	72	14	43	9
Loans (gross of allowance for loan losses, in € bn)	69	75	65	(6)	(8)	10	16
Employees (full-time equivalent)	4,258	4,351	4,623	(93)	(2)	(273)	(6)

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.

Private Bank

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019		2019 increase (decrease) from 2018	
				in € m.	in %	in € m.	in %
Net revenues:							
Private Bank Germany	4,992	5,070	5,320	(78)	(2)	(251)	(5)
International Private Bank	3,134	3,137	3,200	(3)	(0)	(64)	(2)
IPB Personal Banking[1]	830	869	888	(39)	(5)	(19)	(2)
IPB Private Banking[2] and Wealth Management	2,304	2,267	2,312	37	2	(44)	(2)
Total net revenues	8,126	8,206	8,520	(80)	(1)	(314)	(4)
Of which:							
Net interest income	4,475	4,804	4,905	(329)	(7)	(101)	(2)
Commissions and fee income	3,048	2,865	2,788	183	6	77	3
Remaining income	603	537	827	66	12	(290)	(35)
Provision for credit losses	711	344	349	367	107	(5)	(2)
Noninterest expenses:							
Compensation and benefits	2,884	2,990	3,059	(106)	(4)	(69)	(2)
General and administrative expenses	4,242	4,481	4,448	(240)	(5)	34	1
Impairment of goodwill and other intangible assets	0	545	0	(545)	N/M	545	N/M
Restructuring activities	413	126	49	287	N/M	76	155
Total noninterest expenses	7,539	8,142	7,556	(603)	(7)	586	8
Noncontrolling interests	0	(0)	(0)	1	N/M	(0)	N/M
Profit (loss) before tax	(124)	(279)	616	155	(56)	(895)	N/M
Total assets (in € bn)[3]	297	270	270	26	10	0	0
Loans (gross of allowance for loan losses, in € bn)	237	227	216	10	5	11	5
Assets under Management (in € bn)[4]	493	482	446	11	2	36	8
Net flows (in € bn)	16	4	(2)	12	N/M	7	N/M
Employees (full-time equivalent)	29,945	31,599	32,437	(1,654)	(5)	(838)	(3)

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Including small businesses in Italy, Spain and India
[2] Including small & mid caps in Italy, Spain and India.
[3] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.
[4] We define assets under management as (a) assets we hold on behalf of customers for investment purposes and/or (b) client assets that are managed by us. We manage assets under management on a discretionary or advisory basis, or these assets are deposited with us. Deposits are considered assets under management if they serve investment purposes. In our Private Bank Germany and Private & Commercial Business International, this includes all time deposits and savings deposits. In Wealth Management, we assume that all customer deposits are held with us primarily for investment purposes.

Asset Management

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	in %	2019 increase (decrease) from 2018 in € m.	in %
Net revenues							
Management Fees	2,136	2,141	2,115	(5)	(0)	26	1
Performance and transaction fees	90	201	91	(111)	(55)	111	122
Other	3	(10)	(19)	13	N/M	9	(48)
Total net revenues	2,229	2,332	2,187	(103)	(4)	146	7
Provision for credit losses	2	1	(1)	1	59	2	N/M
Noninterest expenses							
Compensation and benefits	740	832	787	(92)	(11)	45	6
General and administrative expenses	764	851	929	(87)	(10)	(78)	(8)
Impairment of goodwill and other intangible assets	0	0	0	0	N/M	0	N/M
Restructuring activities	22	29	19	(6)	(22)	10	51
Total noninterest expenses	1,527	1,711	1,735	(185)	(11)	(23)	(1)
Noncontrolling interests	157	152	85	5	4	68	80
Profit (loss) before tax	544	468	368	76	16	99	27
Total assets (in € bn)[1]	9	10	10	(0)	(5)	(0)	(1)
Assets under Management (in € bn)	793	768	664	25	3	103	16
Net flows (in € bn)	30	25	(23)	5	N/M	48	N/M
Employees (full-time equivalent)	3,926	3,925	4,022	1	0	(97)	(2)

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.

Capital Release Unit

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	in %	2019 increase (decrease) from 2018 in € m.	in %
Net revenues	(225)	217	1,911	(442)	N/M	(1,694)	(89)
Provision for credit losses	29	(14)	(36)	43	N/M	22	(61)
Noninterest expenses							
Compensation and benefits	168	359	547	(191)	(53)	(188)	(34)
General and administrative expenses	1,774	2,898	2,742	(1,124)	(39)	156	6
Impairment of goodwill and other intangible assets	0	0	0	0	N/M	0	N/M
Restructuring activities	5	143	62	(139)	(97)	81	131
Total noninterest expenses	1,947	3,400	3,351	(1,453)	(43)	49	1
Noncontrolling interests	(0)	1	1	(1)	N/M	1	136
Profit (loss) before tax	(2,201)	(3,170)	(1,404)	970	(31)	(1,766)	126
Total assets (in € bn)[1]	198	259	370	(62)	(24)	(111)	(30)
Employees (full-time equivalent)	482	621	1,540	(139)	(22)	(919)	(60)

N/M – Not meaningful
Prior year segmental information presented in the current structure
[1] Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.

Corporate & Other (C&O)

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	in %	2019 increase (decrease) from 2018 in € m.	in %
Net revenues	(548)	147	(142)	(695)	N/M	289	N/M
Provision for credit losses	(3)	0	1	(4)	N/M	(0)	(84)
Noninterest expenses							
Compensation and benefits	3,709	3,906	4,183	(197)	(5)	(277)	(7)
General and administrative expenses	(3,140)	(3,380)	(3,754)	240	(7)	374	(10)
Impairment of goodwill and other intangible assets	0	0	0	0	N/M	0	N/M
Restructuring activities	3	40	(1)	(38)	(93)	41	N/M
Total noninterest expenses	572	566	428	6	1	138	32
Noncontrolling interests	(169)	(173)	(109)	3	(2)	(64)	58
Profit (loss) before tax	(948)	(247)	(461)	(701)	N/M	215	(47)
Employees (full-time equivalent)	38,680	39,389	41,463	(709)	(2)	(2,074)	(5)

N/M – Not meaningful
Prior year segmental information presented in the current structure

Entity-wide disclosures

The Group's Entity-Wide Disclosures include net revenues from internal and external counterparties. Excluding revenues from internal counterparties would require disproportionate IT investment and is not in line with the Bank's management approach. For detail of our net revenue components please see "Management Report: Operating and Financial Review: Results of Operations: Corporate Divisions".

The following table presents total net revenues (before provisions for credit losses) by geographic area for the years ended December 31, 2020, 2019 and 2018, respectively. The information presented for CB, IB, PB, AM and CRU has been classified based primarily on the location of the Group's office in which the revenues are recorded. The information for C&O is presented on a global level only, as management responsibility for C&O is held centrally.

in € m.	2020	2019	2018
Germany:			
Corporate Bank	2,532	2,441	2,366
Investment Bank	431	365	419
Private Bank	5,460	5,541	5,903
Asset Management	992	1,054	985
Capital Release Unit	23	80	85
Total Germany	9,439	9,481	9,758
UK:			
Corporate Bank	110	207	241
Investment Bank	3,552	2,244	2,621
Private Bank	31	29	26
Asset Management	292	345	295
Capital Release Unit	(383)	(181)	485
Total UK	3,602	2,645	3,667
Rest of Europe, Middle East and Africa:			
Corporate Bank	934	846	832
Investment Bank	358	292	250
Private Bank	1,680	1,669	1,704
Asset Management	344	380	379
Capital Release Unit	35	99	243
Total Rest of Europe, Middle East and Africa	3,352	3,286	3,408
Americas (primarily United States):			
Corporate Bank	772	952	1,023
Investment Bank	3,281	2,697	2,958
Private Bank	362	374	361
Asset Management	465	437	413
Capital Release Unit	50	88	712
Total Americas	4,930	4,548	5,467
Asia/Pacific:			
Corporate Bank	796	797	816
Investment Bank	1,660	1,420	1,313
Private Bank	594	593	527
Asset Management	136	116	114
Capital Release Unit	49	130	387
Total Asia/Pacific	3,236	3,057	3,157
Corporate and Other	(548)	147	(142)
Consolidated net revenues[1]	24,011	23,165	25,316

[1] Consolidated net revenues comprise interest and similar income, interest expenses and total noninterest income (including net commission and fee income). Revenues are attributed to countries based on the location in which the Group's booking office is located. The location of a transaction on the Group's books is sometimes different from the location of the headquarters or other offices of a customer and different from the location of the Group's personnel who entered into or facilitated the transaction. Where the Group records a transaction involving its staff and customers and other third parties in different locations frequently depends on other considerations, such as the nature of the transaction, regulatory considerations and transaction processing considerations.

Notes to the consolidated income statement

05 – Net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss

Net interest income

in € m.	2020	2019	2018
Interest and similar income:[1]			
Interest income on cash and central bank balances	321	1,762	1,860
Interest income on interbank balances (w/o central banks)	325	293	223
Central bank funds sold and securities purchased under resale agreements	318	340	221
Loans	11,586	13,760	12,992
Other	913	844	475
Total Interest and similar income from assets measured at amortized cost	13,463	16,999	15,771
Interest income on financial assets at fair value through other comprehensive income	635	1,023	1,014
Total interest and similar income calculated using the effective interest method	14,097	18,022	16,785
Financial assets at fair value through profit or loss	3,856	7,186	7,933
Total interest and similar income	17,954	25,208	24,718
Interest expense:[1,2]			
Interest-bearing deposits	2,065	3,643	3,122
Central bank funds purchased and securities sold under repurchase agreements	169	367	379
Other short-term borrowings	62	163	139
Long-term debt	1,612	2,002	1,981
Trust preferred securities	42	187	234
Other	807	1,667	1,679
Total interest expense measured at amortized cost	4,758	8,030	7,534
Financial liabilities at fair value through profit or loss	1,648	3,429	3,868
Total interest expense	6,405	11,458	11,402
Net interest income	11,548	13,749	13,316

[1] Prior period comparatives for gross interest income and gross interest expense have been restated. The restatements did not affect net interest income. € 59 million and € 75 million for year ended December 31, 2019 and December 31, 2018 were restated.
[2] € 124 million was reclassified from trading Income to interest expense for year ended December 31, 2018.

Other interest income for the year ended December 31, 2020, 2019 and 2018 included € 43 million, € 93 million and € 93 million, respectively, which were related to government grants under the Targeted Longer-Term Refinancing Operations II (TLTRO II)-program.

Impact of ECB Targeted Longer-term Refinancing Operations (TLTRO III)

The Governing Council of the ECB decided on a number of modifications to the terms and conditions of its TLTRO III in order to support further the provision of credit to households and firms in the face of the current economic disruption and heightened uncertainty caused by the COVID-19 pandemic. Banks whose eligible net lending exceeds 0% between March 1, 2020 and March 31, 2021 pay a rate 0.5 % lower than the average deposit facility rate for borrowings between June 24, 2020 and June 23, 2021. This would currently equate to an all-in rate of (1) %. The interest rate outside of this period will be the average interest rate on the deposit facility (currently (0.5) %). The Group accounts for the potential reduction in the borrowing rate as government grant under IAS 20. The income from the government grant is presented in net interest income and is recognized when there is reasonable assurance that the Group will receive the grant and will comply with the conditions attached to the grants.

The effective interest rate of each borrowing takes into account the base interest rate which is the average of the rates on the main refinancing operations over the life of the relevant TLTRO III operation (with the exception of the period from June 24, 2020, to June 23, 2021, when it will be 50 basis points lower than that average).

Other interest income for the year ended December 31, 2020 included € 86 million, which were related to government grants under the Targeted Longer-Term Refinancing Operations III (TLTRO III)-refinancing program. This is because for the year ended December 31, 2020 the Group has established reasonable assurance for the benefit that arises from the base rate discount and the initial modified lending criteria but not for the new lending criteria in the TLTRO III refinancing program. The Group has borrowed € 37.5 billion under the TLTRO III-refinancing program as of December 31, 2020.

Net gains (losses) on financial assets/liabilities at fair value through profit or loss

in € m.	2020	2019	2018
Trading income (loss):			
Sales & Trading (Equity)[1,2]	(409)	87	369
Sales & Trading (FIC)[1]	3,457	2,563	2,712
Total Sales & Trading	3,049	2,650	3,081
Other trading income (loss)[1]	(952)	(2,453)	(3,154)
Total trading income (loss)[2]	2,097	197	(72)
Net gains (losses) on non-trading financial assets mandatory at fair value through profit or loss:			
Breakdown by financial assets category:			
Debt Securities[3]	5	72	(77)
Equity Securities[3]	114	271	159
Loans and loan commitments	(38)	28	77
Deposits	(9)	(19)	27
Others non-trading financial assets mandatory at fair value through profit and loss	203	25	26
Total net gains (losses) on non-trading financial assets mandatory at fair value through profit or loss:	276	377	212
Net gains (losses) on financial assets/liabilities designated at fair value through profit or loss:			
Breakdown by financial asset/liability category:			
Loans and loan commitments	15	(9)	7
Deposits	(1)	(0)	19
Long-term debt	(71)	(386)	1,118
Other financial assets/liabilities designated at fair value through profit or loss	16	15	(75)
Total net gains (losses) on financial assets/liabilities designated at fair value through profit or loss	(40)	(381)	1,069
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss[2]	2,332	193	1,209

[1] Prior year figures are presented in the current structure.
[2] € 124 million was reclassified from trading income to net interest income for year ended December 31, 2018.
[3] Prior year number revised.

Combined net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss

in € m.	2020	2019	2018
Net interest income[1]	11,548	13,749	13,316
Trading income (loss)[1,2]	2,097	197	(72)
Net gains (losses) on non-trading financial assets mandatory at fair value through profit or loss	276	377	212
Net gains (losses) on financial assets/liabilities designated at fair value through profit or loss	(40)	(381)	1,069
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss	2,332	193	1,209
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss[3]	13,880	13,942	14,524
Commercial Banking	1,107	1,089	1,034
Global Transaction Banking	1,828	1,620	1,527
Corporate Bank	2,935	2,709	2,562
FIC Sales & Trading	6,991	5,696	5,251
Remaining Products	205	(252)	23
Investment Bank	7,196	5,444	5,273
Private Bank	4,623	4,946	5,017
Asset Management	(98)	87	(88)
Capital Release Unit	(33)	155	1,442
Corporate & Other	(742)	602	318
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	13,880	13,942	14,524

[1] € 124 million was reclassified from trading income to net interest income for year ended December 31, 2018.
[2] Trading income includes gains and losses from derivatives not qualifying for hedge accounting.
[3] Prior year segmental information presented in the current structure.

The Group’s trading and risk management businesses include significant activities in interest rate instruments and related derivatives. Under IFRS, interest and similar income earned from trading instruments and financial instruments designated at fair value through profit or loss (i.e., coupon and dividend income), and the costs of funding net trading positions, are part of net interest income. The Group’s trading activities can periodically shift income to either net interest income or to net gains (losses) of financial assets/liabilities at fair value through profit or loss depending on a variety of factors, including risk management strategies. The above table combines net interest income and net gains (losses) of financial assets/liabilities at fair value through profit or loss by business division.

06 – Commissions and fee income

in € m.	2020	2019	2018
Commission and fee income and expense:			
Commission and fee income	12,227	12,283	12,921
Commission and fee expense	2,803	2,763	2,882
Net commissions and fee income	**9,424**	9,520	10,039

Disaggregation of revenues by product type and business segment

							Dec 31,2020
in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total Consolidated
Major type of services:							
Commissions for administration	245	17	235	23	1	(3)	518
Commissions for assets under management	19	1	319	3,090	0	1	3,429
Commissions for other securities	365	0	35	0	0	0	401
Underwriting and advisory fees	29	1,688	13	0	1	(42)	1,688
Brokerage fees	21	357	1,103	72	113	(1)	1,665
Commissions for local payments	437	(2)	951	0	0	7	1,394
Commissions for foreign commercial business	409	25	104	0	0	(3)	536
Commissions for foreign currency/exchange business	4	0	6	0	0	0	11
Commissions for loan processing and guarantees	529	210	305	0	7	7	1,058
Intermediary fees	13	2	757	1	1	12	787
Fees for sundry other customer services	271	289	39	131	4	7	741
Total fee and commissions income	2,343	2,588	3,867	3,317	127	(15)	12,227
Gross expense							(2,803)
Net fees and commissions							9,424

in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Dec 31,2019 Total Consolidated
Major type of services:							
Commissions for administration	251	8	234	23	5	0	521
Commissions for assets under management	22	1	304	3,219	1	2	3,547
Commissions for other securities	330	0	28	1	1	0	359
Underwriting and advisory fees	29	1,568	15	0	61	(17)	1,656
Brokerage fees	13	253	930	81	470	5	1,751
Commissions for local payments	498	0	974	0	1	1	1,474
Commissions for foreign commercial business	455	26	106	0	0	(1)	586
Commissions for foreign currency/exchange business	7	0	7	0	0	0	15
Commissions for loan processing and guarantees	497	189	281	0	16	6	989
Intermediary fees	32	2	486	0	1	14	535
Fees for sundry other customer services	297	349	54	127	23	1	850
Total fee and commissions income	2,429	2,397	3,419	3,451	578	10	12,283
Gross expense							(2,763)
Net fees and commissions							9,520

Prior year segmental information presented in the current structure.

in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Dec 31,2018 Total Consolidated
Major type of services:							
Commissions for administration	275	10	249	22	15	(3)	568
Commissions for assets under management	23	16	260	3,131	6	0	3,436
Commissions for other securities	301	0	29	2	2	0	335
Underwriting and advisory fees	38	1,479	15	(1)	193	(28)	1,696
Brokerage fees	12	260	884	82	999	0	2,238
Commissions for local payments	490	(1)	959	0	12	(1)	1,460
Commissions for foreign commercial business	471	32	117	0	2	(1)	621
Commissions for foreign currency/exchange business	7	0	7	0	1	0	15
Commissions for loan processing and guarantees	521	187	246	0	26	1	981
Intermediary fees	24	1	437	0	13	17	493
Fees for sundry other customer services	281	578	69	117	31	0	1,076
Total fee and commissions income	2,444	2,564	3,273	3,352	1,300	(13)	12,921
Gross expense							(2,882)
Net fees and commissions							10,039

Prior year segmental information presented in the current structure.

As of December 31, 2020, there were unsatisfied performance obligations with an expected original maturity of more than one year of € 66 million with a time band of seven years from 2022 to 2028 from alternative funds managed by the Group's asset management business. The decrease of the unsatisfied performance obligations compared to December 31, 2019 (€75 million with a time band of seven years from 2021 to 2027) was mainly driven by a change in the fund model. Likewise, this affected timing of when fund assets would be sold and therefore when performance fees would be generated.

As of December 31, 2020 and December 31, 2019, the Group's balance of receivables from commission and fee income was € 876 million and € 861 million, respectively. As of December 31, 2020 and December 31, 2019, the Group's balance of contract liabilities associated to commission and fee income was € 65 million and € 195 million, respectively. Contract liabilities arise from the Group's obligation to provide future services to a customer for which it has received consideration from the customer prior to completion of the services. The balances of receivables and contract liabilities do not vary significantly from period to period reflecting the fact that they predominately relate to recurring service contracts with service periods of less than one year such as monthly current account services and quarterly asset management services. As a result, prior period balances of contract liabilities are generally recognized in revenue in the subsequent period. Customer payment in exchange for services provided are generally subject to performance by the Group over the specific service period such that the Group's right to payment arises at the end of the service period when its performance obligations are fully completed. Therefore, no material balance of contract asset is reported.

07 – Gains and losses on derecognition of financial assets measured at amortized cost

For the twelve months ended December 31, 2020, the Group sold financial assets measured at amortized cost of € 10 billion (December 31, 2019: € 390 million and December 31, 2018: € 92 million) primarily from a Hold to Collect (HTC) portfolio in Postbank as well as sales made from a HTC portfolio in Treasury. A decision was made to divest the Postbank bond portfolio as part of the integration of Postbank into the Group. The Treasury sales were made as part of a strategy realignment for managing the interest rate risk in the Banking Book as a result of these sales, the HTC business model is no longer valid for future acquisitions of assets in this portfolio.

The table below presents the gains and (losses) arising from derecognition of these securities.

in €	2020	2019	2018
Gains	334	0	2
Losses	(10)	(0)	(0)
Net gains (losses) from derecognition of securities measured at amortized cost	324	0	2

08 – Other income (loss)

in € m.	2020	2019	2018
Other income (loss):			
Net gains (losses) on disposal of loans	(13)	3	(4)
Insurance premiums	3	3	3
Net income (loss) from hedge relationships qualifying for hedge accounting	(214)	(635)	(497)
Remaining other income (loss)[1]	161	(40)	712
Total other income (loss)	(61)	(668)	215

[1] Includes net gains (losses) of € (59) million, € 4 million and € 141 million for the years ended December 31, 2020, 2019 and 2018, respectively, that are related to non-current assets and disposal groups held for sale.

09 – General and administrative expenses

in € m.	2020	2019	2018
General and administrative expenses:			
Information Technology[1]	3,862	5,011	4,043
Occupancy, furniture and equipment expenses[2]	1,724	1,693	1,698
Regulatory, Tax & Insurance[2,3]	1,407	1,440	1,570
Professional services[4]	982	1,143	1,323
Banking Services and outsourced operations[4]	962	967	960
Market Data and Research Services[1]	376	421	415
Travel expenses	76	256	288
Marketing expenses	174	251	299
Other expenses[5]	696	1,071	690
Total general and administrative expenses	**10,259**	12,253	11,286

[1] Prior year numbers have been restated to reflect the shift of telecommunications expenses from (communications) and market data & research services expenses to information technology expenses.
[2] Prior year numbers have been restated to reflect the shift of insurance premium expenses from occupancy, furniture and equipment expenses to regulatory, tax & insurance expenses.
[3] Includes bank levy of € 633 million in 2020, € 622 million in 2019 and € 690 million in 2018.
[4] Prior year numbers have been restated to reflect the shift of other outsourced operations expenses from professional services expenses to banking services and outsourced operations expenses.
[5] Includes litigation related expenses of € 158 million in 2020, € 473 million in 2019 and € 88 million in 2018. See Note 27 "Provisions", for more detail on litigation.

10 – Restructuring

Restructuring is primarily driven by the implementation of the Group's strategic changes as announced in the third quarter 2019. We have defined and are in the process of implementing measures that aim to strengthen the bank, position it for growth and simplify its organizational set-up. The measures also aim to reduce adjusted costs through higher efficiency, by optimizing and streamlining processes, and by exploiting synergies.

Restructuring expense is comprised of termination benefits, additional expenses covering the acceleration of deferred compensation awards not yet amortized due to the discontinuation of employment and contract termination costs related to real estate.

Net restructuring expense by division

in € m.	2020	2019	2018
Corporate Bank	28	137	32
Investment Bank	14	169	199
Private Bank	413	126	49
Asset Management	22	29	19
Capital Release Unit	5	143	62
Corporate & Other	3	40	(1)
Total Net Restructuring Charges	**485**	644	360

Net restructuring by type

in € m.	2020	2019	2018
Restructuring – Staff related	479	641	367
thereof:			
Termination Benefits	441	476	248
Retention Acceleration	36	156	113
Social Security	1	9	6
Restructuring – Non Staff related	6	2	(6)
Total Net Restructuring Charges	**485**	644	360

Provisions for restructuring amounted to € 676 million, € 684 million and € 585 million as of December 31, 2020, December 31, 2019 and December 31, 2018, respectively. The majority of the current provisions for restructuring are expected to be utilized in the next two years.

During 2020, 1,447 full-time equivalent staff was reduced through restructuring (2019: 2,564 and 2018: 3,217).

Organizational changes

Full-time equivalent staff	2020	2019	2018
Corporate Bank	303	138	223
Investment Bank	100	626	670
Private Bank	630	731	910
Asset Management	48	136	92
Capital Release Unit	69	514	243
Infrastructure	297	419	1,078
Total full-time equivalent staff	**1,447**	2,564	3,217

FTE figures for 2019 and 2018 have been restated to include former Postbank employees which were not previously included in the disclosure.

11 – Earnings per share

Basic earnings per share amounts are computed by dividing net income (loss) attributable to Deutsche Bank shareholders by the average number of common shares outstanding during the year. The average number of common shares outstanding is defined as the average number of common shares issued, reduced by the average number of shares in treasury and by the average number of shares that will be acquired under physically-settled forward purchase contracts, and increased by undistributed vested shares awarded under deferred share plans.

Diluted earnings per share assumes the conversion into common shares of outstanding securities or other contracts to issue common stock, such as share options, convertible debt, unvested deferred share awards and forward contracts. The aforementioned instruments are only included in the calculation of diluted earnings per share if they are dilutive in the respective reporting period.

Computation of basic and diluted earnings per share

in € m.	2020	2019	2018
Net income (loss) attributable to Deutsche Bank shareholders and additional equity components	**483**	(5,390)	267
Coupons paid on additional equity components[1]	**(349)**	(330)	(292)
Net income (loss) attributable to Deutsche Bank shareholders – numerator for basic earnings per share	**135**	(5,719)	(26)
Effect of dilutive securities	0	0	0
Net income (loss) attributable to Deutsche Bank shareholders after assumed conversions – numerator for diluted earnings per share	**135**	(5,719)	(26)
Number of shares in million			
Weighted-average shares outstanding – denominator for basic earnings per share	**2,108.2**	2,110.0	2,102.2
Effect of dilutive securities:			
Forwards	0.0	0.0	0.0
Employee stock compensation options	0.0	0.0	0.0
Deferred shares	62.0	0.0	0.0
Other (including trading options)	0.0	0.0	0.0
Dilutive potential common shares	0.0	0.0	0.0
Adjusted weighted-average shares after assumed conversions – denominator for diluted earnings per share	**2,170.1**	2,110.0	2,102.2

[1] Since 2019 the tax impact is recognized in income (loss) directly.

Earnings per share

in €	2020	2019	2018
Basic earnings per share	0.06	(2.71)	(0.01)
Diluted earnings per share	0.06	(2.71)	(0.01)

In accordance with IAS 33 the coupons paid on Additional Tier 1 Notes are not attributable to Deutsche Bank shareholders and therefore need to be deducted in the calculation. This adjustment created a net loss situation for Earnings per Common Share in 2018. Due to the net loss situation for 2019 and 2018 potentially dilutive shares are generally not considered for the earnings per share calculation, because to do so would have been anti-dilutive and hence decreased the net loss per share.

Instruments outstanding and not included in the calculation of diluted earnings per share[1]

Number of shares in m.	2020	2019	2018
Call options sold	0.0	0.0	0.0
Employee stock compensation options	0.0	0.0	0.0
Deferred shares	0.0	117.6	108.8

[1] Not included in the calculation of diluted earnings per share, because to do so would have been anti-dilutive.

Notes to the consolidated balance sheet

12 – Financial assets/liabilities at fair value through profit or loss

in € m.	Dec 31, 2020	Dec 31, 2019
Financial assets classified as held for trading:		
Trading assets:		
Trading securities	97,756	97,986
Other trading assets[1]	10,173	12,889
Total trading assets	107,929	110,875
Positive market values from derivative financial instruments	343,493	332,931
Total financial assets classified as held for trading	**451,422**	443,805
Non-trading financial assets mandatory at fair value through profit or loss:		
Securities purchased under resale agreements	46,057	53,366
Securities borrowed	17,009	17,918
Loans	2,192	3,174
Other financial assets mandatory at fair value through profit or loss	10,864	12,443
Total Non-trading financial assets mandatory at fair value through profit or loss	**76,121**	86,901
Financial assets designated at fair value through profit or loss:		
Loans	437	7
Other financial assets designated at fair value through profit or loss	0	0
Total financial assets designated at fair value through profit or loss	**437**	7
Total financial assets at fair value through profit or loss	**527,980**	530,713

[1] Includes traded loans of € 8.3 billion and € 12.3 billion at December 31, 2020 and 2019 respectively.

in € m.	Dec 31, 2020	Dec 31, 2019
Financial liabilities classified as held for trading:		
Trading liabilities:		
Trading securities	43,882	36,692
Other trading liabilities	434	373
Total trading liabilities	44,316	37,065
Negative market values from derivative financial instruments	327,775	316,506
Total financial liabilities classified as held for trading	**372,090**	353,571
Financial liabilities designated at fair value through profit or loss:		
Securities sold under repurchase agreements	41,636	42,723
Loan commitments	2	1
Long-term debt	3,374	4,761
Other financial liabilities designated at fair value through profit or loss	1,570	2,847
Total financial liabilities designated at fair value through profit or loss	**46,582**	50,332
Investment contract liabilities	526	544
Total financial liabilities at fair value through profit or loss	**419,199**	404,448

Financial assets & liabilities designated at fair value through profit or loss

The Group has designated various lending relationships at fair value through profit or loss. Lending facilities consist of drawn loan assets and undrawn irrevocable loan commitments. The maximum exposure to credit risk on a drawn loan is its fair value. The Group's maximum exposure to credit risk on drawn loans was € 437 million and € 7 million as of December 31, 2020, and 2019, respectively. Exposure to credit risk also exists for undrawn irrevocable loan commitments and is predominantly counterparty credit risk.

The credit risk on the securities purchased under resale agreements and securities borrowed designated under the fair value option is mitigated by the holding of collateral. The valuation of these instruments takes into account the credit enhancement in the form of the collateral received. As such there is no material movement during the year or cumulatively due to movements in counterparty credit risk on these instruments.

Changes in fair value of financial assets attributable to movements in counterparty credit risk

in € m.	Dec 31, 2020	Dec 31, 2019
Notional value of financial assets exposed to credit risk	439	0
Annual change in the fair value reflected in the Statement of Income	(8)	0
Cumulative change in the fair value	(8)	0
Notional of credit derivatives used to mitigate credit risk	166	0
Annual change in the fair value reflected in the Statement of Income	8	0
Cumulative change in the fair value	8	0

Changes in fair value of financial liabilities attributable to movements in the Group's credit risk[1]

in € m.	Dec 31, 2020	Dec 31, 2019
Presented in Other comprehensive Income		
Cumulative change in the fair value	(12)	(34)
Presented in Statement of income		
Annual change in the fair value reflected in the Statement of Income	0	0
Cumulative change in the fair value	0	0

[1] The fair value of a financial liability incorporates the credit risk of that financial liability. Changes in the fair value of financial liabilities issued by consolidated structured entities have been excluded as this is not related to the Group's credit risk but to that of the legally isolated structured entity, which is dependent on the collateral it holds.

Transfers of the cumulative gains or losses within equity during the period

in € m.	Dec 31, 2020	Dec 31, 2019
Cumulative gains or losses within equity during the period	0	0

Amounts realized on derecognition of liabilities designated at fair value through profit or loss

in € m.	Dec 31, 2020	Dec 31, 2019
Amount presented in other comprehensive income realized at derecognition	0	0

The excess of the contractual amount repayable at maturity over the carrying value of financial liabilities[1]

in € m.	Dec 31, 2020	Dec 31, 2019
Including undrawn loan commitments[2]	963	873
Excluding undrawn loan commitments	159	357

[1] Assuming the liability is extinguished at the earliest contractual maturity that the Group can be required to repay. When the amount payable is not fixed, it is determined by reference to conditions existing at the reporting date.
[2] The contractual cash flows at maturity for undrawn loan commitments assume full drawdown of the facility.

13 – Financial instruments carried at fair value

Valuation methods and control

The Group has an established valuation control framework which governs internal control standards, methodologies, and procedures over the valuation process.

Prices Quoted in Active Markets – The fair value of instruments that are quoted in active markets are determined using the quoted prices where they represent prices at which regularly and recently occurring transactions take place.

Valuation Techniques – The Group uses valuation techniques to establish the fair value of instruments where prices, quoted in active markets, are not available. Valuation techniques used for financial instruments include modelling techniques, the use of indicative quotes for proxy instruments, quotes from recent and less regular transactions and broker quotes.

For some financial instruments a rate or other parameter, rather than a price, is quoted. Where this is the case then the market rate or parameter is used as an input to a valuation model to determine fair value. For some instruments, modelling techniques follow industry standard models, for example, discounted cash flow analysis and standard option pricing models. These models are dependent upon estimated future cash flows, discount factors and volatility levels. For more complex or unique instruments, more sophisticated modelling techniques are required, and may rely upon assumptions or more complex parameters such as correlations, prepayment speeds, default rates and loss severity.

Frequently, valuation models require multiple parameter inputs. Where possible, parameter inputs are based on observable data or are derived from the prices of relevant instruments traded in active markets. Where observable data is not available for parameter inputs, then other market information is considered. For example, indicative broker quotes and consensus pricing information are used to support parameter inputs where they are available. Where no observable information is available to support parameter inputs then they are based on other relevant sources of information such as prices for similar

transactions, historic data, economic fundamentals, and research information, with appropriate adjustment to reflect the terms of the actual instrument being valued and current market conditions.

Valuation Adjustments – Valuation adjustments are an integral part of the valuation process. In making appropriate valuation adjustments, the Group follows methodologies that consider factors such as bid-offer spreads, counterparty/own credit and funding risk. Bid-offer spread valuation adjustments are required to adjust mid-market valuations to the appropriate bid or offer valuation. The bid or offer valuation is the best representation of the fair value for an instrument, and therefore its fair value. The carrying value of a long position is adjusted from mid to bid, and the carrying value of a short position is adjusted from mid to offer. Bid-offer valuation adjustments are determined from bid-offer prices observed in relevant trading activity and in quotes from other broker-dealers or other knowledgeable counterparties. Where the quoted price for the instrument is already a bid-offer price then no additional bid-offer valuation adjustment is necessary. Where the fair value of financial instruments is derived from a modelling technique, then the parameter inputs into that model are normally at a mid-market level. Such instruments are generally managed on a portfolio basis and, when specified criteria are met, valuation adjustments are taken to reflect the cost of closing out the net exposure the Bank has to individual market or counterparty risks. These adjustments are determined from bid-offer prices observed in relevant trading activity and quotes from other broker-dealers.

Where complex valuation models are used, or where less-liquid positions are being valued, then bid-offer levels for those positions may not be available directly from the market, and therefore for the close-out cost of these positions, models and parameters must be estimated. When these adjustments are designed, the Group closely examines the valuation risks associated with the model as well as the positions themselves, and the resulting adjustments are closely monitored on an ongoing basis.

Counterparty Credit Valuation Adjustments (CVAs) are required to cover expected credit losses to the extent that the valuation technique does not already include an expected credit loss factor relating to the non-performance risk of the counterparty. The CVA amount is applied to all relevant over-the-counter (OTC) derivatives, and is determined by assessing the potential credit exposure to a given counterparty and taking into account any collateral held, the effect of any relevant netting arrangements, expected loss given default and the probability of default, based on available market information, including Credit Default Swap (CDS) spreads. Where counterparty CDS spreads are not available, relevant proxies are used.

The fair value of the Group's financial liabilities at fair value through profit or loss (i.e., OTC derivative liabilities and issued note liabilities designated at fair value through profit or loss) incorporates valuation adjustments to measure the change in the Group's own credit risk (i.e. Debt Valuation Adjustments (DVA) for Derivatives and Own Credit Adjustment (OCA) for structured notes). For derivative liabilities the Group considers its own creditworthiness by assessing all counterparties' expected future exposure to the Group, taking into account any collateral posted by the Group, the effect of relevant netting arrangements, the probability of default of the Group, based on the Group's market CDS level and the expected loss given default, taking into account the seniority of derivative claims under resolution (statutory subordination). Issued note liabilities are discounted utilizing the spread at which similar instruments would be issued or bought back at the measurement date as this reflects the value from the perspective of a market participant who holds the identical item as an asset. This spread is further parameterized into a market level of funding component and an idiosyncratic own credit component. Under IFRS 9 the change in the own credit component is reported under Other Comprehensive Income (OCI).

When determining CVA and DVA, additional adjustments are made where appropriate to achieve fair value, due to the expected loss estimate of a particular arrangement, or where the credit risk being assessed differs in nature to that described by the available CDS instrument.

Funding Valuation Adjustments (FVA) are required to incorporate the market implied funding costs into the fair value of derivative positions. The FVA reflects a discounting spread applied to uncollateralized and partially collateralized derivatives and is determined by assessing the market-implied funding costs on both assets and liabilities.

Where there is uncertainty in the assumptions used within a modelling technique, an additional adjustment is taken to calibrate the model price to the expected market price of the financial instrument. Typically, such transactions have bid-offer levels which are less observable, and these adjustments aim to estimate the bid-offer by computing the liquidity-premium associated with the transaction. Where a financial instrument is of sufficient complexity that the cost of closing it out would be higher than the cost of closing out its component risks, then an additional adjustment is taken to reflect this.

Valuation Control – The Group has an independent specialized valuation control group within the Risk function which governs and develops the valuation control framework and manages the valuation control processes. The mandate of this specialist function includes the performance of the independent valuation control process for all businesses, the continued development of valuation control methodologies and techniques, as well as devising and governing the formal valuation control policy framework. Special attention of this independent valuation control group is directed to areas where management judgment forms part of the valuation process.

Results of the valuation control process are collected and analyzed as part of a standard monthly reporting cycle. Variances of differences outside of preset and approved tolerance levels are escalated both within the Finance function and with Senior Business Management for review, resolution and, if required, adjustment.

For instruments where fair value is determined from valuation models, the assumptions and techniques used within the models are independently validated by an independent specialist model validation group that is part of the Group's Risk Management function.

Quotes for transactions and parameter inputs are obtained from a number of third party sources including exchanges, pricing service providers, firm broker quotes and consensus pricing services. Price sources are examined and assessed to determine the quality of fair value information they represent, with greater emphasis given to those possessing greater valuation certainty and relevance. The results are compared against actual transactions in the market to ensure the model valuations are calibrated to market prices.

Price and parameter inputs to models, assumptions and valuation adjustments are verified against independent sources. Where they cannot be verified to independent sources due to lack of observable information, the estimate of fair value is subject to procedures to assess its reasonableness. Such procedures include performing revaluation using independently generated models (including where existing models are independently recalibrated), assessing the valuations against appropriate proxy instruments and other benchmarks, and performing extrapolation techniques. Assessment is made as to whether the valuation techniques produce fair value estimates that are reflective of market levels by calibrating the results of the valuation models against market transactions where possible.

Fair value hierarchy

The financial instruments carried at fair value have been categorized under the three levels of the IFRS fair value hierarchy as follows:

Level 1 – Instruments valued using quoted prices in active markets are instruments where the fair value can be determined directly from prices which are quoted in active, liquid markets and where the instrument observed in the market is representative of that being priced in the Group's inventory.

These include: government bonds, exchange-traded derivatives and equity securities traded on active, liquid exchanges.

Level 2 – Instruments valued with valuation techniques using observable market data are instruments where the fair value can be determined by reference to similar instruments trading in active markets, or where a technique is used to derive the valuation but where all inputs to that technique are observable.

These include: many OTC derivatives; many investment-grade listed credit bonds; some CDS; many collateralized debt obligations (CDO); and many less-liquid equities.

Level 3 – Instruments valued using valuation techniques using market data which is not directly observable are instruments where the fair value cannot be determined directly by reference to market-observable information, and some other pricing technique must be employed. Instruments classified in this category have an element which is unobservable and which has a significant impact on the fair value.

These include: more-complex OTC derivatives; distressed debt; highly-structured bonds; illiquid asset-backed securities (ABS); illiquid CDO's (cash and synthetic); some private equity placements; many commercial real estate (CRE) loans; illiquid loans; and some municipal bonds.

Carrying value of the financial instruments held at fair value[1]

in € m.	Dec 31, 2020 Quoted prices in active market (Level 1)	Dec 31, 2020 Valuation technique observable parameters (Level 2)	Dec 31, 2020 Valuation technique unobservable parameters (Level 3)	Dec 31, 2019 Quoted prices in active market (Level 1)	Dec 31, 2019 Valuation technique observable parameters (Level 2)	Dec 31, 2019 Valuation technique unobservable parameters (Level 3)
Financial assets held at fair value:						
Trading assets	44,525	55,220	8,183	44,595	56,713	9,567
Trading securities	44,349	50,340	3,066	44,427	50,128	3,430
Other trading assets	176	4,880	5,117	168	6,584	6,137
Positive market values from derivative financial instruments	4,208	330,561	8,725	2,682	322,082	8,167
Non-trading financial assets mandatory at fair value through profit or loss	2,992	68,511	4,618	3,806	77,818	5,278
Financial assets designated at fair value through profit or loss	0	436	0	0	0	7
Financial assets at fair value through other comprehensive income	28,057	25,741	2,037	30,924	13,529	1,050
Other financial assets at fair value	93	9,238[2]	20	2	7,366[2]	363
Total financial assets held at fair value	79,875	489,707	23,583	82,009	477,507	24,431
Financial liabilities held at fair value:						
Trading liabilities	36,699	7,615	2	23,873	13,152	41
Trading securities	36,674	7,206	2	23,862	12,828	2
Other trading liabilities	25	409	0	11	324	38
Negative market values from derivative financial instruments	4,430	315,145	8,200	2,841	307,013	6,652
Financial liabilities designated at fair value through profit or loss	0	45,622	960	0	48,378	1,954
Investment contract liabilities	0	526	0	0	544	0
Other financial liabilities at fair value	799[2]	3,573[2]	(294)[3]	527	4,609[2]	(34)[3]
Total financial liabilities held at fair value	41,929	372,480	8,867	27,241	373,697	8,612

1 Amounts in this table are generally presented on a gross basis, in line with the Group's accounting policy regarding offsetting of financial instruments, as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates".
2 Predominantly relates to derivatives qualifying for hedge accounting.
3 Relates to derivatives which are embedded in contracts where the host contract is held at amortized cost but for which the embedded derivative is separated. The separated embedded derivatives may have a positive or a negative fair value but have been presented in this table to be consistent with the classification of the host contract. The separated embedded derivatives are held at fair value on a recurring basis and have been split between the fair value hierarchy classifications.

During the third quarter of 2020, the Group implemented refinements to its liquidity testing procedures related to the definition of an active market. The revised approach is expected to result in a more transparent and consistent fair value hierarchy classification. The impact of these changes was the net movement of approximately € 2.0 billion of Trading Assets and € 9.0 billion Financial Assets at Fair Value through Other Comprehensive Income from Level 1 into Level 2

During the fourth quarter of 2020, the Group refined its levelling methodology for Strategic Corporate Lending loans related to the use of pricing of comparable positions. This refinement is expected to result in a more transparent and consistent fair value hierarchy classification.. The impact of this change was a movement of approximately € 1.0 billion of financial assets held at fair value through other comprehensive income into Level 3 from Level 2.

Valuation techniques

The Group has an established valuation control framework which governs internal control standards, methodologies, valuation techniques and procedures over the valuation process and fair value measurement. In 2020, the outbreak of the COVID-19 pandemic broadly impacted the financial markets, notably in March 2020 and April 2020, causing market dislocations and increased market volatility. This resulted an increase in Group's level 3 balances by € 4.0 billion mainly relating to interest rate derivatives, which has since been materially reversed by the end of fourth quarter of 2020. Sensitivity related to the level 3 assets and liabilities increased due to increased dispersion in market data.

The market conditions necessitated additional focus and review in certain areas, including assessment of bid-offer spreads to ensure they were representative of fair value. However, standard procedures and controls were followed, and we continued to adhere to strict internal governance for fair value measurement changes and movements.

The following is an explanation of the valuation techniques used in establishing the fair value of the different types of financial instruments that the Group trades.

Sovereign, Quasi-sovereign and Corporate Debt and Equity Securities – Where there are no recent transactions then fair value may be determined from the last market price adjusted for all changes in risks and information since that date. Where a close proxy instrument is quoted in an active market then fair value is determined by adjusting the proxy value for differences in the risk profile of the instruments. Where close proxies are not available then fair value is estimated using more complex

modelling techniques. These techniques include discounted cash flow models using current market rates for credit, interest, liquidity and other risks. For equity securities modeling techniques may also include those based on earnings multiples.

Mortgage- and Other Asset-Backed Securities (MBS/ABS) include residential and commercial MBS and other ABS including CDOs. ABS have specific characteristics as they have different underlying assets and the issuing entities have different capital structures. The complexity increases further where the underlying assets are themselves ABS, as is the case with many of the CDO instruments.

Where no reliable external pricing is available, ABS are valued, where applicable, using either relative value analysis which is performed based on similar transactions observable in the market, or industry-standard valuation models making largest possible use of available observable inputs. The industry standard models calculate principal and interest payments for a given deal based on assumptions that can be independently price tested. The inputs include prepayment speeds, loss assumptions (timing and severity) and a discount rate (spread, yield or discount margin). These inputs/assumptions are derived from actual transactions, external market research and market indices where appropriate.

Loans – For certain loans fair value may be determined from the market price on a recently occurring transaction adjusted for all changes in risks and information since that transaction date. Where there are no recent market transactions then broker quotes, consensus pricing, proxy instruments or discounted cash flow models are used to determine fair value. Discounted cash flow models incorporate parameter inputs for credit risk, interest rate risk, foreign exchange risk, loss given default estimates and amounts utilized given default, as appropriate. Credit risk, loss given default and utilization given default parameters are determined using information from the loan or other credit markets, where available and appropriate.

Leveraged loans can have transaction-specific characteristics which can limit the relevance of market-observed transactions. Where similar transactions exist for which observable quotes are available from external pricing services then this information is used with appropriate adjustments to reflect the transaction differences. When no similar transactions exist, a discounted cash flow valuation technique is used with credit spreads derived from the appropriate leveraged loan index, incorporating the industry classification, subordination of the loan, and any other relevant information on the loan and loan counterparty.

Over-The-Counter Derivative Financial Instruments – Market standard transactions in liquid trading markets, such as interest rate swaps, foreign exchange forward and option contracts in G7 currencies, and equity swap and option contracts on listed securities or indices are valued using market standard models and quoted parameter inputs. Parameter inputs are obtained from pricing services, consensus pricing services and recently occurring transactions in active markets wherever possible.

More complex instruments are modeled using more sophisticated modeling techniques specific for the instrument and are calibrated to available market prices. Where the model output value does not calibrate to a relevant market reference then valuation adjustments are made to the model output value to adjust for any difference. In less active markets, data is obtained from less frequent market transactions, broker quotes and through extrapolation and interpolation techniques. Where observable prices or inputs are not available, management judgment is required to determine fair values by assessing other relevant sources of information such as historical data, fundamental analysis of the economics of the transaction and proxy information from similar transactions.

Financial Liabilities Designated at Fair Value through Profit or Loss under the Fair Value Option – The fair value of financial liabilities designated at fair value through profit or loss under the fair value option incorporates all market risk factors including a measure of the Group's credit risk relevant for that financial liability. The financial liabilities include structured note issuances, structured deposits, and other structured securities issued by consolidated vehicles, which may not be quoted in an active market. The fair value of these financial liabilities is determined by discounting the contractual cash flows using the relevant credit-adjusted yield curve. The market risk parameters are valued consistently to similar instruments held as assets, for example, any derivatives embedded within the structured notes are valued using the same methodology discussed in the "Over-The-Counter Derivative Financial Instruments" section above.

Where the financial liabilities designated at fair value through profit or loss under the fair value option are collateralized, such as securities loaned and securities sold under repurchase agreements, the credit enhancement is factored into the fair valuation of the liability.

Investment Contract Liabilities – Assets which are linked to the investment contract liabilities are owned by the Group. The investment contract obliges the Group to use these assets to settle these liabilities. Therefore, the fair value of investment contract liabilities is determined by the fair value of the underlying assets (i.e., amount payable on surrender of the policies).

Analysis of financial instruments with fair value derived from valuation techniques containing significant unobservable parameters (Level 3)

Some of the financial assets and financial liabilities in Level 3 of the fair value hierarchy have identical or similar offsetting exposures to the unobservable input. However, according to IFRS they are required to be presented gross.

Trading Securities – Certain illiquid emerging market corporate bonds and illiquid highly structured corporate bonds are included in this level of the hierarchy. In addition, some of the holdings of notes issued by securitization entities, commercial and residential MBS, collateralized debt obligation securities and other ABS are reported here. The decrease during the year was mainly due to a sales, settlements, losses, deconsolidation and net transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments, partially offset by purchases and issuances.

Positive and Negative Market Values from Derivative Instruments categorized in this level of the fair value hierarchy are valued based on one or more significant unobservable parameters. The unobservable parameters may include certain correlations, certain longer-term volatilities, certain prepayment rates, credit spreads and other transaction-specific parameters.

Level 3 derivatives includes certain options where the volatility is unobservable; certain basket options in which the correlations between the referenced underlying assets are unobservable; longer-term interest rate option derivatives; multi-currency foreign exchange derivatives; and certain credit default swaps for which the credit spread is not observable.

The increase in assets during the year are driven by gains partially offset by settlements, deconsolidation and transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments. The increase in liabilities during the year are driven by losses partially offset by settlement and transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments.

Other Trading Instruments classified in Level 3 of the fair value hierarchy mainly consist of traded loans valued using valuation models based on one or more significant unobservable parameters. Level 3 loans comprise illiquid leveraged loans and illiquid residential and commercial mortgage loans. The decrease during the year refers to sales, settlements and losses partially offset by purchases, issuances and transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments.

Non-trading financial assets mandatory at fair value through profit or loss classified in Level 3 of fair value hierarchy consist of any non-trading financial asset that does not fall into the Hold to Collect nor Hold to Collect and Sell business models. This includes predominately reverse repurchase agreements which are managed on a fair value basis. Additionally, any financial asset that falls into the Hold to Collect or Hold to Collect and Sell business models for which the contractual cash flow characteristics are not SPPI. The decrease during the year is driven by sales, settlements and losses partially offset by purchases, issuances and transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments.

Financial Assets/Liabilities designated at Fair Value through Profit or Loss – Certain corporate loans and structured liabilities which were designated at fair value through profit or loss under the fair value option were categorized in this level of the fair value hierarchy. The corporate loans are valued using valuation techniques which incorporate observable credit spreads, recovery rates and unobservable utilization parameters. Revolving loan facilities are reported in the third level of the hierarchy because the utilization in the event of the default parameter is significant and unobservable.

In addition, certain hybrid debt issuances designated at fair value through profit or loss containing embedded derivatives are valued based on significant unobservable parameters. These unobservable parameters include single stock volatility correlations. The decrease in liabilities during the year is driven by settlements and net transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments partially offset by issuances and losses.

Financial assets at fair value through other comprehensive income include non-performing loan portfolios where there is no trading intent and the market is very illiquid. The increase during the year is driven by purchases, issuances and transfers between Level 2 and Level 3 due to changes in the observability of input parameters used to value these instruments partially offset by settlements, sales and losses.

Reconciliation of financial instruments classified in Level 3

Reconciliation of financial instruments classified in Level 3

										Dec 31, 2020
in € m.	Balance, beginning of year	Changes in the group of consolidated companies	Total gains/ losses[1]	Purchases	Sales	Issuances[2]	Settlements[3]	Transfers into Level 3[4]	Transfers out of Level 3[4]	Balance, end of year
Financial assets held at fair value:										
Trading securities	3,430	(79)	(101)	2,134	(1,628)	11	(423)	333	(612)	3,066
Positive market values from derivative financial instruments	8,167	(1)	1,422	0	0	0	(833)	1,541	(1,572)	8,725
Other trading assets	6,137	0	(423)	1,188	(2,712)	1,855	(1,207)	710	(433)	5,117
Non-trading financial assets mandatory at fair value through profit or loss	5,278	0	(256)	389	(394)	347	(811)	852	(786)	4,618
Financial assets designated at fair value through profit or loss	7	0	(1)	0	0	6	(12)	0	0	0
Financial assets at fair value through other comprehensive income	1,050	0	(66)[5]	127	(50)	718	(182)	618	(177)	2,037
Other financial assets at fair value	363	0	(9)	0	0	0	4	(147)	(191)	20
Total financial assets held at fair value	24,431	(79)	567[6,7]	3,839	(4,784)	2,937	(3,463)	3,906	(3,771)	23,583
Financial liabilities held at fair value:										
Trading securities	2	0	(2)	0	0	0	1	0	(0)	2
Negative market values from derivative financial instruments	6,652	0	2,108	0	0	0	(365)	1,420	(1,615)	8,200
Other trading liabilities	38	0	(1)	0	0	0	(9)	0	(28)	0
Financial liabilities designated at fair value through profit or loss	1,954	0	55	0	0	186	(763)	215	(687)	960
Other financial liabilities at fair value	(34)	0	26	0	0	0	(16)	(187)	(83)	(294)
Total financial liabilities held at fair value	8,612	0	2,185[6,7]	0	0	186	(1,151)	1,448	(2,413)	8,867

[1] Total gains and losses predominantly relate to net gains (losses) on financial assets/liabilities at fair value through profit or loss reported in the consolidated statement of income. The balance also includes net gains (losses) on financial assets at fair value through other comprehensive income reported in the consolidated statement of income and unrealized net gains (losses) on financial assets at fair value through other comprehensive income and exchange rate changes reported in other comprehensive income, net of tax. Further, certain instruments are hedged with instruments in level 1 or level 2 but the table above does not include the gains and losses on these hedging instruments. Additionally, both observable and unobservable parameters may be used to determine the fair value of an instrument classified within level 3 of the fair value hierarchy; the gains and losses presented below are attributable to movements in both the observable and unobservable parameters.
[2] Issuances relate to the cash amount received on the issuance of a liability and the cash amount paid on the primary issuance of a loan to a borrower.
[3] Settlements represent cash flows to settle the asset or liability. For debt and loan instruments this includes principal on maturity, principal amortizations and principal repayments. For derivatives all cash flows are presented in settlements.
[4] Transfers in and transfers out of Level 3 are related to changes in observability of input parameters. During the year they are recorded at their fair value at the beginning of year. For instruments transferred into Level 3 the table shows the gains and losses and cash flows on the instruments as if they had been transferred at the beginning of the year. Similarly for instruments transferred out of Level 3 the table does not show any gains or losses or cash flows on the instruments during the year since the table is presented as if they have been transferred out at the beginning of the year.
[5] Total gains and losses on financial assets at fair value through other comprehensive income include a gain of € 11 million recognized in other comprehensive income, net of tax.
[6] This amount includes the effect of exchange rate changes. For total financial assets held at fair value this effect is a loss of € 495 million and for total financial liabilities held at fair value this is a gain of € 66 million.
[7] For assets positive balances represent gains, negative balances represent losses. For liabilities positive balances represent losses, negative balances represent gains.

										Dec 31, 2019
in € m.	Balance, beginning of year	Changes in the group of consolidated companies	Total gains/ losses[1]	Purchases	Sales	Issuances[2]	Settlements[3]	Transfers into Level 3[4]	Transfers out of Level 3[4]	Balance, end of year
Financial assets held at fair value:										
Trading securities	4,086	(0)	76	2,122	(2,242)	0	(408)	537	(742)	3,430
Positive market values from derivative financial instruments	8,309	0	1,547	0	0	0	(1,420)	1,571	(1,840)	8,167
Other trading assets	5,676	(75)	176	1,031	(2,493)	2,615	(1,186)	729	(337)	6,137
Non-trading financial assets mandatory at fair value through profit or loss	6,066	(12)	401	1,448	(473)	592	(1,822)	727	(1,649)	5,278
Financial assets designated at fair value through profit or loss	0	0	2	0	0	8	(16)	12	0	7
Financial assets at fair value through other comprehensive income	268	0	2[5]	536	(35)	0	(19)	300	(2)	1,050
Other financial assets at fair value	207	0	0	0	0	0	(6)	176	(14)	363
Total financial assets held at fair value	**24,614**	**(86)**	**2,204[6,7]**	**5,136**	**(5,243)**	**3,215**	**(4,877)**	**4,052**	**(4,584)**	**24,431**
Financial liabilities held at fair value:										
Trading securities	0	0	2	0	0	0	0	0	0	2
Negative market values from derivative financial instruments	6,289	0	1,337	0	0	0	(1,175)	1,904	(1,702)	6,652
Other trading liabilities	15	0	(8)	0	0	0	(4)	34	0	38
Financial liabilities designated at fair value through profit or loss	2,021	(77)	290	0	0	385	(489)	681	(856)	1,954
Other financial liabilities at fair value	(611)	0	304	0	0	0	100	56	117	(34)
Total financial liabilities held at fair value	**7,714**	**(77)**	**1,925[6,7]**	**0**	**0**	**385**	**(1,568)**	**2,674**	**(2,441)**	**8,612**

[1] Total gains and losses predominantly relate to net gains (losses) on financial assets/liabilities at fair value through profit or loss reported in the consolidated statement of income. The balance also includes net gains (losses) on financial assets at fair value through other comprehensive income reported in the consolidated statement of income and unrealized net gains (losses) on financial assets at fair value through other comprehensive income and exchange rate changes reported in other comprehensive income, net of tax. Further, certain instruments are hedged with instruments in level 1 or level 2 but the table above does not include the gains and losses on these hedging instruments. Additionally, both observable and unobservable parameters may be used to determine the fair value of an instrument classified within level 3 of the fair value hierarchy; the gains and losses presented below are attributable to movements in both the observable and unobservable parameters.
[2] Issuances relate to the cash amount received on the issuance of a liability and the cash amount paid on the primary issuance of a loan to a borrower.
[3] Settlements represent cash flows to settle the asset or liability. For debt and loan instruments this includes principal on maturity, principal amortizations and principal repayments. For derivatives all cash flows are presented in settlements.
[4] Transfers in and transfers out of Level 3 are related to changes in observability of input parameters. During the year they are recorded at their fair value at the beginning of year. For instruments transferred into Level 3 the table shows the gains and losses and cash flows on the instruments as if they had been transferred at the beginning of the year. Similarly for instruments transferred out of Level 3 the table does not show any gains or losses or cash flows on the instruments during the year since the table is presented as if they have been transferred out at the beginning of the year.
[5] Total gains and losses on financial assets at fair value through other comprehensive income include a loss of € 3 million recognized in other comprehensive income, net of tax.
[6] This amount includes the effect of exchange rate changes. For total financial assets held at fair value this effect is a gain of € 157 million and for total financial liabilities held at fair value this is a loss of € 25 million.
[7] For assets positive balances represent gains, negative balances represent losses. For liabilities positive balances represent losses, negative balances represent gains.

Sensitivity analysis of unobservable parameters

Where the value of financial instruments is dependent on unobservable parameter inputs, the precise level for these parameters at the balance sheet date might be drawn from a range of reasonably possible alternatives. In preparing the financial statements, appropriate levels for these unobservable input parameters are chosen so that they are consistent with prevailing market evidence and in line with the Group's approach to valuation control detailed above. Were the Group to have marked the financial instruments concerned using parameter values drawn from the extremes of the ranges of reasonably possible alternatives then as of December 31, 2020 it could have increased fair value by as much as € 1.8 billion or decreased fair value by as much as € 1.4 billion. As of December 31, 2019 it could have increased fair value by as much as € 1.7 billion or decreased fair value by as much as € 1.2 billion.

The changes in sensitive amounts from December 31, 2019 to December 31, 2020 were an increase in positive fair value movement of € 156 million, and an increase in negative fair value movement of € 215 million. In the same period there has been a € 848 million decrease in Group level 3 assets and € 256 million increase in Group level 3 liabilities. During 2020 the outbreak of the COVID-19 pandemic broadly impacted the financial markets, notably in the first quarter of 2020, causing market dislocations and increased market volatility. Sensitivity related to the level 3 assets and liabilities has increased throughout 2020 as this significantly increased dispersion in market data continues to impact the positive and negative fair value movements upwards in spite of the level 3 reductions reported in the same period. This is a result of a number of idiosyncratic factors, amongst which include the impact of reductions in certain level 3 exposures on items which are deemed to be less sensitive to unobservable input parameters, whereas increases in other level 3 exposures have occurred on items deemed to be more sensitive to unobservable input parameters

Our sensitivity calculation of unobservable parameters for Level 3 aligns to the approach used to assess valuation uncertainty for Prudent Valuation purposes. Prudent Valuation is a capital requirement for assets held at fair value. It provides a mechanism for quantifying and capitalizing valuation uncertainty in accordance with the European Commission Delegated Regulation (EU) 2016/101, which supplements Article 34 of Regulation (EU) No. 2019/876 (CRR), requiring institutions to apply as a deduction from CET 1 for the amount of any additional valuation adjustments on all assets measured at fair value calculated in accordance with Article 105 (14). This utilizes exit price analysis performed for the relevant assets and liabilities in the Prudent Valuation assessment. The downside sensitivity may be limited in some cases where the fair value is already demonstrably prudent.

This disclosure is intended to illustrate the potential impact of the relative uncertainty in the fair value of financial instruments for which valuation is dependent on unobservable input parameters. However, it is unlikely in practice that all unobservable parameters would be simultaneously at the extremes of their ranges of reasonably possible alternatives. Hence, the estimates disclosed above are likely to be greater than the true uncertainty in fair value at the balance sheet date. Furthermore, the disclosure is neither predictive nor indicative of future movements in fair value.

For many of the financial instruments considered here, in particular derivatives, unobservable input parameters represent only a subset of the parameters required to price the financial instrument, the remainder being observable. Hence for these instruments the overall impact of moving the unobservable input parameters to the extremes of their ranges might be relatively small compared with the total fair value of the financial instrument. For other instruments, fair value is determined based on the price of the entire instrument, for example, by adjusting the fair value of a reasonable proxy instrument. In addition, all financial instruments are already carried at fair values which are inclusive of valuation adjustments for the cost to close out that instrument and hence already factor in uncertainty as it reflects itself in market pricing. Any negative impact of uncertainty calculated within this disclosure, then, will be over and above that already included in the fair value contained in the financial statements.

Breakdown of the sensitivity analysis by type of instrument[1]

	Dec 31, 2020		Dec 31, 2019	
in € m.	Positive fair value movement from using reasonable possible alternatives	Negative fair value movement from using reasonable possible alternatives	Positive fair value movement from using reasonable possible alternatives	Negative fair value movement from using reasonable possible alternatives
Securities:				
Debt securities	287	163	257[2]	140[2]
Commercial mortgage-backed securities	9	22	4	1
Mortgage and other asset-backed securities	20	12	37	20
Corporate, sovereign and other debt securities	259	129	216[2]	119[2]
Equity securities	83	95	61[2]	53[2]
Derivatives:				
Credit	283	185	189	123
Equity	257	238	168	128
Interest related	306	266	312	303
Foreign Exchange	37	32	44	39
Other	93	82	116	101
Loans:				
Loans	483	306	525	264
Other	**0**	**0**	0	0
Total	**1,829**	**1,367**	1,673	1,151

[1] Where the exposure to an unobservable parameter is offset across different instruments then only the net impact is disclosed in the table.
[2] Reassessment of trades have resulted a reclassification in Positive and Negative fair value movement from using reasonable possible alternatives in 'Corporate, sovereign and other debt securities' from 'Equity securities'

Quantitative information about the sensitivity of significant unobservable inputs

The behaviour of the unobservable parameters on Level 3 fair value measurement is not necessarily independent, and dynamic relationships often exist between the other unobservable parameters and the observable parameters. Such relationships, where material to the fair value of a given instrument, are explicitly captured via correlation parameters, or are otherwise controlled via pricing models or valuation techniques. Frequently, where a valuation technique utilizes more than one input, the choice of a certain input will bound the range of possible values for other inputs. In addition, broader market factors (such as interest rates, equity, credit or commodity indices or foreign exchange rates) can also have effects.

The range of values shown below represents the highest and lowest inputs used to value the significant exposures within Level 3. The diversity of financial instruments that make up the disclosure is significant and therefore the ranges of certain parameters can be large. For example, the range of credit spreads on mortgage backed securities represents performing, more liquid positions with lower spreads then the less liquid, non-performing positions which will have higher credit spreads. As Level 3 contains the less liquid fair value instruments, the wide ranges of parameters seen is to be expected, as there is a high degree of pricing differentiation within each exposure type to capture the relevant market dynamics. There follows a brief description of each of the principal parameter types, along with a commentary on significant interrelationships between them.

Credit Parameters are used to assess the creditworthiness of an exposure, by enabling the probability of default and resulting losses of a default to be represented. The credit spread is the primary reflection of creditworthiness, and represents the premium or yield return above the benchmark reference instrument (typically LIBOR, or relevant Treasury Instrument, depending upon the asset being assessed), that a bond holder would require to allow for the credit quality difference between that entity and the reference benchmark. Higher credit spreads will indicate lower credit quality, and lead to a lower value for a given bond or other loan-asset that is to be repaid to the holder or lender by the borrower. Recovery Rates represent an estimate of the amount a lender would receive in the case of a default of a loan, or a bond holder would receive in the case of default of the bond. Higher recovery rates will give a higher valuation for a given bond position, if other parameters are held constant. Constant Default Rate (CDR) and Constant Prepayment Rate (CPR) allow more complex loan and debt assets to be assessed, as these parameters estimate the ongoing defaults arising on scheduled repayments and coupons, or whether the borrower is making additional (usually voluntary) prepayments. These parameters are particularly relevant when forming a fair value opinion for mortgage or other types of lending, where repayments are delivered by the borrower through time, or where the borrower may pre-pay the loan (seen for example in some residential mortgages). Higher CDR will lead to lower valuation of a given loan or mortgage as the lender will ultimately receive less cash.

Interest rates, credit spreads, inflation rates, foreign exchange rates and equity prices are referenced in some option instruments, or other complex derivatives, where the payoff a holder of the derivative will receive is dependent upon the behaviour of these underlying references through time. Volatility parameters describe key attributes of option behaviour by enabling the variability of returns of the underlying instrument to be assessed. This volatility is a measure of probability, with higher volatilities denoting higher probabilities of a particular outcome occurring. The underlying references (interest rates, credit spreads etc.) have an effect on the valuation of options, by describing the size of the return that can be expected from the option. Therefore the value of a given option is dependent upon the value of the underlying instrument, and the volatility of that instrument, representing the size of the payoff, and the probability of that payoff occurring. Where volatilities are high, the option holder will see a higher option value as there is greater probability of positive returns. A higher option value will also occur where the payoff described by the option is significant.

Correlations are used to describe influential relationships between underlying references where a derivative or other instrument has more than one underlying reference. Behind some of these relationships, for example commodity correlation and interest rate-foreign exchange correlations, typically lie macroeconomic factors such as the impact of global demand on groups of commodities, or the pricing parity effect of interest rates on foreign exchange rates. More specific relationships can exist between credit references or equity stocks in the case of credit derivatives and equity basket derivatives, for example. Credit correlations are used to estimate the relationship between the credit performance of a range of credit names, and stock correlations are used to estimate the relationship between the returns of a range of equities. A derivative with a correlation exposure will be either long- or short-correlation. A high correlation suggests a strong relationship between the underlying references is in force, and this will lead to an increase in value of a long-correlation derivative. Negative correlations suggest that the relationship between underlying references is opposing, i.e., an increase in price of one underlying reference will lead to a reduction in the price of the other.

An EBITDA (‘earnings before interest, tax, depreciation and amortization’) multiple approach can be used in the valuation of less liquid securities. Under this approach the enterprise value (‘EV’) of an entity can be estimated via identifying the ratio of the EV to EBITDA of a comparable observable entity and applying this ratio to the EBITDA of the entity for which a valuation is being estimated. Under this approach a liquidity adjustment is often applied due to the difference in liquidity between the generally listed comparable used and the company under valuation. A higher EV/EBITDA multiple will result in a higher fair value.

Financial instruments classified in Level 3 and quantitative information about unobservable inputs

						Dec 31, 2020
	Fair value					
in € m. (unless stated otherwise)	Assets	Liabilities	Valuation technique(s)[1]	Significant unobservable input(s) (Level 3)		Range
Financial instruments held at fair value – Non-Derivative financial instruments held at fair value:						
Mortgage and other asset backed securities held for trading:						
Commercial mortgage-backed securities	28	0	Price based	Price	0 %	114 %
			Discounted cash flow	Credit spread (bps)	133	1,270
Mortgage- and other asset-backed securities	155	0	Price based	Price	0 %	106 %
			Discounted cash flow	Credit spread (bps)	109	1,295
				Recovery rate	10 %	90 %
				Constant default rate	1 %	2 %
				Constant prepayment rate	1 %	25 %
Total mortgage- and other asset-backed securities	183	0				
Debt securities and other debt obligations	4,625	769	Price based	Price	0 %	200 %
Held for trading	2,813	2	Discounted cash flow	Credit spread (bps)	21	544
Corporate, sovereign and other debt securities	2,813					
Non-trading financial assets mandatory at fair value through profit or loss	1,652					
Designated at fair value through profit or loss	0	768				
Financial assets at fair value through other comprehensive income	160					
Equity securities	727	0	Market approach	Price per net asset value	42 %	100 %
Held for trading	70	0		Enterprise value/EBITDA (multiple)	5	23
Non-trading financial assets mandatory at fair value through profit or loss	657		Discounted cash flow	Weighted average cost capital	8 %	20 %
Designated at fair value through profit or loss	0		Price based	Price	0 %	108 %
Loans	7,888	0	Price based	Price	0 %	373 %
Held for trading	5,101	0	Discounted cash flow	Credit spread (bps)	51	2,233
Non-trading financial assets mandatory at fair value through profit or loss	910					
Designated at fair value through profit or loss	0	0		Recovery rate	20 %	85 %
Financial assets at fair value through other comprehensive income	1,877					
Loan commitments	0	1	Discounted cash flow	Credit spread (bps)	6	2,444
				Recovery rate	25 %	100 %
			Loan pricing model	Utilization	0 %	100 %
Other financial instruments	1,432[2]	198[3]	Discounted cash flow	IRR	7 %	16 %
				Repo rate (bps)	0	75
Total non-derivative financial instruments held at fair value	14,854	968				

[1] Valuation technique(s) and subsequently the significant unobservable input(s) relate to the respective total position.
[2] Other financial assets include € 16 million of other trading assets and€ 1.4 billion of other non-trading financial assets mandatory at fair value.
[3] Other financial liabilities include € 192 million of securities sold under repurchase agreements designated at fair value and € 6 million of other financial liabilities designated at fair value.

in € m. (unless stated otherwise)	Fair value Assets	Fair value Liabilities	Valuation technique(s)	Significant unobservable input(s) (Level 3)	Dec 31, 2020 Range	
Financial instruments held at fair value:						
Market values from derivative financial instruments:						
Interest rate derivatives	4,708	4,025	Discounted cash flow	Swap rate (bps)	(77)	787
				Inflation swap rate	1 %	3 %
				Constant default rate	0 %	10 %
				Constant prepayment rate	2 %	30 %
			Option pricing model	Inflation volatility	0 %	8 %
				Interest rate volatility	0 %	19 %
				IR - IR correlation	(25) %	97 %
				Hybrid correlation	(70) %	100 %
Credit derivatives	575	585	Discounted cash flow	Credit spread (bps)	0	1,759
				Recovery rate	0 %	77 %
			Correlation pricing model	Credit correlation	31 %	63 %
Equity derivatives	800	1,916	Option pricing model	Stock volatility	4 %	85 %
				Index volatility	17 %	75 %
				Index - index correlation	1	1
				Stock - stock correlation	41 %	67 %
				Stock Forwards	0 %	5 %
				Index Forwards	0 %	4 %
FX derivatives	1,749	1,427	Option pricing model	Volatility	(16) %	42 %
				Quoted Vol	0 %	0 %
Other derivatives	898	(54)[1]	Discounted cash flow	Credit spread (bps)	–	–
			Option pricing model	Index volatility	0 %	113 %
				Commodity correlation	16 %	52 %
Total market values from derivative financial instruments	8,729	7,899				

[1] Includes derivatives which are embedded in contracts where the host contract is held at amortized cost but for which the embedded derivative is separated.

in € m. (unless stated otherwise)	Fair value Assets	Fair value Liabilities	Valuation technique(s)[1]	Significant unobservable input(s) (Level 3)	Range Dec 31, 2019	
Financial instruments held at fair value – Non-Derivative financial instruments held at fair value:						
Mortgage and other asset backed securities held for trading:						
Commercial mortgage-backed securities	33	0	Price based	Price	0 %	3623 %
			Discounted cash flow	Credit spread (bps)	102	1,899
Mortgage- and other asset-backed securities	225	0	Price based	Price	0 %	101 %
			Discounted cash flow	Credit spread (bps)	54	2,460
				Recovery rate	25 %	75 %
				Constant default rate	1 %	4 %
				Constant prepayment rate	3 %	24 %
Total mortgage- and other asset-backed securities	**258**	**0**				
Debt securities and other debt obligations	5,084[4]	1,679	Price based	Price	0 %	203 %
Held for trading	3,090	2	Discounted cash flow	Credit spread (bps)	15	460
Corporate, sovereign and other debt securities	3,090					
Non-trading financial assets mandatory at fair value through profit or loss	1,938[4]					
Designated at fair value through profit or loss	0	1,676				
Financial assets at fair value through other comprehensive income	56					
Equity securities	760	0	Market approach	Price per net asset value	0 %	101 %
Held for trading	82	0		Enterprise value/EBITDA (multiple)	5	17
Non-trading financial assets mandatory at fair value through profit or loss	678[4]		Discounted cash flow	Weighted average cost capital	0 %	20 %
Loans	8,302	38	Price based	Price	0 %	341 %
Held for trading	6,110	38	Discounted cash flow	Credit spread (bps)	11	1,209
Non-trading financial assets mandatory at fair value through profit or loss	1,193					
Designated at fair value through profit or loss	6	0		Recovery rate	35 %	90 %
Financial assets at fair value through other comprehensive income	993					
Loan commitments	0	1	Discounted cash flow	Credit spread (bps)	8	979
				Recovery rate	25 %	95 %
			Loan pricing model	Utilization	0 %	84 %
Other financial instruments	1,504[2,4]	278[3]	Discounted cash flow	IRR	7 %	46 %
				Repo rate (bps)	5	271
Total non-derivative financial instruments held at fair value	**15,908**	**1,996**				

[1] Valuation technique(s) and subsequently the significant unobservable input(s) relate to the respective total position.
[2] Other financial assets include € 28 million of other trading assets and € 1.5 billion other financial assets mandatory at fair value.
[3] Other financial liabilities include € 186 million of securities sold under repurchase agreements designated at fair value and € 92 million of other financial liabilities designated at fair value
[4] Reassessment of trades have resulted a restatement in 'Assets in Debt securities and other debt obligations from Equity securities and other financial instruments

						Dec 31, 2019
	Fair value					
in € m. (unless stated otherwise)	Assets	Liabilities	Valuation technique(s)	Significant unobservable input(s) (Level 3)		Range
Financial instruments held at fair value:						
Market values from derivative financial instruments:						
Interest rate derivatives	4,941	3,387	Discounted cash flow	Swap rate (bps)	(69)	668
				Inflation swap rate	0 %	3 %
			Option pricing model	Inflation volatility	0 %	5 %
				Interest rate volatility	0 %	33 %
				IR - IR correlation	(25) %	99 %
				Hybrid correlation	(70) %	100 %
Credit derivatives	618	822	Discounted cash flow	Credit spread (bps)	0	18,812
				Recovery rate	0 %	75 %
			Correlation pricing model	Credit correlation	33 %	84 %
Equity derivatives	834	1,132	Option pricing model	Stock volatility	4 %	93 %
				Index volatility	4 %	69 %
				Index - index correlation	1	1
				Stock - stock correlation	18 %	93 %
FX derivatives	1,320	1,158	Option pricing model	Volatility	(12) %	27 %
				Quoted Vol	0 %	0 %
Other derivatives	810	117[1]	Discounted cash flow	Credit spread (bps)	–	–
			Option pricing model	Index volatility	7 %	67 %
				Commodity correlation	5 %	86 %
Total market values from derivative financial instruments	8,524	6,616				

[1] Includes derivatives which are embedded in contracts where the host contract is held at amortized cost but for which the embedded derivative is separated.

Unrealized gains or losses on Level 3 Instruments held or in issue at the reporting date

The unrealized gains or losses on Level 3 Instruments are not due solely to unobservable parameters. Many of the parameter inputs to the valuation of instruments in this level of the hierarchy are observable and the gain or loss is partly due to movements in these observable parameters over the period. Many of the positions in this level of the hierarchy are economically hedged by instruments which are categorized in other levels of the fair value hierarchy. The offsetting gains and losses that have been recorded on all such hedges are not included in the table below, which only shows the gains and losses related to the Level 3 classified instruments themselves held at the reporting date in accordance with IFRS 13. The unrealized gains and losses on Level 3 instruments are included in both net interest income and net gains on financial assets/liabilities at fair value through profit or loss in the consolidated income statement.

in € m.	Dec 31, 2020	Dec 31, 2019
Financial assets held at fair value:		
Trading securities	38	60
Positive market values from derivative financial instruments	2,589	1,906
Other trading assets	(248)	35
Non-trading financial assets mandatory at fair value through profit or loss	(14)	387
Financial assets designated at fair value through profit or loss	0	2
Financial assets at fair value through other comprehensive income	20	0
Other financial assets at fair value	4	6
Total financial assets held at fair value	**2,389**	2,397
Financial liabilities held at fair value:		
Trading securities	(0)	(2)
Negative market values from derivative financial instruments	(2,536)	(1,660)
Other trading liabilities	0	6
Financial liabilities designated at fair value through profit or loss	53	(259)
Other financial liabilities at fair value	(26)	(308)
Total financial liabilities held at fair value	**(2,510)**	(2,223)
Total	**(121)**	174

Recognition of trade date profit

If there are significant unobservable inputs used in a valuation technique, the financial instrument is recognized at the transaction price and any trade date profit is deferred. The table below presents the year-to-year movement of the trade date profits deferred due to significant unobservable parameters for financial instruments classified at fair value through profit or loss. The balance is predominantly related to derivative instruments.

in € m.	2020	2019
Balance, beginning of year	**441**	531
New trades during the period	308	170
Amortization	(140)	(106)
Matured trades	(130)	(95)
Subsequent move to observability	(22)	(60)
Exchange rate changes	(4)	1
Balance, end of year	**454**	441

Click here to enter text.

14 – Fair value of financial instruments not carried at fair value

Financial instruments not carried at fair value are not managed on a fair value basis. For these instruments fair values are calculated for disclosure purposes only and do not impact the Group balance sheet or income statement. Additionally, since the instruments generally do not trade there is significant management judgment required to determine these fair values.

For the following financial instruments which are predominantly short-term the carrying value represents a reasonable estimate of the fair value:

Assets	Liabilities
Cash and central bank balances	Deposits
Interbank balances (w/o central banks)	Central bank funds purchased and securities sold under repurchase agreements
Central bank funds sold and securities purchased under resale agreements	Securities loaned
Securities borrowed	Other short-term borrowings
Other financial assets	Other financial liabilities

For retail lending portfolios with a large number of homogenous loans (e.g. residential mortgages), the fair value is calculated for each product segment by discounting the portfolio's contractual cash flows using the Group's new loan rates for lending to issuers of similar credit quality. Key inputs for retail mortgages are the difference between historic and current product margins and the estimated prepayment rates. Capitalized broker fees included in the carrying value are considered to also be fair value.

The fair value of corporate lending portfolio is estimated by discounting the loan till its maturity with loan specific credit spreads and funding costs for the Group.

For long-term debt and trust preferred securities, fair value is determined from quoted market prices, where available. Where quoted market prices are not available, fair value is estimated using a valuation technique that discounts the remaining contractual cash flows at a rate at which an instrument with similar characteristics is quoted in the market.

Estimated fair value of financial instruments not carried at fair value on the balance sheet[1]

					Dec 31, 2020
in € m.	Carrying value	Fair value	Quoted prices in active market (Level 1)	Valuation technique observable parameters (Level 2)	Valuation technique unobservable parameters (Level 3)
Financial assets:					
Cash and central bank balances	166,208	166,208	166,208	0	0
Interbank balances (w/o central banks)	9,130	9,132	866	8,266	0
Central bank funds sold and securities purchased under resale agreements	8,533	8,519	0	7,694	825
Securities borrowed	0	0	0	0	0
Loans	426,691	434,442	0	13,253	421,189
Other financial assets	94,069	94,393	7,714	85,173	629
Financial liabilities:					
Deposits	567,745	568,172	66	568,105	0
Central bank funds purchased and securities sold under repurchase agreements	2,325	2,328	0	2,328	0
Securities loaned	1,697	1,697	0	1,697	0
Other short-term borrowings	3,553	3,556	0	3,540	15
Other financial liabilities	96,602	96,602	1,902	94,700	0
Long-term debt	149,163	150,691	0	144,130	6,560
Trust preferred securities	1,321	1,069	0	1,069	0

					Dec 31, 2019
in € m.	Carrying value	Fair value	Quoted prices in active market (Level 1)	Valuation technique observable parameters (Level 2)	Valuation technique unobservable parameters (Level 3)
Financial assets:					
Cash and central bank balances	137,592	137,592	137,592	0	0
Interbank balances (w/o central banks)	9,636	9,636	116	9,520	0
Central bank funds sold and securities purchased under resale agreements	13,801	13,801	0	13,801	0
Securities borrowed	428	428	0	428	0
Loans	429,841	436,997	0	11,376	425,620
Other financial assets	94,157	94,423	15,960	78,463	0
Financial liabilities:					
Deposits	572,208	572,596	120	572,476	0
Central bank funds purchased and securities sold under repurchase agreements	3,115	3,114	0	3,114	0
Securities loaned	259	259	0	259	0
Other short-term borrowings	5,218	5,221	0	5,219	2
Other financial liabilities	87,669	87,669	1,898	85,771	0
Long-term debt	136,473	136,494	0	125,344	11,150
Trust preferred securities	2,013	1,798[2]	0	1,798[2]	0

[1] Amounts generally presented on a gross basis, in line with the Group's accounting policy regarding offsetting of financial instruments as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates".
[2] Prior year information restated due to a refinement in the fair value calculation.

For loans, the difference between fair value and carrying value is due to the effect of product margin movements since initial recognition.

For long-term debt and trust preferred securities, the difference between fair value and carrying value is due to the effect of changes in the rates at which the Group could issue debt with similar maturity and subordination at the balance sheet date compared to when the instrument was issued.

15 – Financial assets at fair value through other comprehensive income

in € m.	Dec 31, 2020	Dec 31, 2019
Securities purchased under resale agreement	1,543	1,415
Debt securities:		
German government	10,245	6,243
U.S. Treasury and U.S. government agencies	9,221	7,703
U.S. local (municipal) governments	251	0
Other foreign governments	26,308	21,020
Corporates	2,272	3,423
Other asset-backed securities	31	36
Mortgage-backed securities, including obligations of U.S. federal agencies	636	457
Other debt securities	692	332
Total debt securities	49,656	39,214
Loans	4,635	4,874
Total financial assets at fair value through other comprehensive income	55,834	45,503

16 – Equity method investments

Investments in associates and jointly controlled entities are accounted for using the equity method of accounting.

The Group holds interests in 60 (2019: 65) associates and 11 (2019: 13) jointly controlled entities. Two associates are considered to be material to the Group.

Significant investments as of December 31, 2020[1]

Investment	Principal place of business	Nature of relationship	Ownership percentage
Huarong Rongde Asset Management Company Limited	Beijing, China	Strategic Investment	40.7 %
Harvest Fund Management Co., Ltd.	Shanghai, China	Strategic Investment	30.0 %

[1] The Group has significant influence over these investees through its holding percentage and representation on the board seats.

Summarized financial information on Huarong Rongde Asset Management Company Limited[1]

in € m.	Dec 31, 2019	Dec 31, 2018
Total net revenues	97	118
Net income	62	74
Other comprehensive income	54	(55)
Total comprehensive income[2]	116	19

in € m.	Dec 31, 2019	Dec 31, 2018
Current assets	2,323	4,160
Non-Current assets	804	1,507
Total assets	3,127	5,667
Current liabilities	1,157	1,820
Non-Current liabilities	1,274	2,712
Total liabilities	2,431	4,532
Noncontrolling Interest	(3)	417
Net assets of the equity method investee	699	718

[1] Due to the difference in reporting timelines for the Group and Huarong Rongde Asset Management Company Limited Equity method accounting was performed for December 2020 based on December 2019 PRC GAAP audited financials and for December 2019 based on December 2018 PRC GAAP audited financials.
[2] The Group received dividends from Huarong Rongde Asset Management Company Limited of € 9 million during the reporting period 2020 (2019: € 7 million).

Reconciliation of total net assets of Huarong Rongde Asset Management Company Limited to the Group's carrying amount[1]

in € m.	Dec 31, 2019	Dec 31, 2018
Net assets of the equity method investee	699	718
Group's ownership percentage on the investee's equity	40.7 %	40.7 %
Group's share of net assets	284	292
Goodwill	0	0
Intangible Assets	0	0
Other adjustments	(9)	(7)
Carrying amount[2]	275	286

[1] Due to the difference in reporting timelines for the Group and Huarong Rongde Asset Management Company Limited Equity method accounting was performed for December 2020 based on December 2019 PRC GAAP audited financials and for December 2019 based on December 2018 PRC GAAP audited financials.
[2] There is no impairment loss in 2019 and 2018.

Summarized financial information on Harvest Fund Management Co., Ltd.

in € m.	Dec 31, 2020[1]	Dec 31, 2019[2]
Total net revenues	823	606
Net income	226	146
Other comprehensive income	(2)	2
Total comprehensive income[3]	**224**	148

in € m.	Dec 31, 2020	Dec 31, 2019
Current assets	1,072	883
Non-Current assets	731	720
Total assets	1,803	1,603
Current liabilities	643	652
Non-Current liabilities	262	165
Total liabilities	905	817
Noncontrolling Interest	23	21
Net assets of the equity method investee	**875**	765

[1] December 2020 numbers are based on 2020 unaudited financials.
[2] December 2019 numbers are based on 2019 audited financials.
[3] The Group received dividends from Harvest Fund Management Co., Ltd. of € 21 million during the reporting period 2020 (2019: € 21 million) and reported an extraordinary dividend receivable of € 6 million since the dividend amount has been declared and reported as dividend payable following approval by shareholders of Harvest Fund Management Co., Ltd.

Reconciliation of total net assets of Harvest Fund Management Co., Ltd.to the Group's carrying amount

in € m.	Dec 31, 2020[1]	Dec 31, 2019[2]
Net assets of the equity method investee	875	765
Group's ownership percentage on the investee's equity	30 %	30 %
Group's share of net assets	262	230
Goodwill	16	17
Intangible Assets	14	14
Other adjustments	(2)	0
Carrying amount[3]	**290**	261

[1] December 2020 numbers are based on 2020 unaudited financials.
[2] December 2019 numbers are based on 2019 audited financials.
[3] There is no impairment loss in 2020 (€ 0 million in 2019).

Aggregated financial information on the Group's share in associates and joint ventures that are individually immaterial

in € m.	Dec 31, 2020	Dec 31, 2019
Carrying amount of all associates that are individually immaterial to the Group	**337**	383
Aggregated amount of the Group's share of profit (loss) from continuing operations	20	39
Aggregated amount of the Group's share of post-tax profit (loss) from discontinued operations	0	0
Aggregated amount of the Group's share of other comprehensive income	(10)	(1)
Aggregated amount of the Group's share of total comprehensive income	**10**	38

17 – Offsetting financial assets and financial liabilities

The Group is eligible to present certain financial assets and financial liabilities on a net basis on the balance sheet pursuant to criteria described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates: Offsetting Financial Instruments".

The following tables provide information on the impact of offsetting on the consolidated balance sheet, as well as the financial impact of netting for instruments subject to an enforceable master netting arrangement or similar agreement as well as available cash and financial instrument collateral.

Assets

							Dec 31, 2020
				Amounts not set off on the balance sheet			
in € m.	Gross amounts of financial assets	Gross amounts set off on the balance sheet	Net amounts of financial assets presented on the balance sheet	Impact of Master Netting Agreements	Cash collateral	Financial instrument collateral[1]	Net amount
Central bank funds sold and securities purchased under resale agreements (enforceable)	8,234	(2,863)	5,371	0	0	(5,319)	53
Central bank funds sold and securities purchased under resale agreements (non-enforceable)	3,161	0	3,161	0	0	(2,855)	307
Securities borrowed (enforceable)	0	0	0	0	0	0	0
Securities borrowed (non-enforceable)	0	0	0	0	0	0	0
Financial assets at fair value through profit or loss (enforceable)	463,397	(84,554)	378,843	(263,518)	(45,066)	(58,410)	11,849
Of which: Positive market values from derivative financial instruments (enforceable)	336,976	(12,557)	324,419	(262,525)	(45,048)	(5,162)	11,684
Financial assets at fair value through profit or loss (non-enforceable)	149,137	0	149,137	0	(1,098)	(12,790)	135,249
Of which: Positive market values from derivative financial instruments (non-enforceable)	19,074	0	19,074	0	(1,003)	(1,116)	16,955
Total financial assets at fair value through profit or loss	612,534	(84,554)	527,980	(263,518)	(46,164)	(71,200)	147,099
Loans at amortized cost	426,691	0	426,691	0	(12,129)	(52,571)	361,991
Other assets	120,531	(10,170)	110,360	(43,277)	(412)	(90)	66,581
Of which: Positive market values from derivatives qualifying for hedge accounting (enforceable)	3,286	(21)	3,265	(2,607)	(411)	(90)	156
Remaining assets subject to netting	1,543	0	1,543	0	0	0	1,543
Remaining assets not subject to netting	249,854	0	249,854	0	(384)	(2,768)	246,703
Total assets	1,422,549	(97,587)	1,324,961	(306,795)	(59,089)	(134,803)	824,275

[1] Excludes real estate and other non-financial instrument collateral.

Liabilities

							Dec 31, 2020
				Amounts not set off on the balance sheet			
in € m.	Gross amounts of financial liabilities	Gross amounts set off on the balance sheet	Net amounts of financial liabilities presented on the balance sheet	Impact of Master Netting Agreements	Cash collateral	Financial instrument collateral	Net amount
Deposits	567,745	0	567,745	0	0	0	567,745
Central bank funds purchased and securities sold under repurchase agreements (enforceable)	4,586	(2,263)	2,323	0	0	(2,323)	0
Central bank funds purchased and securities sold under repurchase agreements (non-enforceable)	3	0	3	0	0	(2)	1
Securities loaned (enforceable)	1,686	0	1,686	0	0	(1,686)	0
Securities loaned (non-enforceable)	11	0	11	0	0	(2)	9
Financial liabilities at fair value through profit or loss (enforceable)	480,029	(86,803)	393,226	(265,150)	(34,846)	(41,642)	51,589
Of which: Negative market values from derivative financial instruments (enforceable)	326,692	(14,715)	311,976	(264,042)	(34,846)	(5,816)	7,273
Financial liabilities at fair value through profit or loss (non-enforceable)	25,972	0	25,972	0	(1,875)	(6,184)	17,914
Of which: Negative market values from derivative financial instruments (non-enforceable)	15,798	0	15,798	0	(1,875)	(166)	13,757
Total financial liabilities at fair value through profit or loss	506,002	(86,803)	419,199	(265,150)	(36,721)	(47,826)	69,502
Other liabilities	122,730	(8,521)	114,208	(49,534)	(121)	(6)	64,547
Of which: Negative market values from derivatives qualifying for hedge accounting (enforceable)	1,315	(36)	1,279	(1,090)	(121)	(6)	62
Remaining liabilities not subject to netting	157,602	0	157,602	0	(2)	(1)	157,599
Total liabilities	1,360,364	(97,587)	1,262,777	(314,684)	(36,844)	(51,845)	859,403

Other assets include € 1.4 billion positive market values for derivative financial instruments which have been reclassified into asset held for sale, associated with the Prime Finance platform being transferred to BNP Paribas, along with the corresponding impact of master netting agreements and collateralization. Due to the same reason, other liabilities include € 1.9 billion negative market values for derivative financial instruments which have been reclassified into liabilities held for sale, along with the corresponding impact of master netting agreements and collateralization. For further information please refer to Note 24 “Non-Current Assets and Disposal Groups Held for Sale” to the consolidated financial statements.

Assets

Dec 31, 2019

in € m.	Gross amounts of financial assets	Gross amounts set off on the balance sheet	Net amounts of financial assets presented on the balance sheet	Amounts not set off on the balance sheet: Impact of Master Netting Agreements	Cash collateral	Financial instrument collateral[1]	Net amount
Central bank funds sold and securities purchased under resale agreements (enforceable)	14,174	(2,985)	11,189	0	0	(11,186)	3
Central bank funds sold and securities purchased under resale agreements (non-enforceable)	2,612	0	2,612	0	0	(2,464)	148
Securities borrowed (enforceable)	424	0	424	0	0	(299)	124
Securities borrowed (non-enforceable)	4	0	4	0	0	(4)	0
Financial assets at fair value through profit or loss (enforceable)	476,371	(96,171)	380,200	(263,180)	(41,115)	(65,075)	10,830
Of which: Positive market values from derivative financial instruments (enforceable)	337,117	(17,479)	319,638	(262,326)	(41,115)	(5,535)	10,661
Financial assets at fair value through profit or loss (non-enforceable)	150,513	0	150,513	0	(1,119)	(12,424)	136,971
Of which: Positive market values from derivative financial instruments (non-enforceable)	13,293	0	13,293	0	(1,062)	(896)	11,335
Total financial assets at fair value through profit or loss	626,884	(96,171)	530,713	(263,180)	(42,234)	(77,498)	147,801
Loans at amortized cost	429,841	0	429,841	0	(11,819)	(55,458)	362,563
Other assets	116,259	(5,900)	110,359	(37,267)	(570)	(138)	72,384
Of which: Positive market values from derivatives qualifying for hedge accounting (enforceable)	3,004	(224)	2,780	(2,149)	(443)	(94)	94
Remaining assets subject to netting	1,415	0	1,415	0	0	(1,361)	54
Remaining assets not subject to netting	211,117	0	211,117	0	(745)	(1,276)	209,096
Total assets	1,402,730	(105,056)	1,297,674	(300,447)	(55,368)	(149,685)	792,174

[1] Excludes real estate and other non-financial instrument collateral.

Liabilities

Dec 31, 2019

in € m.	Gross amounts of financial liabilities	Gross amounts set off on the balance sheet	Net amounts of financial liabilities presented on the balance sheet	Amounts not set off on the balance sheet: Impact of Master Netting Agreements	Cash collateral	Financial instrument collateral	Net amount
Deposits	572,208	0	572,208	0	0	0	572,208
Central bank funds purchased and securities sold under repurchase agreements (enforceable)	5,452	(2,985)	2,467	0	0	(2,467)	0
Central bank funds purchased and securities sold under repurchase agreements (non-enforceable)	648	0	648	0	0	(400)	248
Securities loaned (enforceable)	191	0	191	0	0	(191)	0
Securities loaned (non-enforceable)	68	0	68	0	0	(61)	7
Financial liabilities at fair value through profit or loss (enforceable)	476,677	(96,316)	380,361	(264,392)	(29,755)	(42,121)	44,093
Of which: Negative market values from derivative financial instruments (enforceable)	324,374	(18,125)	306,249	(263,358)	(29,755)	(6,108)	7,028
Financial liabilities at fair value through profit or loss (non-enforceable)	24,087	0	24,087	0	(1,535)	(7,982)	14,570
Of which: Negative market values from derivative financial instruments (non-enforceable)	10,257	0	10,257	0	(1,286)	(401)	8,571
Total financial liabilities at fair value through profit or loss	500,764	(96,316)	404,448	(264,392)	(31,290)	(50,103)	58,663
Other liabilities	113,719	(5,754)	107,964	(45,985)	(418)	(15)	61,546
Of which: Negative market values from derivatives qualifying for hedge accounting (enforceable)	2,539	(1,109)	1,431	(1,118)	(269)	(15)	28
Remaining liabilities not subject to netting	147,521	0	147,521	0	0	(4)	147,517
Total liabilities	1,340,571	(105,056)	1,235,515	(310,376)	(31,708)	(53,240)	840,190

Other assets include € 1.8 billion positive market values for derivative financial instruments which have been reclassified into asset held for sale, associated with the Prime Finance platform being transferred to BNP Paribas, along with the corresponding impact of master netting agreements and collateralization. Due to the same reason, other liabilities include € 2.5 billion negative market values for derivative financial instruments which have been reclassified into liabilities held for sale, along with

the corresponding impact of master netting agreements and collateralization. For further information please refer to Note 24 “Non-Current Assets and Disposal Groups Held for Sale” to the consolidated financial statements.

Effective December 30, 2019, the Group elected to convert its interest rate swaps (IRS) transacted with the Japan Securities Clearing Corporation (JSCC) from the previous collateral model to a settlement model. The IRS are now legally settled on a daily basis resulting in derecognition of the associated assets and liabilities. Previously, the Group applied the principles of IAS 32 offsetting to present net the positive (negative) carrying amounts of the IRS and associated variation margin payables (receivables). As a result, gross amounts of financial assets and financial liabilities and corresponding gross amounts set off on the balance sheet decreased by € 5.0 billion and € 3.9 billion as of December 31, 2019, respectively, with no change to the net amounts of financial assets and financial liabilities presented on the balance sheet.

The column ‘Gross amounts set off on the balance sheet’ discloses the amounts offset in accordance with all the criteria described in Note 1 “Significant Accounting Policies and Critical Accounting Estimates: Offsetting Financial Instruments”.

The column ‘Impact of Master Netting Agreements’ discloses the amounts that are subject to master netting agreements but were not offset because they did not meet the net settlement/simultaneous settlement criteria; or because the rights of set off are conditional upon the default of the counterparty only. The amounts presented for other assets and other liabilities include cash margin receivables and payables respectively.

The columns ‘Cash collateral’ and ‘Financial instrument collateral’ disclose the cash and financial instrument collateral amounts received or pledged in relation to the total amounts of assets and liabilities, including those that were not offset.

Non-enforceable master netting agreements or similar agreements refer to contracts executed in jurisdictions where the rights of set off may not be upheld under the local bankruptcy laws.

The cash collateral received against the positive market values of derivatives and the cash collateral pledged towards the negative mark-to-market values of derivatives are booked within the ‘Other liabilities’ and ‘Other assets’ balances respectively.

The Cash and Financial instrument collateral amounts disclosed reflect their fair values. The rights of set off relating to the cash and financial instrument collateral are conditional upon the default of the counterparty.

18 – Loans

The entire loan book presented includes loans classified at amortized cost, loans at fair value through other comprehensive income and loans at fair value through profit and loss.

The below table gives an overview of our loan exposure by industry, and is based on the NACE code of the counterparty. NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) is a standard European industry classification system.

Loans by industry classification

in € m.	Dec 31, 2020	Dec 31, 2019
Agriculture, forestry and fishing	637	676
Mining and quarrying	3,145	3,027
Manufacturing	28,040	30,199
Electricity, gas, steam and air conditioning supply	3,765	4,577
Water supply, sewerage, waste management and remediation activities	681	843
Construction	4,708	4,110
Wholesale and retail trade, repair of motor vehicles and motorcycles	22,023	22,568
Transport and storage	6,382	5,610
Accommodation and food service activities	2,514	2,633
Information and communication	6,240	6,575
Financial and insurance activities	90,220	98,434
Real estate activities	37,946	45,153
Professional, scientific and technical activities	7,946	7,430
Administrative and support service activities	9,568	7,063
Public administration and defense, compulsory social security	7,413	8,012
Education	205	327
Human health services and social work activities	3,530	3,631
Arts, entertainment and recreation	951	867
Other service activities	6,165	5,766
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	205,028	196,732
Activities of extraterritorial organizations and bodies	1	3
Gross loans	**447,107**	454,235
(Deferred expense)/unearned income	394	340
Loans less (deferred expense)/unearned income	**446,712**	453,895
Less: Allowance for loan losses	4,823	4,018
Total loans	**441,889**	449,876

19 – Allowance for credit losses

The allowance for credit losses consists of an allowance for loan losses and an allowance for off-balance sheet positions.

Development of allowance for credit losses for financial assets at amortized cost

	Dec 31, 2020				
	Allowance for Credit Losses[3]				
in €	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	549	492	3,015	36	4,093
Movements in financial assets including new business	(44)	309	1,348	72[4]	1,686
Transfers due to changes in creditworthiness	77	(125)	49	N/M	0
Changes due to modifications that did not result in derecognition	N/M	N/M	N/M	N/M	N/M
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period[2]	0	0	(781)	0	(781)
Recovery of written off amounts	0	0	58	0	58
Foreign exchange and other changes	(38)	(28)	(75)	31	(110)
Balance, end of reporting period	544	648	3,614	139	4,946
Provision for Credit Losses excluding country risk[1]	33	184	1,397	72	1,686

[1] Movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models add up to Provision for Credit Losses excluding country risk.
[2] This position includes charge offs of allowance for credit losses.
[3] Allowance for credit losses does not include allowance for country risk amounting to € 5 million as of December 31, 2020.
[4] The total amount of undiscounted expected credit losses at initial recognition on financial assets that are purchased or originated credit-impaired initially recognised during the reporting period was € 50 million in 2020 and € 0 million in 2019.

					Dec 31, 2019
					Allowance for Credit Losses[3]
in €	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	509	501	3,247	3	4,259
Movements in financial assets including new business	(57)	102	550	40	636
Transfers due to changes in creditworthiness	120	(106)	(14)	0	0
Changes due to modifications that did not result in derecognition	N/M	N/M	N/M	N/M	N/M
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period[2]	0	0	(872)	(26)	(898)
Recovery of written off amounts	0	0	96	0	96
Foreign exchange and other changes	(22)	(4)	8	18	0
Balance, end of reporting period	549	492	3,015	36	4,093
Provision for Credit Losses excluding country risk[1]	62	(4)	536	40	636

[1] Movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models add up to Provision for Credit Losses excluding country risk.
[2] This position includes charge offs of allowance for credit losses.
[3] Allowance for credit losses does not include allowance for country risk amounting to € 3 million as of December 31, 2019.

					Dec 31, 2018
					Allowance for Credit Losses[3]
in €	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	462	494	3,638	3	4,596
Movements in financial assets including new business	(132)	215	440	(17)	507
Transfers due to changes in creditworthiness	199	(137)	(62)		0
Changes due to modifications that did not result in derecognition	N/M	N/M	N/M	N/M	N/M
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period[2]	(6)	(17)	(972)	0	(995)
Recovery of written off amounts	0	0	172	0	172
Foreign exchange and other changes	(14)	(54)	30	17	(21)
Balance, end of reporting period	509	501	3,247	3	4,259
Provision for Credit Losses excluding country risk[1]	66	78	379	(17)	507

[1] Movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models add up to Provision for Credit Losses excluding country risk.
[2] This position includes charge offs of allowance for credit losses.
[3] Allowance for credit losses does not include allowance for country risk amounting to € 6 million as of December 31, 2018.

Allowance for credit losses for financial assets at fair value through OCI[1]

					Dec 31, 2020
					Allowance for Credit Losses
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Fair Value through OCI	12	6	2	0	20

[1] Allowance for credit losses against financial assets at fair value through OCI remained at very low levels (€ 35 million at December 31, 2019 and € 20 million as of December 31, 2020). Due to immateriality, we do not provide any details on the year-over-year development.

					Dec 31, 2019
					Allowance for Credit Losses
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Fair Value through OCI	16	9	10	0	35

[1] Allowance for credit losses against financial assets at fair value through OCI were almost unchanged at very low levels (€ 13 million at December 31, 2018 and € 35 million as of December 31, 2019). Due to immateriality, we do not provide any details on the year-over-year development.

					Dec 31, 2018
					Allowance for Credit Losses
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Fair Value through OCI	11	1	0	(0)	13

[1] Allowance for credit losses against financial assets at fair value through OCI were almost unchanged at very low levels (€ 12 million at the beginning of year 2018 and € 13 million as of December 31, 2018, respectively). Due to immateriality, we do not provide any details on the year-over-year development.

Development of allowance for credit losses for off-balance sheet positions

	Dec 31, 2020				
	Allowance for Credit Losses[2]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	128	48	166	0	342
Movements including new business	13	21	41	0	75
Transfers due to changes in creditworthiness	0	0	(1)	0	0
Changes in models	0	0	0	0	0
Foreign exchange and other changes	3	4	(6)	0	1
Balance, end of reporting period	144	74	200	0	419
Provision for Credit Losses excluding country risk[1]	13	22	40	0	75

[1] The above table breaks down the impact on provision for credit losses from movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models.
[2] Allowance for credit losses does not include allowance for country risk amounting to € 4 million as of December 31, 2020.

	Dec 31, 2019				
	Allowance for Credit Losses[2]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	132	73	84	0	289
Movements including new business	(13)	(5)	88	0	70
Transfers due to changes in creditworthiness	9	(12)	3	0	0
Changes in models	0	0	0	0	0
Foreign exchange and other changes	(1)	(7)	(9)	0	(17)
Balance, end of reporting period	128	48	166	0	342
Provision for Credit Losses excluding country risk[1]	(4)	(17)	90	0	70

[1] The above table breaks down the impact on provision for credit losses from movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models.
[2] Allowance for credit losses does not include allowance for country risk amounting to € 4 million as of December 31, 2019.

	Dec 31, 2018				
	Allowance for Credit Losses[2]				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	117	36	119	0	272
Movements including new business	(0)	31	(13)	0	18
Transfers due to changes in creditworthiness	2	(0)	(2)	0	0
Changes in models	0	0	0	0	0
Foreign exchange and other changes	14	6	(20)	0	(0)
Balance, end of reporting period	132	73	84	0	289
Provision for Credit Losses excluding country risk[1]	1	31	(15)	0	18

[1] The above table breaks down the impact on provision for credit losses from movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models.
[2] Allowance for credit losses does not include allowance for country risk amounting to € 5 million as of December 31, 2018.

20 – Transfer of financial assets, assets pledged and received as collateral

The Group enters into transactions in which it transfers financial assets held on the balance sheet and as a result may either be eligible to derecognize the transferred asset in its entirety or must continue to recognize the transferred asset to the extent of any continuing involvement, depending on certain criteria. These criteria are discussed in Note 1 “Significant Accounting Policies and Critical Accounting Estimates”.

Where financial assets are not eligible to be derecognized, the transfers are viewed as secured financing transactions, with any consideration received resulting in a corresponding liability. The Group is not entitled to use these financial assets for any other purposes. The most common transactions of this nature entered into by the Group are repurchase agreements, securities lending agreements and total return swaps, in which the Group retains substantially all of the associated credit, equity price, interest rate and foreign exchange risks and rewards associated with the assets as well as the associated income streams.

Information on asset types and associated transactions that did not qualify for derecognition

in € m.	Dec 31, 2020	Dec 31, 2019
Carrying amount of transferred assets		
Trading securities not derecognized due to the following transactions:		
Repurchase agreements	40,654	31,329
Securities lending agreements	8,951	13,001
Total return swaps	1,319	1,615
Other	5,028	2,341
Total trading securities	**55,953**	48,285
Other trading assets	21	90
Non-trading financial assets mandatory at fair value through profit or loss	666	439
Financial assets at fair value through other comprehensive income	5,951	2,537
Loans at amortized cost[1]	210	310
Others	72	236
Total	**62,872**	51,897
Carrying amount of associated liabilities	**53,348**	37,790

[1] Loans where the associated liability is recourse only to the transferred assets had NIL carrying value and fair value as at December 31, 2020 and December 31, 2019. The associated liabilities had the same carrying value and fair value which resulted in a net position of 0.

Carrying value of assets transferred in which the Group still accounts for the asset to the extent of its continuing involvement

in € m.	Dec 31, 2020	Dec 31, 2019
Carrying amount of the original assets transferred		
Trading securities	1,039	1,101
Financial assets designated at fair value through profit or loss	0	0
Non-trading financial assets mandatory at fair value through profit or loss	673	698
Carrying amount of the assets continued to be recognized		
Trading securities	81	109
Financial assets designated at fair value through profit or loss	0	0
Non-trading financial assets mandatory at fair value through profit or loss	17	23
Carrying amount of associated liabilities	**139**	185

The Group could retain some exposure to the future performance of a transferred asset either through new or existing contractual rights and obligations and still be eligible to derecognize the asset. This ongoing involvement will be recognized as a new instrument which may be different from the original financial asset that was transferred. Typical transactions include retaining senior notes of non-consolidated securitizations to which originated loans have been transferred; financing arrangements with structured entities to which the Group has sold a portfolio of assets; or sales of assets with credit-contingent swaps. The Group's exposure to such transactions is not considered to be significant as any substantial retention of risks associated with the transferred asset will commonly result in an initial failure to derecognize. Transactions not considered to result in an ongoing involvement include normal warranties on fraudulent activities that could invalidate a transfer in the event of legal action, qualifying pass-through arrangements and standard trustee or administrative fees that are not linked to performance.

The impact on the Group's Balance Sheet of on-going involvement associated with transferred assets derecognized in full

	Dec 31,2020			Dec 31,2019		
in € m.	Carrying value	Fair value	Maximum Exposure to Loss[1]	Carrying value	Fair value	Maximum Exposure to Loss[1]
Loans at amortized cost						
Securitization notes	254	271	271	325	334	334
Other	7	7	7	10	10	10
Total loans at amortized cost	**261**	**279**	**279**	336	344	344
Financial assets held at fair value through profit or loss						
Securitization notes	28	28	28	36	36	36
Non-standard Interest Rate, cross-currency or inflation-linked swap	0	0	0	0	0	0
Total financial assets held at fair value through profit or loss	**28**	**28**	**28**	36	36	36
Financial assets at fair value through other comprehensive income:						
Securitization notes	624	645	645	457	465	465
Other	0	0	0	0	0	0
Total financial assets at fair value through other comprehensive income	**624**	**645**	**645**	457	465	465
Total financial assets representing on-going involvement	**913**	**951**	**951**	828	845	845
Financial liabilities held at fair value through profit or loss						
Non-standard Interest Rate, cross-currency or inflation-linked swap	11	11	0	11	11	0
Total financial liabilities representing on-going involvement	**11**	**11**	**0**	11	11	0

[1] The maximum exposure to loss is defined as the carrying value plus the notional value of any undrawn loan commitments not recognized as liabilities.

The impact on the Group's Statement of Income of on-going involvement associated with transferred assets derecognized in full

	Dec 31,2020			Dec 31,2019		
in € m.	Year-to-date P&L	Cumulative P&L	Gain/(loss) on disposal	Year-to-date P&L	Cumulative P&L	Gain/(loss) on disposal
Securitization notes	22	49	99	15	27	100
Non-standard Interest Rate, cross-currency or inflation-linked swap	(1)	(1)	0	(0)	(0)	0
Net gains/(losses) recognized from on-going involvement in derecognized assets	**21**	**48**	**99**	15	27	100

The Group pledges assets primarily as collateral against secured funding and for repurchase agreements, securities borrowing agreements as well as other borrowing arrangements and for margining purposes on OTC derivative liabilities. Pledges are generally conducted under terms that are usual and customary for standard securitized borrowing contracts and other transactions described.

Carrying value of the Group's assets pledged as collateral for liabilities or contingent liabilities[1]

in € m.	Dec 31, 2020	Dec 31, 2019
Financial assets at fair value through profit or loss	47,553	36,686
Financial assets at fair value through other comprehensive income	7,858	2,943
Loans	77,433	70,323
Other	1,257	1,617
Total	**134,101**	111,570

[1] Excludes assets pledged as collateral from transactions that do not result in liabilities or contingent liabilities.

Total assets pledged to creditors available for sale or repledge[1]

in € m.	Dec 31, 2020	Dec 31, 2019
Financial assets at fair value through profit or loss	44,210	34,503
Financial assets at fair value through other comprehensive income	4,911	1,303
Loans	2,232	132
Other	72	236
Total	**51,426**	36,174

[1] Includes assets pledged as collateral from transactions that do not result in liabilities or contingent liabilities.

The Group receives collateral primarily in reverse repurchase agreements, securities lending agreements, derivatives transactions, customer margin loans and other transactions. These transactions are generally conducted under terms that are usual and customary for standard secured lending activities and the other transactions described. The Group, as the secured party, has the right to sell or re-pledge such collateral, subject to the Group returning equivalent securities upon completion of the transaction. This right is used primarily to cover short sales, securities loaned and securities sold under repurchase agreements.

Fair Value of collateral received

in € m.	Dec 31, 2020	Dec 31, 2019
Securities and other financial assets accepted as collateral	237,157	251,757
Of which:		
Collateral sold or repledged	199,346	200,378

21 – Property and equipment

in € m.	Owner occupied properties	Furniture and equipment	Leasehold improvements	Construction-in-progress	Property and equipment owned (IAS 16)	Right-of-use for leased assets (IFRS 16)	Total
Cost of acquisition:							
Balance as of January 1, 2019	778	2,602	2,860	142	6,382	3,185	9,567
Changes in the group of consolidated companies	0	(165)	0	(0)	(165)	0	(165)
Additions	8	111	49	160	327	413	740
Transfers	(56)	15	116	(147)	(72)	32	(40)
Reclassifications (to)/from “held for sale”	(0)	(11)	0	(0)	(11)	0	(11)
Disposals	75	190	82	0	347	115	462
Exchange rate changes	1	19	19	1	39	19	58
Balance as of December 31, 2019	656	2,380	2,961	155	6,153	3,533	9,686
Changes in the group of consolidated companies	0	(1)	(0)	(0)	(1)	(1)	(3)
Additions	2	128	47	335	512	1,806	2,317
Transfers	8	173	43	(97)	127	(388)	(261)
Reclassifications (to)/from “held for sale”	(73)	(65)	0	(1)	(139)	(0)	(139)
Disposals	2	223	96	0	321	41	362
Exchange rate changes	(4)	(50)	(58)	(5)	(117)	(64)	(181)
Balance as of December 31, 2020	587	2,343	2,897	387	6,214	4,844	11,058
Accumulated depreciation and impairment:							
Balance as of January 1, 2019	328	1,862	1,770	0	3,960	0	3,960
Changes in the group of consolidated companies	5	(49)	0	0	(44)	1	(43)
Depreciation	18	199	217	0	434	615	1,049
Impairment losses	20	2	5	0	27	85	112
Reversals of impairment losses	0	0	0	0	0	0	0
Transfers	(31)	(4)	(16)	0	(51)	41	(10)
Reclassifications (to)/from “held for sale”	(0)	(4)	0	0	(5)	0	(5)
Disposals	16	180	66	0	262	79	341
Exchange rate changes	0	15	16	0	32	0	32
Balance as of December 31, 2019	325	1,841	1,927	0	4,093	663	4,756
Changes in the group of consolidated companies	0	(1)	(0)	0	(1)	0	(1)
Depreciation	16	171	187	0	373	648	1,021
Impairment losses	5	2	8	0	16	77	93
Reversals of impairment losses	3	0	0	0	3	10	12
Transfers	2	145	2	0	149	5	153
Reclassifications (to)/from “held for sale”	(25)	(53)	0	0	(78)	0	(78)
Disposals	1	206	89	0	296	11	307
Exchange rate changes	(3)	(42)	(45)	0	(90)	(24)	(114)
Balance as of December 31, 2020	317	1,856	1,989	0	4,163	1,347	5,510
Carrying amount:							
Balance as of December 31, 2019	331	540	1,034	155	2,060	2,870	4,930
Balance as of December 31, 2020	270	487	908	387	2,051	3,497	5,549

Depreciation expenses, impairment losses and reversal of impairment losses on property and equipment are recorded within general and administrative expenses for the income statement.

The carrying value of items of property and equipment on which there is a restriction on sale was € 23 million and € 24 million as of December 31, 2020 and December 31, 2019, respectively.

Commitments for the acquisition of property and equipment were € 27 million at year-end 2020 and € 46 million at year-end 2019.

The Group leases many assets including land and buildings, vehicles and IT equipment for which it records right-of-use assets. During 2020, additions to right-of-use assets amounted to € 1.8 billion and largely reflected new real estate leases. Depreciation charges of € 648 million recognized in 2020 mainly resulted from planned consumption of right-of-use assets for property leases over their contractual terms. The carrying amount of right-of-use assets of € 3.5 billion included in Total Property and equipment as of December 31, 2020 predominantly represented leased properties of € 3.5 billion and vehicle leases of € 12 million. For more information on the Group´s leased properties and related disclosures required under IFRS 16, please refer to Note 22 “Leases”.

22 – Leases

The Group’s disclosures are as a lessee under lease arrangements covering property and equipment. The Group has applied judgement in presenting related information pursuant to IFRS 16 in a manner that it considers to be most relevant to an understanding of its financial performance and position.

The Group leases many assets including land and buildings, vehicles and IT equipment. The Group is a lessee for the majority of its offices and branches under long-term rental agreements. Most of the lease contracts are made under usual terms and conditions, which means they include options to extend the lease by a defined amount of time, price adjustment clauses and escalation clauses in line with general office rental market conditions. However, the lease agreements do not include any clauses that impose any restriction on the Group’s ability to pay dividends, engage in debt financing transactions or enter into further lease agreements.

As of December 31, 2020 (December 31, 2019), the Group recorded right-of-use assets on its balance sheet with a carrying amount of € 3.5 billion (€ 2.9 billion), which are included in Property and equipment. The right-of-use assets predominantly represented leased properties of € 3.5 billion (€ 2.8 billion) and vehicle leases of € 12 million (€ 19 million). For more information on the year-to-date development of right-of-use assets, please refer to Note 21 “Property and Equipment”.

Corresponding to the recognition of the right-of-use assets, as of December 31, 2020 (December 31, 2019), the Group recorded lease liabilities on its balance sheet with a carrying amount of € 4.0 billion (€ 3.3 billion), which are included in Other liabilities. As of December 31, 2020, the lease liabilities included the discounted value of future lease payments of € 348 million for the Group headquarters in Frankfurt am Main that was sold and leased back on December 1, 2011. The Group entered into a 181 months leaseback arrangement for the entire facility in connection with the transaction, which also includes the option to extend the lease for an additional 5 year period up to 2031.

During 2020 and 2019, interest expenses recorded from the compounding of the lease liabilities amounted to € 79 million and € 80 million, respectively. The contractual maturities for the undiscounted cash flows from these liabilities are shown in Note 31 “Maturity Analysis of the earliest contractual undiscounted cash flows of Financial Liabilities”.

Expenses recognized in 2020 (2019) relating to short-term leases and leases of low-value assets, for which the Group decided to apply the recognition exemption under IFRS 16 (and thus not to record right-of-use assets and corresponding lease liabilities on the balance sheet), amounted to € 7 million (€ 44 million) and € 2 million (€ 1 million), respectively.

Income recorded in 2020 (2019) from the subletting of right-of-use assets totaled € 24 million (€ 21 million).

The total cash outflow for leases for 2020 (2019) was € 729 million (€ 738 million) and represented mainly expenditures made for real estate rentals over € 708 million (€ 724 million). Of the total cash outflow amount, payments of € 653 million (€ 659 million) were made for the principal portion of lease liabilities, payments of € 77 million (€ 79 million) were made for the interest portion.

Total future cash outflows to which the Group as a lessee is potentially exposed, that are not reflected in the measurement of the lease liabilities, mainly include potential payment exposures arising from extension options (2020: € 4.7 billion) and future payments for leases not yet commenced, but to which the Group is committed (2020: € 1.2 billion). Their expected maturities are shown in the table below.

Future cash outflows to which the Group is potentially exposed that are not reflected in the measurement of lease liabilities

in € m.	Dec 31, 2020	Dec 31, 2019
Future cash outflows not reflected in lease liabilities:		
Not later than one year	50	17
Later than one year and not later than five years	791	816
Later than five years	5,097	4,797
Future cash outflows not reflected in lease liabilities	**5,938**	**5,629**

23 – Goodwill and other intangible assets

Goodwill

Changes in Goodwill

The changes in the carrying amount of goodwill, as well as gross amounts and accumulated impairment losses of goodwill, for the years ended December 31, 2020, and December 31, 2019, are shown below by cash-generating units (“CGU”).

The Group’s business operations are organized under the following divisional structure: the Core Bank, which includes the Corporate Bank (“CB”), Investment Bank (“IB”), Private Bank (“PB”) and Asset Management (“AM”) corporate divisions and the Capital Release Unit (“CRU”). The CB, IB and the AM corporate divisions as well as the CRU each are considered cash-generating units (CGUs). The PB corporate division which was previously comprised of two separate CGUs – Wealth Management (“WM”) and Private Bank excluding Wealth Management (“PB excl. WM”) – has been considered as one single CGU since the fourth quarter 2020.

Please also refer to Note 4 “Business Segments and Related Information” for more information regarding changes in the presentation of segment disclosures.

Goodwill allocated to cash-generating units

in € m.	Investment Bank	Corporate Bank	Asset Management	Private Bank	Others	Total
Balance as of January 1, 2019	0	489	2,843	543	1	**3,876**
Goodwill acquired during the year	0	0	0	0	0	0
Purchase accounting adjustments	0	0	0	0	0	0
Transfers	0	0	0	0	0	0
Reclassification from (to) “held for sale”	0	0	0	0	0	0
Goodwill related to dispositions without being classified as “held for sale”	0	0	0	0	(1)	(1)
Impairment losses[1]	0	(491)	0	(545)	0	(1,035)
Exchange rate changes/other	0	2	38	2	0	42
Balance as of December 31, 2019	0	0	2,881	0	0	**2,881**
Gross amount of goodwill	3,915	603	3,371	3,717	0	**11,607**
Accumulated impairment losses	(3,915)	(603)	(490)	(3,717)	0	**(8,726)**
Balance as of January 1, 2020	0	0	2,881	0	0	**2,881**
Goodwill acquired during the year	0	0	0	0	0	0
Purchase accounting adjustments	0	0	0	0	0	0
Transfers	0	0	0	0	0	0
Reclassification from (to) “held for sale”	0	0	0	0	0	0
Goodwill related to dispositions without being classified as “held for sale”	0	0	0	0	0	0
Impairment losses[1]	0	0	0	0	0	0
Exchange rate changes/other	0	0	(142)	0	0	(142)
Balance as of December 31, 2020	0	0	2,739	0	0	**2,739**
Gross amount of goodwill	3,608	569	3,197	3,698	0	**11,073**
Accumulated impairment losses	(3,608)	(569)	(458)	(3,698)	0	**(8,334)**

[1] Impairment losses of goodwill are recorded as impairment of goodwill and other intangible assets in the income statement.

In addition to the primary CGUs, the IB segment had included goodwill resulting from the acquisition of a nonintegrated investment which is not allocated to the respective CGU. Such goodwill is summarized as “Others” in the table above.

Changes in goodwill in 2020 solely related to foreign exchange rate movements of AM goodwill held in non-Group currencies.

Changes in goodwill in 2019 were mainly driven by the transformational measures relating to the Group's businesses and its reorganization. Triggered by the impact of a lowered outlook on business plans driven both by adjustments to macro-economic factors as well as by the impact of strategic decisions in preparation of the above mentioned transformation announcement, in the second quarter 2019 the Group reviewed the recoverable amounts of its CGUs in the then existing structure. This review resulted in a short-fall of the recoverable amounts against the then existing respective CGUs carrying amounts for WM within the former Private & Commercial Bank ("PCB") corporate division and GTB & CF within the former Corporate & Investment Bank ("CIB") corporate division.

With a recoverable amount of approximately € 1.9 billion for WM, goodwill in former CGU WM (€ 545 million) was impaired and had to be fully written-off, mainly as a result of worsening macro-economic assumptions, including interest rate curves, as well as industry-specific market growth corrections for the WM business globally. For former CGU GTB & CF, the recoverable amount of approximately € 10.2 billion led to the full impairment of allocated goodwill (€ 491 million). This was mainly driven by adverse industry trends in Corporate Finance as well as by adjustments to macro-economic assumptions, including interest rate curves. The total impairment charges of € 1.0 billion were recorded in Impairment of goodwill and other intangible assets of the respective Private Bank (here: WM CGU; € 545 million) and Corporate Bank (€ 491 million) segment results of the second quarter of 2019.

Goodwill Impairment Test

For the purposes of impairment testing, goodwill acquired in a business combination is allocated to CGUs. On the basis as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates", the Group's primary CGUs are as outlined above. "Other" goodwill is tested individually for impairment on the level of each of the nonintegrated investments. Goodwill is tested for impairment annually in the fourth quarter by comparing the recoverable amount of each goodwill-carrying CGU with its carrying amount. In addition, in accordance with IAS 36, the Group tests goodwill whenever a triggering event is identified. The recoverable amount is the higher of a CGU's fair value less costs of disposal and its value in use.

Following the aforementioned write-off of goodwill in the former GTB & CF CGUs in the second quarter 2019 and the de--recognition of ring-fenced goodwill included in the disposal of a nonintegrated subsidiary recorded in the third quarter 2019, the AM CGU was the only goodwill carrying CGU to be tested for annual impairment in both 2019 and 2020. The annual goodwill impairment tests conducted in these periods did not result in an impairment loss on the Group's primary goodwill-carrying CGU as the recoverable amount of the AM CGU was higher than the respective carrying amounts.

A review of the Group's strategy or certain political or global risks for the banking industry, uncertainties regarding the implementation of already adopted regulation and the introduction of legislation that is already under discussion could result in an impairment of goodwill in the future.

Carrying Amount

The carrying amount of a primary CGU is derived using a capital allocation model based on the Shareholders' Equity Allocation Framework of the Group (please refer to Note 4, "Business Segments and Related Information" for more details). The allocation uses the Group's total equity at the date of valuation, including Additional Tier 1 Notes ("AT1 Notes"), which constitute unsecured and subordinated notes of Deutsche Bank and which are classified as Additional equity components in accordance with IFRS. Total equity is adjusted for specific effects related to nonintegrated investments, which are tested separately for impairment as outlined above, and for an add-on adjustment for goodwill attributable to noncontrolling interests.

Recoverable Amount

The Group determines the recoverable amounts of its primary CGUs on the basis of the higher of value in use and fair value less costs of disposal (Level 3 of the fair value hierarchy). It employs a discounted cash flow (DCF) model, which reflects the specifics of the banking business and its regulatory environment. The model calculates the present value of the estimated future earnings that are distributable to shareholders after fulfilling the respective regulatory capital requirements. The recoverable amounts also include the fair value of the AT1 Notes, allocated to the primary CGUs consistent to their treatment in the carrying amount.

The DCF model uses earnings projections and respective capitalization assumptions based on five-year financial plans as well as longer term expectations on the impact of regulatory developments, which are discounted to their present value. Estimating future earnings and capital requirements involves judgment and the consideration of past and current performances as well as expected developments in the respective markets, and in the overall macroeconomic and regulatory environments. Earnings projections beyond the initial five-year period are, where applicable, adjusted to derive a sustainable level. In case of a going concern, the cash flow to equity is assumed to increase by or converge towards a constant long-term growth rate of up to 3.1 % (2019: up to 2.8 %). This is based on projected revenue forecasts of the CGU as well as expectations for the development of gross domestic product and inflation, and is captured in the terminal value.

Key Assumptions and Sensitivities

Key Assumptions: The DCF value of a CGU is sensitive to the earnings projections, to the discount rate (cost of equity) applied and, to a much lesser extent, to the long-term growth rate. The discount rates applied have been determined based on the capital asset pricing model and comprise a risk-free interest rate, a market risk premium and a factor covering the systematic market risk (beta factor). The values for the risk-free interest rate, the market risk premium and the beta factors are determined using external sources of information. CGU-specific beta factors are determined based on a respective group of peer companies. Variations in all of these components might impact the discount rates. For the AM CGU, the discount rates (after tax) applied for 2020 and 2019 were 9.8 % and 9.6 %, respectively.

Management determined the values for the key assumptions in the following table based on a combination of internal and external analysis. Estimates for efficiency and the cost reduction program are based on progress made to date and scheduled future projects and initiatives.

Primary goodwill-carrying cash-generating unit	Description of key assumptions	Uncertainty associated with key assumptions and potential events/circumstances that could have a negative effect
Asset Management	—Deliver strong investment product performance —Expand product suite in growth areas (e.g. alternatives, multi assets, passive, ESG investment schemes) while consolidating non-core strategies —Consistent net flows leveraging market share leadership in Germany and the rest of Europe, while expanding coverage in Asia Pacific and focused growth in the Americas —Diversification of intermediary coverage towards high growth channels and deployment of digital solutions to serve new channels —Further efficiency through improved core operating processes, platform optimization and product rationalization —Anticipation of further headwinds in the asset management industry as a result of the changing regulatory environment	—Challenging market environment and volatility unfavourable to our investment strategies —Unfavourable margin development and adverse competition levels in key markets and products beyond expected levels —Business/execution risks, e.g., underachievement of net flow targets from market uncertainty, loss of high quality client facing employees, unfavourable investment performance, lower than expected efficiency gains —Uncertainty around regulation and its potential implications not yet anticipated

Sensitivities: In order to test the resilience of the recoverable amount, key assumptions used in the DCF model (for example, the discount rate and the earnings projections) are sensitized. Management believes that reasonable possible changes in key assumptions could cause an impairment loss in AM. Currently, in AM the recoverable amount exceeds the carrying amount by 12 % / € 0.7 billion.

Change in certain key assumptions to cause the recoverable amount to equal the carrying amount

Change in Key Assumptions	AM
Discount rate (post tax) increase	
from	9.8 %
to	10.6 %
Change in projected future earnings in each period by	(9.5) %
Long term growth rate	
from	3.1 %
to	1.6 %

Other intangible assets

Changes of other intangible assets by asset classes for the years ended December 31, 2020 and December 31, 2019

	Purchased intangible assets							Internally generated intangible assets	Total other intangible assets
	Unamortized			Amortized				Amortized	
in € m.	Retail investment management agreements	Other	Total unamortized purchased intangible assets	Customer-related intangible assets	Contract-based intangible assets	Software and other	Total amortized purchased intangible assets	Software	
Cost of acquisition/ manufacture:									
Balance as of January 1, 2019	1,010	441	1,451	1,384	70	603	2,057	7,814	11,322
Additions	0	0	0	9	0	34	43	997	1,040
Changes in the group of consolidated companies	0	0	0	0	0	0	0	0	0
Disposals	0	0	0	0	0	40	40	1,295	1,335
Reclassifications from (to) "held for sale"	0	0	0	0	0	0	0	(21)	(22)
Transfers	0	0	0	(1)	0	28	27	(29)	(2)
Exchange rate changes	20	1	21	11	0	0	11	47	79
Balance as of December 31, 2019	1,030	442	1,472	1,403	70	625	2,098	7,512	11,082
Additions	0	0	0	5	0	138	143	911	1,054
Changes in the group of consolidated companies	0	0	0	0	0	0	0	0	0
Disposals	0	0	0	0	0	5	5	390	394
Reclassifications from (to) "held for sale"	0	0	0	0	0	(37)	(37)	(9)	(46)
Transfers	0	0	0	0	0	60	60	21	81
Exchange rate changes	(85)	(1)	(86)	(53)	0	(2)	(55)	(136)	(277)
Balance as of December 31, 2020	945	441	1,386	1,356	70	778	2,204	7,910	11,499
Accumulated amortization and impairment:									
Balance as of January 1, 2019	255	439	694	1,358	70	494	1,922	3,442	6,057
Amortization for the year	0	0	0	13	0	38	51	1,205	1,256[1]
Changes in the group of consolidated companies	0	0	0	0	0	0	0	0	0
Disposals	0	0	0	0	0	40	40	1,291	1,330
Reclassifications from (to) "held for sale"	0	0	0	0	0	0	0	(15)	(15)
Impairment losses	0	0	0	2	0	6	8	931	939[2]
Reversals of impairment losses	0	0	0	0	0	0	0	0	0
Transfers	0	1	1	0	0	29	29	(38)	(8)
Exchange rate changes	5	0	5	11	0	1	12	20	37
Balance as of December 31, 2019	260	440	700	1,384	70	528	1,982	4,254	6,935
Amortization for the year	0	0	0	8	0	37	45	994	1,040[3]
Changes in the group of consolidated companies	0	0	0	0	0	0	0	0	0
Disposals	0	0	0	0	0	3	3	385	388
Reclassifications from (to) "held for sale"	0	0	0	0	0	(33)	(33)	(8)	(41)
Impairment losses	0	0	0	0	0	0	0	50	51[4]
Reversals of impairment losses	0	0	0	0	0	0	0	2	2[5]
Transfers	0	0	0	0	0	106	106	(22)	84
Exchange rate changes	(22)	(1)	(23)	(52)	0	(2)	(54)	(88)	(165)
Balance as of December 31, 2020	239	439	678	1,340	70	633	2,043	4,793	7,513
Carrying amount:									
As of December 31, 2019	770	2	772	20	0	96	116	3,259	4,147
As of December 31, 2020	706	2	708	16	0	145	161	3,117	3,986

[1] € 1.3 billion were included in general and administrative expenses.
[2] € 939 million were comprised of impairments of purchased (€ 6 million) and self-developed software (€ 931 million), both recorded in general and administrative expenses, and € 2 million referring to the impairment of an amortizing customer-related intangible asset which is included under impairment of goodwill and other intangible assets.
[3] € 1.0 billion were included in general and administrative expenses.
[4] € 51 million were mainly comprised of impairments of self-developed software recorded in general and administrative expenses.
[5] € 2 million were comprised of reversal of impairments of self-developed software recorded in general and administrative expenses.

Amortizing Intangible Assets

In 2020, amortizing other intangible assets decreased by € 161 million. This reduction was driven by amortization expenses of € 1.0 billion, mostly for the scheduled consumption of capitalized software (€ 1.0 billion) and the impairment of current platform software as well as software under construction (€ 50 million). More information in regards to the related impact from the transformation strategy is included in Note 42 “Impact of Deutsche Bank’s transformation”. Additions to internally generated intangible assets of € 1.1 billion resulting from the capitalization of expenses incurred in conjunction with the Group’s development of own-used software compensated for the decrease in net book value. A stronger Euro exchange rate against major currencies accounted for negative exchange rate changes of € 112 million.

In 2019, amortizing other intangible assets decreased by a net € 1.1 billion. This was mainly driven by amortization expenses of € 1.3 billion, mostly for the scheduled consumption of capitalized software (€ 1.2 billion) and the impairment of current platform software as well as software under construction (€ 937 million). Offsetting were additions to internally generated intangible assets of € 1.0 billion resulting from the capitalization of expenses incurred in conjunction with the Group’s development of own-used software. Furthermore, the weakening of the Euro against major currencies accounted for positive exchange rate changes of € 26 million.

In 2018, amortizing other intangible assets increased by a net € 171 million. This was in particular driven by additions to internally generated intangible assets of € 1.2 billion resulting from the capitalization of expenses incurred in conjunction with the Group’s development of own-used software. Offsetting were amortization expenses of € 1.1 billion, mostly for the scheduled consumption of capitalized software (€ 1.1 billion). The reassessment of current platform software as well as software under construction led to the impairment of self-developed software (€ 42 million). Furthermore, the weakening of the Euro against major currencies accounted for positive exchange rate changes of € 46 million increasing the net book value of amortizing intangible assets.

Other intangible assets with finite useful lives are generally amortized over their useful lives based on the straight-line method.

Useful lives of other amortized intangible assets by asset class

	Useful lives in years
Internally generated intangible assets:	
Software	up to 10
Purchased intangible assets:	
Customer-related intangible assets	up to 20
Other	up to 80

Unamortized Intangible Assets

Within this asset class, the Group recognizes certain contract-based and marketing-related intangible assets, which are deemed to have an indefinite useful life.

In particular, the asset class comprises the below detailed investment management agreements related to retail mutual funds and certain trademarks. Due to the specific nature of these intangible assets, market prices are ordinarily not observable and, therefore, the Group values such assets based on the income approach, using a post-tax DCF-methodology.

Retail investment management agreements: These assets, amounting to € 706 million, relate to the Group’s U.S. retail mutual fund business and are allocated to the AM CGU. Retail investment management agreements are contracts that give AM the exclusive right to manage a variety of mutual funds for a specified period. Since these contracts are easily renewable, the cost of renewal is minimal, and they have a long history of renewal, these agreements are not expected to have a foreseeable limit on the contract period. Therefore, the rights to manage the associated assets under management are expected to generate cash flows for an indefinite period of time. This intangible asset was recorded at fair value based upon a valuation provided by a third party at the date of acquisition of Zurich Scudder Investments, Inc. in 2002.

The recoverable amount was calculated as fair value less costs of disposal using the multi-period excess earnings method and the fair value measurement was categorized as Level 3 in the fair value hierarchy and is essentially flat compared to the carrying amount. The key assumptions in determining the fair value less costs of disposal include the asset mix, the flows forecast, the effective fee rate and discount rate as well as the terminal value growth rate. The discount rates (cost of equity) applied in the calculation were 10.3 % in 2020 and 9.8 % in 2019. The terminal value growth rate applied for 2020 is 4.1 % (for 2019 4.1 %). The reviews of the valuations for the years 2020 and 2019 neither resulted in any impairment nor a reversal of prior impairments.

24 – Non-current assets and disposal groups held for sale

Within the balance sheet, non-current assets and disposal groups held for sale are included in other assets and other liabilities.

in € m.	Dec 31, 2020	Dec 31, 2019
Financial assets at fair value through profit or loss	6,086	4,951
Property and equipment	11	15
Other assets	0	10
Total assets classified as held for sale	**6,097**	4,976
Financial liabilities at fair value through profit or loss	2,000	2,671
Other liabilities	7,850	6,978
Total liabilities classified as held for sale	**9,850**	9,650

As of December 31, 2020 and December 31, 2019, no unrealized gains (losses) relating to non-current assets classified as held for sale were recognized directly in accumulated other comprehensive income (loss) (net of tax).

Sale of Postbank Systems AG to Tata Consultancy Services

On November 9, 2020, Deutsche Bank and Tata Consultancy Services (TCS) announced that they had reached an agreement concerning the sale of Postbank Systems AG, including its around 1,500 employees, to TCS. Following the fulfillment of all closing conditions achieved in the fourth quarter 2020, including the receipt of required regulatory and governmental approvals, TCS, through its subsidiary Tata Consultancy Services Netherlands B.V., acquired 100 % of the shares of Postbank Systems AG. Accordingly, Postbank Systems AG was deconsolidated at year-end 2020.

The sale represents an important step forward for Deutsche Bank's announced strategic transformation and is consistent with previously-communicated financial plans, resulting in the acceleration of expected transformation charges. Following the announcement and prior to its deconsolidation, Postbank Systems AG was classified as a disposal group held-for-sale. Along with the reclassification of the assets and liabilities in the disposal group to the other assets and other liabilities, the Group recognized a negative pre-tax impact of € (120) million which was recorded in the fourth quarter 2020 within other revenues (€ (104) million) and non-interest expenses (€ (16) million).

Transfer of Global Prime Finance and Electronic Equities platform to BNP Paribas S.A.

As part of the Group's strategic transformation and restructuring plans announced on July 7, 2019, the Management Board of Deutsche Bank had also announced the exit of the Equities Sales & Trading business. In this context, Deutsche Bank had entered into an agreement with BNP Paribas S.A. ("BNP Paribas") to provide continuity of service to its prime finance and electronic equities clients, with a view to transferring technology and staff to BNP Paribas and to continue to operate the platform until clients are migrated to BNP Paribas, with revenues transferred to BNP Paribas and certain costs to be refunded to Deutsche Bank.

On November 14, 2019, BNP Paribas and Deutsche Bank announced that the agreement to refer clients and to transfer technology and key staff from the respective businesses to BNP Paribas had received the necessary approvals and was therefore considered unconditional. The revenue transfer and cost reimbursement arrangement commenced on December 1, 2019. Accordingly, in the fourth quarter 2019, the assets (€ 5.0 billion) and liabilities (€ 9.6 billion) forming the transaction perimeter were classified as assets and liabilities held for sale of the Capital Release Unit (CRU). The assets and liabilities included in the disposal group are predominantly financial instruments which will either be novated to BNP Paribas, or the balances will be closed out between Deutsche Bank and the counterparties and simultaneously the clients would enter into the equivalent transactions with BNP Paribas. The measurement of the financial instruments is not impacted by their held for sale classification.

As of December 31, 2020, the disposal group held-for-sale continues to comprise of assets and liabilities in the aforementioned composition, amounting to € 6.1 billion and € 9.9 billion, respectively. It is expected that the transaction will unwind by end of 2021 with client transactions, IT hardware and software and employees transferred over the period.

Disposals in 2019

Division	Disposal	Financial impact[1]	Date of the disposal
Capital Release Unit	On June 9, 2019 and as planned, Deutsche Bank completed the sale of its Private & Commercial Bank ("PCB") business in Portugal to ABANCA Corporación Bancaria S.A. ("ABANCA"). The unit was previously classified as a disposal group held for sale in the first quarter 2018. Upon closing, the Group transferred assets under management of approximately € 3 billion, deposits of € 1 billion, and loans of € 3 billion as well as approximately 330 FTE to ABANCA.	None.	Second quarter 2019.

[1] Impairment losses and reversals of impairment losses are included in Other income.

25 – Other assets and other liabilities

in € m.	Dec 31, 2020	Dec 31, 2019
Brokerage and securities related receivables		
Cash/margin receivables	58,714	49,147
Receivables from prime brokerage	41	15
Pending securities transactions past settlement date	2,752	1,687
Receivables from unsettled regular way trades	13,057	12,552
Total brokerage and securities related receivables	74,564	63,401
Debt Securities held to collect	12,587	24,292
Accrued interest receivable	1,656	2,614
Assets held for sale	6,097	4,976
Other	15,456	15,075
Total other assets	**110,360**	110,358

in € m.	Dec 31, 2020	Dec 31, 2019
Brokerage and securities related payables		
Cash/margin payables	66,259	59,291
Payables from prime brokerage	271	6
Pending securities transactions past settlement date	1,612	1,588
Payables from unsettled regular way trades	11,668	10,402
Total brokerage and securities related payables	79,810	71,287
Accrued interest payable	1,740	2,420
Liabilities held for sale	9,850	9,650
Lease liabilities	3,974	3,281
Other	18,834	21,327
Total other liabilities	**114,208**	107,964

For further details on the assets and liabilities held for sale, please refer to Note 24 "Non-Current Assets and Disposal Groups Held for Sale".

26 – Deposits

in € m.	Dec 31, 2020	Dec 31, 2019
Noninterest-bearing demand deposits	220,501	228,731
Interest-bearing deposits		
Demand deposits	154,704	135,276
Time deposits	106,551	121,120
Savings deposits	85,989	87,081
Total interest-bearing deposits	347,244	343,477
Total deposits	**567,745**	572,208

Click here to enter text.

27 – Provisions

Movements by Class of Provisions

in € m.	Operational Risk	Civil Litigation	Regulatory Enforcement	Re-structuring	Other	Total[1]
Balance as of January 1, 2019	215	684	499	585	433	2,416
Changes in the group of consolidated companies	(0)	0	0	(0)	(2)	(2)
New provisions	43	533	74	603	593	1,846
Amounts used	22	591	34	395	546	1,590
Unused amounts reversed	116	128	3	125	87	459
Effects from exchange rate fluctuations/Unwind of discount	(0)	8	9	(10)	2	8
Transfers	(0)	39	(1)	27	(9)	56
Balance as of December 31, 2019	119	544	543	684	384	2,276
Changes in the group of consolidated companies	(0)	0	(0)	(0)	(3)	(4)
New provisions	20	107	183	553	505	1,368
Amounts used	11	182	165	641	401	1,400
Unused amounts reversed	39	106	27	105	84	361
Effects from exchange rate fluctuations/Unwind of discount	0	(9)	(41)	4	(15)	(60)
Transfers	(0)	0	(1)	181	8	189
Balance as of December 31, 2020	89	355	492	676	396	2,007

[1] For the remaining portion of provisions as disclosed on the consolidated balance sheet, please see Note 19 “Allowance for Credit Losses”, in which allowances for credit related off-balance sheet positions are disclosed.

Classes of provisions

Operational Risk provisions arise out of operational risk and exclude civil litigation and regulatory enforcement provisions, which are presented as separate classes of provisions. Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events. The definition used for the purposes of determining operational provisions differs from the risk management definition, as it excludes risk of loss resulting from civil litigation and regulatory enforcement matters. For risk management purposes, operational risk includes legal risk, as payments to customers, counterparties and regulatory bodies in civil litigations or regulatory enforcement matters constitute loss events for operational shortcomings, but excludes business and reputational risk.

Civil Litigation provisions arise out of current or potential claims or proceedings alleging non-compliance with contractual or other legal or regulatory responsibilities, which have resulted or may result in demands from customers, counterparties or other parties in civil litigations.

Regulatory Enforcement provisions arise out of current or potential claims or proceedings alleging non-compliance with legal or regulatory responsibilities, which have resulted or may result in an assessment of fines or penalties by governmental regulatory agencies, self-regulatory organizations or other enforcement authorities.

Restructuring provisions arise out of restructuring activities. The Group aims to enhance its long-term competitiveness through major reductions in costs, duplication and complexity in the years ahead. For details see Note 10 “Restructuring”.

Other provisions include several specific items arising from a variety of different circumstances, including the provision for the reimbursement of loan processing fees, deferred sales commissions, provisions for bank levies and mortgage repurchase demands.

Provisions and contingent liabilities

The Group recognizes a provision for potential loss only when there is a present obligation arising from a past event that is probable to result in an economic outflow that can be reliably estimated. Where a reliable estimate cannot be made for such an obligation, no provision is recognized and the obligation is deemed a contingent liability. Contingent liabilities also include possible obligations for which the possibility of future economic outflow is more than remote but less than probable. Where a provision has been taken for a particular claim, no contingent liability is recorded; for matters or sets of matters consisting of more than one claim, however, provisions may be recorded for some claims, and contingent liabilities (or neither a provision nor a contingent liability) may be recorded for others.

The Group operates in a legal and regulatory environment that exposes it to significant litigation risks. As a result, the Group is involved in litigation, arbitration and regulatory proceedings and investigations in Germany and in a number of jurisdictions outside Germany, including the United States. In recent years, regulation and supervision in a number of areas have increased, and regulators, governmental bodies and others have sought to subject financial services providers to increasing oversight and scrutiny, which in turn has led to additional regulatory investigations and enforcement actions which are often followed by civil litigation.

In determining for which of the claims the possibility of a loss is probable, or less than probable but more than remote, and then estimating the possible loss for those claims, the Group takes into consideration a number of factors, including but not limited to the nature of the claim and its underlying facts, the procedural posture and litigation history of each case, rulings by the courts or tribunals, the Group's experience and the experience of others in similar cases (to the extent this is known to the Group), prior settlement discussions, settlements by others in similar cases (to the extent this is known to the Group), available indemnities and the opinions and views of legal counsel and other experts.

The provisions the Group has recognized for civil litigation and regulatory enforcement matters as of December 31, 2020 and December 31, 2019 are set forth in the table above. For some matters for which the Group believes an outflow of funds is probable, no provisions were recognized as the Group could not reliably estimate the amount of the potential outflow.

For the matters for which a reliable estimate can be made, the Group currently estimates that, as of December 31, 2020, the aggregate future loss of which the possibility is more than remote but less than probable is approximately € 2.1 billion for civil litigation matters (December 31, 2019: € 1.8 billion) and € 0.2 billion for regulatory enforcement matters (December 31, 2019: € 0.2 billion). These figures include matters where the Group's potential liability is joint and several and where the Group expects any such liability to be paid by a third party. For other significant civil litigation and regulatory enforcement matters, the Group believes the possibility of an outflow of funds is more than remote but less than probable but the amount is not reliably estimable, and accordingly such matters are not included in the contingent liability estimates. For still other significant civil litigation and regulatory enforcement matters, the Group believes the possibility of an outflow of funds is remote and therefore has neither recognized a provision nor included them in the contingent liability estimates.

This estimated possible loss, as well as any provisions taken, is based upon currently available information and is subject to significant judgment and a variety of assumptions, variables and known and unknown uncertainties. These uncertainties may include inaccuracies in or incompleteness of the information available to the Group, particularly at the preliminary stages of matters, and assumptions by the Group as to future rulings of courts or other tribunals or the likely actions or positions taken by regulators or adversaries may prove incorrect. Moreover, estimates of possible loss for these matters are often not amenable to the use of statistical or other quantitative analytical tools frequently used in making judgments and estimates, and are subject to even greater degrees of uncertainty than in many other areas where the Group must exercise judgment and make estimates. The estimated possible loss, as well as any provisions taken, can be and often are substantially less than the amount initially requested by regulators or adversaries or the maximum potential loss that could be incurred were the matters to result in a final adjudication adverse to the Group. Moreover, in several regions in which the Group operates, an adversary often is not required to set forth the amount it is seeking, and where it is, the amount may not be subject to the same requirements that generally apply to pleading factual allegations or legal claims.

The matters for which the Group determines that the possibility of a future loss is more than remote will change from time to time, as will the matters as to which a reliable estimate can be made and the estimated possible loss for such matters. Actual results may prove to be significantly higher or lower than the estimate of possible loss in those matters where such an estimate was made. In addition, loss may be incurred in matters with respect to which the Group believed the likelihood of loss was remote. In particular, the estimated aggregate possible loss does not represent the Group's potential maximum loss exposure for those matters.

The Group may settle litigation or regulatory proceedings or investigations prior to a final judgment or determination of liability. It may do so to avoid the cost, management efforts or negative business, regulatory or reputational consequences of continuing to contest liability, even when the Group believes it has valid defenses to liability. It may also do so when the potential consequences of failing to prevail would be disproportionate to the costs of settlement. Furthermore, the Group may, for similar reasons, reimburse counterparties for their losses even in situations where it does not believe that it is legally compelled to do so.

Current Individual Proceedings

Set forth below are descriptions of civil litigation and regulatory enforcement matters or groups of matters for which the Group has taken material provisions, or for which there are material contingent liabilities that are more than remote, or for which there is the possibility of material business or reputational risk; similar matters are grouped together and some matters consist of a number of proceedings or claims. The disclosed matters include matters for which the possibility of a loss is more than remote but for which the Group cannot reliably estimate the possible loss. Sets of matters are presented in English-language alphabetical order based on the titles the Group has used for them.

Cum-ex Investigations and Litigations. Deutsche Bank has received inquiries from law enforcement authorities, including requests for information and documents, in relation to cum-ex transactions of clients. "Cum-ex" refers to trading activities in German shares around dividend record dates (trade date before and settlement date after dividend record date) for the purpose of obtaining German tax credits or refunds in relation to withholding tax levied on dividend payments including, in particular, transaction structures that have resulted in more than one market participant claiming such credit or refund with respect to the same dividend payment. Deutsche Bank is cooperating with the law enforcement authorities in these matters.

The Public Prosecutor in Cologne (*Staatsanwaltschaft Köln*, "CPP") has been conducting a criminal investigation since August 2017 concerning two former employees of Deutsche Bank in relation to cum-ex transactions of certain former clients of the Bank. Deutsche Bank is a potential secondary participant pursuant to Section 30 of the German Law on Administrative Offences in this proceeding. This proceeding could result in a disgorgement of profits and fines. Deutsche Bank is cooperating with the CPP. At the end of May and beginning of June 2019, the CPP initiated criminal investigations against further current and former employees of Deutsche Bank and five former Management Board members. In July 2020, in the course of inspecting the CPP's investigation file, Deutsche Bank learned that the CPP had further extended its investigation in June 2019 to include further current and former DB personnel, including one former Management Board member and one current Management Board member. Very limited information on the individuals was recorded in the file. The investigation is still at an early stage and the scope of the investigation may be further broadened.

Deutsche Bank acted as participant in and filed withholding tax refund claims through the electronic refund procedure (*elektronisches Datenträgerverfahren*) on behalf of, inter alia, two former custody clients in connection with their cum-ex transactions. In February 2018, Deutsche Bank received from the German Federal Tax Office (*Bundeszentralamt für Steuern*, "FTO") a demand of approximately € 49 million for tax refunds paid to a former custody client. Deutsche Bank expects to receive a formal notice for the same amount. On December 20, 2019, Deutsche Bank received a liability notice from the FTO requesting payment of € 2.1 million by January 20, 2020 in connection with tax refund claims Deutsche Bank had submitted on behalf of another former custody client. On January 20, 2020, Deutsche Bank made the requested payment and filed an objection against the liability notice. Deutsche Bank filed the reasoning for the objection on June 19, 2020. On December 3, 2020, Deutsche Bank received another hearing letter from the FTO in relation to the € 2.1 million liability notice.

By letter dated February 26, 2018, The Bank of New York Mellon SA/NV ("BNY") informed Deutsche Bank of its intention to seek indemnification for potential cum-ex related tax liabilities incurred by BHF Asset Servicing GmbH ("BAS") and/or Frankfurter Service Kapitalanlage-GmbH ("Service KAG", now named BNY Mellon Service Kapitalanlage-Gesellschaft mbH). Deutsche Bank had acquired BAS and Service KAG as part of the acquisition of Sal. Oppenheim in 2010 and sold them to BNY in the same year. BNY estimates the potential tax liability to amount to up to € 120 million (excluding interest of 6 per cent p.a.). In November and December 2020 counsel to BNY informed Deutsche Bank that BNY and / or Service KAG (among others) have received notices from tax authorities in the estimated amount with respect to cum-ex related trades by certain investment funds in 2009 and 2010. BNY has filed objections against the notices.

On February 6, 2019, the Regional Court (*Landgericht*) Frankfurt am Main served Deutsche Bank with a claim by M.M.Warburg & CO Gruppe GmbH and M.M.Warburg & CO (AG & Co.) KGaA (together "Warburg") in connection with cum-ex transactions of Warburg with a custody client of Deutsche Bank during 2007 to 2011. Warburg claims from Deutsche Bank indemnification against German taxes in relation to transactions conducted in the years 2007 to 2011. Further, Warburg claims compensation of unspecified damages relating to these transactions. Based on the tax assessment notices received for 2007 to 2011, Warburg is claiming a total of € 250 million (of which € 166 million is in relation to taxes and € 84 million is in relation to interest). On March 20, 2020, Warburg extended its claim against Deutsche Bank to indemnify Warburg in relation to the € 176 million (of which € 166 million is in relation to taxes and € 10 million is in relation to interest) confiscation order issued by the Regional Court Bonn in the criminal cum-ex trial on March 18, 2020 regarding the same transactions. On September 23, 2020 the Frankfurt Regional Court fully dismissed Warburg's claim against Deutsche Bank on the grounds that Warburg as the tax debtor (*Steuerschuldner*) is primarily liable and cannot request payment from Deutsche Bank. The court further held that any claims are time-barred. On October 29, 2020, Warburg appealed the decision with the Higher Regional Court (*Oberlandesgericht*) Frankfurt am Main. Deutsche Bank has until April 12, 2021 to respond to Warburg's appellate brief.

On January 25, 2021, the Regional Court (*Landgericht*) Hamburg served Deutsche Bank with a claim by Warburg Invest Kapitalanlagegesellschaft mbH ("Warburg Invest") in relation to transactions of two investment funds in 2009 and 2010, respectively. Warburg Invest was fund manager for both funds. Warburg Invest claims, from Deutsche Bank together with

several other parties as joint and several debtors (*Gesamtschuldner*), indemnification against German taxes in relation to cum-ex transactions conducted by the two funds. Further, Warburg Invest claims compensation of unspecified damages relating to these transactions. In November 2020, Warburg Invest received a tax liability notice from tax authorities for one of the funds in the amount of € 61 million. Based on publicly available information Deutsche Bank estimates the tax amount for the second fund to be approximately € 49 million. Warburg Invest filed its claim against several parties including Deutsche Bank *inter alia* based on an allegation of intentional damage contrary to public policy (Section 826 German Civil Code) and the accusation that Deutsche Bank participated in a business model that was contrary to public policy (*sittenwidriges Geschäftsmodell*).

The Group has not disclosed whether it has established a provision or contingent liability with respect to these matters because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

Danske Bank Estonia Investigations. Deutsche Bank has received requests for information from regulatory and law enforcement agencies concerning the Bank's former correspondent banking relationship with Danske Bank, including the Bank's historical processing of correspondent banking transactions on behalf of customers of Danske Bank's Estonia branch prior to cessation of the correspondent banking relationship with that branch in 2015. Deutsche Bank is providing information to and otherwise cooperating with the investigating agencies. The Bank has also completed an internal investigation into these matters, including of whether any violations of law, regulation or Bank policy occurred and the effectiveness of the related internal control environment. Additionally, on September 24 and 25, 2019, based on a search warrant issued by the Local Court (Amtsgericht) in Frankfurt, the Frankfurt public prosecutor's office conducted investigations into Deutsche Bank. The investigations were in connection with suspicious activity reports relating to potential money laundering at Danske Bank. On October 13, 2020, the FPP closed its criminal investigation because the FPP did not find sufficient evidence to substantiate the money laundering suspicion. However, the Bank agreed to pay an administrative fine of € 13.5 million to the FPP for failing to submit SARs in Germany in a timely fashion, which Deutsche Bank paid in the fourth quarter of 2020.

On July 7, 2020, the New York State Department of Financial Services (DFS) issued a Consent Order, finding that Deutsche Bank violated New York State banking laws in connection with its relationships with three former Deutsche Bank clients, Danske Bank's Estonia branch, Jeffrey Epstein and FBME Bank, and imposing a U.S.$ 150 million civil penalty in connection with these three former relationships, which Deutsche Bank paid in the third quarter of 2020.

The remaining investigations relating to Danske Bank's Estonia branch are ongoing.

On July 15, 2020, Deutsche Bank was named as a defendant in a securities class action filed in the U.S. District Court for the District of New Jersey, alleging that the Bank made material misrepresentations regarding the effectiveness of its anti-money laundering (AML) controls and related remediation. The complaint cites allegations regarding control deficiencies raised in the DFS Consent Order related to the Bank's relationships with Danske Bank's Estonia branch, Jeffrey Epstein and FBME Bank. On September 30, 2020, the plaintiff filed an amended complaint that included additional allegations regarding the effectiveness of the Bank's AML controls. On December 28, 2020, the court appointed lead plaintiff and lead counsel. Lead plaintiff is anticipated to file a second amended complaint by March 1, 2021. The Bank's motion to dismiss is due by April 15, 2021, with briefing on the motion to conclude by July 1, 2021.

The Group has not established a provision or contingent liability with respect to the remaining Danske Bank Estonia investigations and civil action.

FX Investigations and Litigations. Deutsche Bank has received requests for information from certain regulatory and law enforcement agencies globally who investigated trading in, and various other aspects of, the foreign exchange market. Deutsche Bank cooperated with these investigations. Relatedly, Deutsche Bank has conducted its own internal global review of foreign exchange trading and other aspects of its foreign exchange business.

On October 19, 2016, the U.S. Commodity Futures Trading Commission (CFTC), Division of Enforcement, issued a letter ("CFTC Letter") notifying Deutsche Bank that the CFTC Division of Enforcement "is not taking any further action at this time and has closed the investigation of Deutsche Bank" regarding foreign exchange. As is customary, the CFTC Letter states that the CFTC Division of Enforcement "maintains the discretion to decide to reopen the investigation at any time in the future." The CFTC Letter has no binding impact on other regulatory and law enforcement agency investigations regarding Deutsche Bank's foreign exchange trading and practices.

On December 7, 2016, it was announced that Deutsche Bank reached an agreement with CADE, the Brazilian antitrust enforcement agency, to settle an investigation into conduct by a former Brazil-based Deutsche Bank trader. As part of that settlement, Deutsche Bank paid a fine of BRL 51 million and agreed to continue to comply with the CADE's administrative process until it is concluded. This resolves CADE's administrative process as it relates to Deutsche Bank, subject to Deutsche Bank's continued compliance with the settlement terms.

On February 13, 2017, the U.S. Department of Justice (DOJ), Criminal Division, Fraud Section, issued a letter ("DOJ Letter") notifying Deutsche Bank that the DOJ has closed its criminal inquiry "concerning possible violations of federal criminal law in

connection with the foreign exchange markets." As is customary, the DOJ Letter states that the DOJ may reopen its inquiry if it obtains additional information or evidence regarding the inquiry. The DOJ Letter has no binding impact on other regulatory and law enforcement agency investigations regarding Deutsche Bank's foreign exchange trading and practices.

On April 20, 2017, it was announced that Deutsche Bank AG, DB USA Corporation and Deutsche Bank AG New York Branch reached an agreement with the Board of Governors of the Federal Reserve System to settle an investigation into Deutsche Bank's foreign exchange trading and practices. Under the terms of the settlement, Deutsche Bank entered into a cease-and-desist order, and agreed to pay a civil monetary penalty of U.S.$ 137 million. In addition, the Federal Reserve ordered Deutsche Bank to "continue to implement additional improvements in its oversight, internal controls, compliance, risk management and audit programs" for its foreign exchange business and other similar products, and to periodically report to the Federal Reserve on its progress.

On June 20, 2018, it was announced that Deutsche Bank AG and Deutsche Bank AG New York Branch reached an agreement with the New York State Department of Financial Services (DFS) to settle an investigation into Deutsche Bank's foreign exchange trading and sales practices. Under the terms of the settlement, Deutsche Bank entered into a consent order, and agreed to pay a civil monetary penalty of U.S.$ 205 million. In addition, the DFS ordered Deutsche Bank to continue to implement improvements in its oversight, internal controls, compliance, risk management and audit programs for its foreign exchange business, and to periodically report to the DFS on its progress.

Investigations conducted by certain other regulatory agencies are ongoing, and Deutsche Bank has cooperated with these investigations.

On February 25, 2020, plaintiffs in the "Indirect Purchasers" action pending in the U.S. District Court for the Southern District of New York (*Contant, et al.* v. *Bank of America Corp., et al.*) informed the court of a global settlement with all eleven defendants remaining in that action, including Deutsche Bank, collectively for U.S.$ 10 million. Each individual defendant's contribution, including Deutsche Bank's, remains confidential. The court approved the settlement and dismissed with prejudice all claims alleged against Deutsche Bank in that action on November 19, 2020. Filed on November 7, 2018, *Allianz, et al. v. Bank of America Corporation, et al.*, was brought on an individual basis by a group of asset managers who opted out of the settlement in a consolidated action (*In re Foreign Exchange Benchmark Rates Antitrust Litigation*). Defendants' motion to dismiss was granted and denied in part on May 28, 2020. Plaintiffs filed a third amended complaint on July 28, 2020. Discovery is ongoing.

Deutsche Bank also has been named as a defendant in two Canadian class proceedings brought in the provinces of Ontario and Quebec. Filed on September 10, 2015, these class actions assert factual allegations similar to those made in the consolidated action in the United States and seek damages pursuant to the Canadian Competition Act as well as other causes of action. Plaintiffs' motion for class certification in the Ontario action was granted on April 14, 2020. Discovery is ongoing.

Deutsche Bank has also been named as a defendant in an amended and consolidated class action filed in Israel. This action asserts factual allegations similar to those made in the consolidated action in the United States and seeks damages pursuant to Israeli antitrust law as well as other causes of action. This action is in preliminary stages.

On November 10, 2020, Deutsche Bank was named in an action issued (but not served upon Deutsche Bank) in the UK High Court of Justice (Commercial Court) brought by The ECU Group PLC. The claim has not been particularized and is in preliminary stage.

On November 11, 2020, Deutsche Bank was named in an action issued in the UK High Court of Justice (Commercial Court) brought by many of the same plaintiffs who brought *Allianz, et al. v. Bank of America Corporation, et al.* referred to above. The claim has not been particularized, but it is believed to be based upon factual allegations similar to those made in *Allianz, et al. v. Bank of America Corporation, et al.* This action is in preliminary stages.

The Group has not disclosed whether it has established a provision or contingent liability with respect to these matters because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

Interbank and Dealer Offered Rates Matters. *Regulatory and Law Enforcement Matters.* Deutsche Bank has responded to requests for information from, and cooperated with, various regulatory and law enforcement agencies, in connection with industry-wide investigations concerning the setting of the London Interbank Offered Rate (LIBOR), Euro Interbank Offered Rate (EURIBOR), Tokyo Interbank Offered Rate (TIBOR) and other interbank and/or dealer offered rates.

As previously reported, Deutsche Bank paid € 725 million to the European Commission pursuant to a settlement agreement dated December 4, 2013 in relation to anticompetitive conduct in the trading of interest rate derivatives.

Also as previously reported, on April 23, 2015, Deutsche Bank entered into separate settlements with the DOJ, the CFTC, the UK Financial Conduct Authority (FCA), and the New York State Department of Financial Services (DFS) to resolve

investigations into misconduct concerning the setting of LIBOR, EURIBOR, and TIBOR. Under the terms of these agreements, Deutsche Bank paid penalties of U.S.$ 2.175 billion to the DOJ, CFTC and DFS and GBP 226.8 million to the FCA. As part of the resolution with the DOJ, DB Group Services (UK) Limited (an indirectly-held, wholly-owned subsidiary of Deutsche Bank) pled guilty to one count of wire fraud in the U.S. District Court for the District of Connecticut and Deutsche Bank entered into a Deferred Prosecution Agreement with a three year term pursuant to which it agreed (among other things) to the filing of an Information in the U.S. District Court for the District of Connecticut charging Deutsche Bank with one count of wire fraud and one count of price fixing in violation of the Sherman Act. On April 23, 2018, the Deferred Prosecution Agreement expired, and the U.S. District Court for the District of Connecticut subsequently dismissed the criminal Information against Deutsche Bank.

Also, as previously reported, on March 20, 2017, Deutsche Bank paid CHF 5.4 million to the Swiss Competition Commission (WEKO) pursuant to a settlement agreement in relation to Yen LIBOR.

On October 25, 2017, Deutsche Bank entered into a settlement with a working group of U.S. state attorneys general resolving their interbank offered rate investigation. Among other conditions, Deutsche Bank made a settlement payment of U.S.$ 220 million.

Other investigations of Deutsche Bank concerning the setting of various interbank and/or dealer offered rates remain ongoing.

The Group has not disclosed whether it has established a provision or contingent liability with respect to the remaining investigations because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

Overview of Civil Litigations. Deutsche Bank is party to 37 U.S. civil actions concerning alleged manipulation relating to the setting of various interbank and/or dealer offered rates which are described in the following paragraphs, as well as actions pending in each of the UK, Israel, Argentina and Spain. Most of the civil actions, including putative class actions, are pending in the U.S. District Court for the Southern District of New York (SDNY), against Deutsche Bank and numerous other defendants. All but three of the U.S. civil actions were filed on behalf of parties who allege losses as a result of manipulation relating to the setting of U.S. dollar LIBOR. The three U.S. civil actions pending against Deutsche Bank that do not relate to U.S. dollar LIBOR were also filed in the SDNY, and include one consolidated action concerning Pound Sterling (GBP) LIBOR, one action concerning Swiss franc (CHF) LIBOR, and one action concerning two Singapore Dollar (SGD) benchmark rates, the Singapore Interbank Offered Rate (SIBOR) and the Swap Offer Rate (SOR).

Claims for damages for all 37 of the U.S. civil actions discussed have been asserted under various legal theories, including violations of the U.S. Commodity Exchange Act, federal and state antitrust laws, the U.S. Racketeer Influenced and Corrupt Organizations Act, and other federal and state laws. The Group has not disclosed whether it has established a provision or contingent liability with respect to these matters because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

U.S. dollar LIBOR. With two exceptions, all of the U.S. civil actions concerning U.S. dollar LIBOR are being coordinated as part of a multidistrict litigation (the “U.S. dollar LIBOR MDL”) in the SDNY. In light of the large number of individual cases pending against Deutsche Bank and their similarity, the civil actions included in the U.S. dollar LIBOR MDL are now subsumed under the following general description of the litigation pertaining to all such actions, without disclosure of individual actions except when the circumstances or the resolution of an individual case is material to Deutsche Bank.

Following a series of decisions in the U.S. dollar LIBOR MDL between March 2013 and March 2019 narrowing their claims, plaintiffs are currently asserting antitrust claims, claims under the U.S. Commodity Exchange Act and U.S. Securities Exchange Act and state law fraud, contract, unjust enrichment and other tort claims. The court has also issued decisions dismissing certain plaintiffs’ claims for lack of personal jurisdiction and on statute of limitations grounds.

On December 20, 2016, the district court issued a ruling dismissing certain antitrust claims while allowing others to proceed. Multiple plaintiffs have filed appeals of the district court’s December 20, 2016 ruling to the U.S. Court of Appeals for the Second Circuit, and those appeals are proceeding in parallel with the ongoing proceedings in the district court. Briefing of the appeals is complete, and oral argument was heard on May 24, 2019.

On July 13, 2017, Deutsche Bank executed a settlement agreement in the amount of U.S.$ 80 million with plaintiffs to resolve a putative class action pending as part of the U.S. dollar LIBOR MDL asserting claims based on alleged transactions in Eurodollar futures and options traded on the Chicago Mercantile Exchange (*Metzler Investment GmbH* v. *Credit Suisse Group AG*). The court granted the settlement final approval on September 17, 2020, and dismissed all claims against Deutsche Bank. Accordingly, the action is not included in the total number of actions above. The settlement amount, which Deutsche Bank has paid, is no longer reflected in Deutsche Bank’s litigation provisions.

On July 29, 2020, Deutsche Bank executed a settlement agreement with plaintiffs in the amount of U.S.$ 425,000 to resolve a putative class action pending as part of the U.S. dollar LIBOR MDL asserting claims on behalf of lending institutions headquartered in the United States that originated, purchased outright, or purchased a participation interest in loans tied to

U.S. dollar LIBOR (*The Berkshire Bank* v. *Bank of America*). The court granted the settlement preliminary approval on October 30, 2020. On February 8, 2021, the plaintiffs moved the court for final approval of the settlement. The settlement amount, which Deutsche Bank has paid, is no longer reflected in Deutsche Bank's litigation provisions.

On March 24, 2020, Deutsche Bank and the plaintiff in a non-class action pending as part of the U.S. dollar LIBOR MDL (*Salix Capital US Inc.* v. *Banc of America Securities LLC*) stipulated to the dismissal of the plaintiff's claims against Deutsche Bank. The court dismissed the plaintiff's claims on March 25, 2020. On August 17, 2020, Deutsche Bank and the plaintiffs in two non-class actions pending as part of the U.S. dollar LIBOR MDL (*Prudential Investment Portfolios* v. *Bank of America Corp.*; *Prudential Investment Portfolios* v. *Barclays Bank plc.*) stipulated to the dismissal of the plaintiffs' claims against Deutsche Bank. The court dismissed the plaintiffs' claims on August 18, 2020. On November 9, 2020, Deutsche Bank and the plaintiff in a non-class action pending as part of the U.S. dollar LIBOR MDL (*Federal National Mortgage Association* v. *Barclays Bank plc.*) stipulated to the dismissal of the plaintiff's claims against Deutsche Bank, and the court dismissed the claims. On February 3, 2021, Deutsche Bank and the plaintiffs in a non-class action pending as part of the U.S. dollar LIBOR MDL (*Darby Financial Products* v. *Barclays Bank plc.*) stipulated to the dismissal of the plaintiffs' claims against Deutsche Bank, and the court dismissed the claims.

In January and March 2019, plaintiffs filed three putative class action complaints in the SDNY against several financial institutions, alleging that the defendants, members of the panel of banks that provided U.S. dollar LIBOR submissions, the organization that administers LIBOR, and their affiliates, conspired to suppress U.S. dollar LIBOR submissions from February 1, 2014 through the present. These actions were subsequently consolidated under *In re ICE LIBOR Antitrust Litigation*, and on July 1, 2019, the plaintiffs filed a consolidated amended complaint. On March 26, 2020, the court granted the defendants' motion to dismiss the action, dismissing all claims against Deutsche Bank. Plaintiffs have appealed that decision to the U.S. Court of Appeals for the Second Circuit. Briefing of the appeal is complete. On December 28, 2020, DYJ Holdings, LLC filed a motion to intervene in the appeal as named plaintiff and proposed class representative, as one of the original named plaintiffs has withdrawn and dismissed its claims and the other two named plaintiffs have expressed a desire to withdraw from the case. On January 7, 2021, defendants filed a motion to dismiss the appeal for lack of subject matter jurisdiction. Briefing of both motions is complete. This action is not part of the U.S. dollar LIBOR MDL.

In August 2020, plaintiffs filed a non-class action in the U.S. District Court for the Northern District of California against several financial institutions, alleging that U.S. dollar LIBOR has been suppressed through the present. On November 10, 2020, plaintiffs moved the court for a preliminary and permanent injunction; briefing of that motion is complete. On November 11, 2020, certain defendants moved to transfer the action to the SDNY; briefing of that motion is complete. This action is not part of the U.S. dollar LIBOR MDL.

There is a further UK civil action regarding U.S. dollar LIBOR brought by the U.S. Federal Deposit Insurance Corporation, in which a claim for damages has been asserted pursuant to Article 101 of The Treaty on the Functioning of the European Union, Section 2 of Chapter 1 of the UK Competition Act 1998 and U.S. state laws. Deutsche Bank is defending this action.

A further class action regarding LIBOR, EURIBOR and TIBOR was filed in Israel in 2018 seeking damages for losses incurred by Israeli individuals and entities. Deutsche Bank contested service and jurisdiction, and the class action claim against Deutsche Bank was dismissed by the Israeli court on November 30, 2020.

A further class action regarding LIBOR has been filed in Argentina seeking damages for losses allegedly suffered by holders of Argentine bonds with interest rates based on LIBOR. Deutsche Bank is defending this action.

SIBOR and SOR. A putative class action alleging manipulation of the Singapore Interbank Offered Rate (SIBOR) and Swap Offer Rate (SOR) remains pending. On July 26, 2019, the SDNY granted the defendants' motion to dismiss the action, dismissing all claims against Deutsche Bank, and denied plaintiff's motion for leave to file a fourth amended complaint. Plaintiff appealed that decision to the U.S. Court of Appeals for the Second Circuit. Briefing of the appeal is complete, and oral argument was heard on September 11, 2020.

GBP LIBOR. A putative class action alleging manipulation of the Pound Sterling (GBP) LIBOR remains pending. On December 21, 2018, the SDNY partially granted defendants' motions to dismiss the action, dismissing all claims against Deutsche Bank. On August 16, 2019, the court denied plaintiffs' motion for partial reconsideration of the court's December 21, 2018 decision. Plaintiffs have filed a notice of appeal; the U.S. Court of Appeals for the Second Circuit has ordered that the appeal be held in abeyance pending that court's decision in the appeal of the SIBOR and SOR class action.

CHF LIBOR. A putative class action alleging manipulation of the Swiss Franc (CHF) LIBOR remains pending. On September 16, 2019, the SDNY granted defendants' motion to dismiss the action, dismissing all claims against Deutsche Bank. Plaintiffs have filed a notice of appeal; the U.S. Court of Appeals for the Second Circuit has ordered that the appeal be held in abeyance pending that court's decision in the appeal of the SIBOR and SOR class action.

Spanish EURIBOR Claims. 53 claims in Spain have been filed against Deutsche Bank by claimants with mortgage loans held by banks and other financial institutions for damages resulting from alleged collusive behaviour by Deutsche Bank following the European Commission's Decision. Of the 53 claims, court proceedings with respect to 22 claims have commenced. The total value of current claims is approximately € 790,000, with the potential for more claims. The first trial was due to take place on February 1, 2021, but it has been postponed with a new trial date to be advised.

Investigations Into Referral Hiring Practices and Certain Business Relationships and Precious Metals. On August 22, 2019, Deutsche Bank reached a settlement with the U.S. Securities and Exchange Commission (SEC) to resolve its investigation into the Bank's hiring practices related to candidates referred by clients, potential clients and government officials. The Bank agreed to pay U.S.$ 16 million as part of the settlement. The U.S. Department of Justice (DOJ) closed its investigation of the Bank regarding its hiring practices. Deutsche Bank has also reached settlements with the DOJ and the SEC, respectively, regarding their investigations of the Bank's compliance with the U.S. Foreign Corrupt Practices Act (FCPA) and other laws with respect to the Bank's engagement of finders and consultants. On January 8, 2021, Deutsche Bank entered into a deferred prosecution agreement (DPA) with the DOJ concerning its historical engagements of finders and consultants and, as part of its obligations in the DPA, agreed to pay approximately U.S.$ 80 million in connection with this conduct. The DPA with the DOJ also involved a resolution involving spoofing in precious metals. As part of its obligations in the DPA relating to precious metals, Deutsche Bank agreed to pay approximately U.S.$ 8 million, of which approximately U.S.$ 6 million would be credited by virtue of Deutsche Bank's 2018 resolution with the CFTC. On the same day, Deutsche Bank also reached a settlement with the SEC to resolve its investigation into conduct regarding the Bank's compliance with the FCPA with respect to the Bank's engagement of finders and consultants. The Bank agreed to pay approximately U.S.$ 43 million in this SEC settlement.

Jeffrey Epstein Investigations. Deutsche Bank has received requests for information from regulatory and law enforcement agencies concerning the Bank's former client relationship with Jeffrey Epstein (individually, and through related parties and entities). In December 2018, Deutsche Bank began the process to terminate its relationship with Epstein, which began in August 2013. Deutsche Bank has provided information to and otherwise cooperated with the investigating agencies. The Bank has also completed an internal investigation into the Epstein relationship.

On July 7, 2020, the New York State Department of Financial Services (DFS) issued a Consent Order, finding that Deutsche Bank violated New York State banking laws in connection with its relationships with three former Deutsche Bank clients, Danske Bank's Estonia branch, Jeffrey Epstein and FBME Bank, and imposing a U.S.$ 150 million civil penalty in connection with these three former relationships, which Deutsche Bank paid in the third quarter of 2020. As noted above, the Bank is also named as a defendant in a securities class action pending in the U.S. District Court for the District of New Jersey that includes allegations relating to the Bank's relationship with Jeffrey Epstein and other entities.

The Group has not established a provision or contingent liability with respect to the Jeffrey Epstein investigations and civil action. The remaining investigations relating to Jeffrey Epstein are ongoing.

Mortgage-Related and Asset-Backed Securities Matters and Investigation. *Regulatory and Governmental Matters.* Deutsche Bank, along with certain affiliates (collectively referred in these paragraphs to as "Deutsche Bank"), received subpoenas and requests for information from certain regulators and government entities, including members of the Residential Mortgage-Backed Securities Working Group of the U.S. Financial Fraud Enforcement Task Force, concerning its activities regarding the origination, purchase, securitization, sale, valuation and/or trading of mortgage loans, residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), collateralized debt obligations (CDOs), other asset-backed securities and credit derivatives. Deutsche Bank fully cooperated in response to those subpoenas and requests for information.

On December 23, 2016, Deutsche Bank announced that it reached a settlement-in-principle with the DOJ to resolve potential claims related to its RMBS business conducted from 2005 to 2007. The settlement became final and was announced by the DOJ on January 17, 2017. Under the settlement, Deutsche Bank paid a civil monetary penalty of U.S.$ 3.1 billion and provided U.S.$ 4.1 billion in consumer relief. The DOJ appointed an independent monitor to oversee and validate the provision of consumer relief.

In September 2016, Deutsche Bank received administrative subpoenas from the Maryland Attorney General seeking information concerning Deutsche Bank's RMBS and CDO businesses from 2002 to 2009. On June 1, 2017, Deutsche Bank and the Maryland Attorney General reached a settlement to resolve the matter for U.S.$ 15 million in cash and U.S.$ 80 million in consumer relief (to be allocated from the overall U.S.$ 4.1 billion consumer relief obligation agreed to as part of Deutsche Bank's settlement with the DOJ).

On July 8, 2020, the DOJ-appointed monitor released his final report, validating that Deutsche Bank has fulfilled its U.S.$ 4.1 billion consumer relief obligations in its entirety, inclusive of the U.S.$ 80 million commitment to the State of Maryland.

The Group has recorded provisions with respect to some of the outstanding regulatory investigations but not others. The Group has not disclosed the amount of these provisions because it has concluded that such disclosure can be expected to prejudice seriously the resolution of these matters.

Issuer and Underwriter Civil Litigation. Deutsche Bank has been named as defendant in numerous civil litigations brought by private parties in connection with its various roles, including issuer or underwriter, in offerings of RMBS and other asset-backed securities. These cases, described below, allege that the offering documents contained material misrepresentations and omissions, including with regard to the underwriting standards pursuant to which the underlying mortgage loans were issued, or assert that various representations or warranties relating to the loans were breached at the time of origination. The Group has recorded provisions with respect to several of these civil cases, but has not recorded provisions with respect to all of these matters. The Group has not disclosed the amount of these provisions because it has concluded that such disclosure can be expected to prejudice seriously the resolution of these matters.

Deutsche Bank is a defendant in a class action relating to its role as one of the underwriters of six RMBS offerings issued by Novastar Mortgage Corporation. No specific damages are alleged in the complaint. The lawsuit was brought by plaintiffs representing a class of investors who purchased certificates in those offerings. The parties reached a settlement to resolve the matter for a total of U.S.$ 165 million, a portion of which was paid by the Bank. On August 30, 2017, FHFA/Freddie Mac filed an objection to the settlement and shortly thereafter appealed the district court's denial of their request to stay settlement approval proceedings, which appeal was resolved against FHFA/Freddie Mac. The court approved the settlement on March 7, 2019 over FHFA/Freddie Mac's objections. FHFA filed its appeal on June 28, 2019, which is pending.

Deutsche Bank is a defendant in an action related to RMBS offerings brought by the U.S. Federal Deposit Insurance Corporation (FDIC) as receiver for Citizens National Bank and Strategic Capital Bank (alleging an unspecified amount in damages against all defendants). In this action, the appellate court reinstated claims previously dismissed on statute of limitations grounds and petitions for rehearing and certiorari to the U.S. Supreme Court were denied. On July 31, 2017, the FDIC filed a second amended complaint, which defendants moved to dismiss on September 14, 2017. On October 18, 2019, defendants' motion to dismiss was denied. Discovery is ongoing.

In June 2014, HSBC, as trustee, brought an action in New York state court against Deutsche Bank to revive a prior action, alleging that Deutsche Bank failed to repurchase mortgage loans in the ACE Securities Corp. 2006-SL2 RMBS offering. The revival action was stayed during the pendency of an appeal of the dismissal of a separate action wherein HSBC, as trustee, brought an action against Deutsche Bank alleging breaches of representations and warranties made by Deutsche Bank concerning the mortgage loans in the same offering. On March 29, 2016, the court dismissed the revival action, and on April 29, 2016, plaintiff filed a notice of appeal. On July 8, 2019, plaintiff filed its opening appellate brief. On November 19, 2019, the appellate court affirmed the dismissal. On December 19, 2019, plaintiff filed a motion to appeal to the New York Court of Appeals in the appeals court, which was denied on February 13, 2020. On March 16, 2020, plaintiff petitioned the New York Court of Appeals for leave to appeal, which was granted on September 1, 2020. Plaintiff's opening brief was filed on November 2, 2020.

Deutsche Bank is a defendant in cases concerning two RMBS trusts that were brought initially by RMBS investors and subsequently by HSBC, as trustee, in New York state court. The cases allege breaches of loan-level representations and warranties in the ACE Securities Corp. 2006-FM1 and ACE Securities Corp. 2007-ASAP1 RMBS offerings, respectively. Both cases were dismissed on statute of limitations grounds by the trial court on March 28, 2018. Plaintiff appealed the dismissals. On April 25, 2019, the First Department affirmed the dismissals on claims for breach of representations and warranties and for breach of the implied covenant of good faith and fair dealing, but reversed the denial of the motions for leave to file amended complaints alleging failure to notify the trustee of alleged representations and warranty breaches. HSBC filed amended complaints on April 30, 2019, and Deutsche Bank filed its answers on June 3, 2019. Discovery is ongoing. On October 25, 2019, plaintiffs filed two complaints seeking to revive, under Section 205(a) of the New York Civil Practice Law and Rules, the breach of representations and warranties claims as to which dismissal was affirmed in the case concerning ACE 2006-FM1. On December 16, 2019, Deutsche Bank moved to dismiss these actions.

In the actions against Deutsche Bank solely as an underwriter of other issuers' RMBS offerings, Deutsche Bank has contractual rights to indemnification from the issuers, but those indemnity rights may in whole or in part prove effectively unenforceable where the issuers are now or may in the future be in bankruptcy or otherwise defunct.

Trustee Civil Litigation. Deutsche Bank is a defendant in four separate civil lawsuits brought by investors concerning its role as trustee of certain RMBS trusts. The actions generally allege claims for breach of contract, breach of fiduciary duty, breach of the duty to avoid conflicts of interest, negligence and/or violations of the U.S. Trust Indenture Act of 1939, based on the trustees' alleged failure to perform adequately certain obligations and/or duties as trustee for the trusts.

The four lawsuits include actions by (a) the National Credit Union Administration Board ("NCUA"), as an investor in 37 trusts, which allegedly suffered total realized collateral losses of U.S.$ 8.5 billion; (b) certain CDOs (collectively, "Phoenix Light") that hold RMBS certificates issued by 43 RMBS trusts, and seeking "hundreds of millions of dollars in damages"; (c) Commerzbank AG, as an investor in 50 RMBS trusts, seeking recovery for alleged "hundreds of millions of dollars in losses"; and (d) IKB International, S.A. in Liquidation and IKB Deutsche Industriebank AG (collectively, "IKB"), as an investor in 30 RMBS trusts, seeking more than U.S.$ 268 million of damages. In the NCUA case, NCUA notified the court on August 31, 2018 that it was dismissing claims relating to 60 out of the 97 trusts originally at issue; on October 15, 2019, NCUA's motion for leave to amend its complaint was granted, and Deutsche Bank's motion to dismiss the amended complaint was granted in part and denied in part, dismissing NCUA's tort claims but preserving its breach-of-contract claims. In the Phoenix Light case and Commerzbank case, on December 7, 2018 the parties filed motions for summary judgment, which have been fully briefed as of March 9, 2019. On January 27, 2021, the court in the IKB case granted in part and denied in part Deutsche Bank's motion to dismiss, dismissing certain of IKB's claims but allowing most of its breach of contract and tort claims to go forward. Discovery is ongoing.

The Group has established contingent liabilities with respect to certain of these matters but the Group has not disclosed the amounts because it has concluded that such disclosure can be expected to prejudice seriously the outcome of these matters.

Postbank Voluntary Public Takeover Offer. On September 12, 2010, Deutsche Bank announced the decision to make a voluntary takeover offer for the acquisition of all shares in Deutsche Postbank AG (Postbank). On October 7, 2010, the Bank published its official takeover offer and offered Postbank shareholders a consideration of € 25 for each Postbank share. This offer was accepted for a total of approximately 48.2 million Postbank shares.

In November 2010, a former shareholder of Postbank, Effecten-Spiegel AG, which had accepted the takeover offer, brought a claim against Deutsche Bank alleging that the offer price was too low and was not determined in accordance with the applicable German laws. The plaintiff alleges that Deutsche Bank had been obliged to make a mandatory takeover offer for all shares in Postbank, at the latest, in 2009 as the voting rights of Deutsche Post AG in Postbank had to be attributed to Deutsche Bank pursuant to Section 30 of the German Takeover Act. Based thereon, the plaintiff alleges that the consideration offered by Deutsche Bank for the shares in Postbank in the 2010 voluntary takeover offer needed to be raised to € 57.25 per share.

The Regional Court Cologne *(Landgericht)* dismissed the claim in 2011 and the Cologne appellate court dismissed the appeal in 2012. The Federal Court set this judgment aside and referred the case back to the Higher Regional Court Cologne to take evidence on certain allegations of the plaintiff.

Starting in 2014, additional former shareholders of Postbank, who accepted the 2010 tender offer, brought similar claims as Effecten-Spiegel AG against Deutsche Bank which are pending with the Regional Court Cologne and the Higher Regional Court of Cologne, respectively. On October 20, 2017, the Regional Court Cologne handed down a decision granting the claims in a total of 14 cases which were combined in one proceeding. The Regional Court Cologne took the view that Deutsche Bank was obliged to make a mandatory takeover offer already in 2008 so that the appropriate consideration to be offered in the takeover offer should have been € 57.25 per Postbank share (instead of € 25). The additional consideration per share owed to shareholders which have accepted the takeover offer would thus amount to € 32.25. Deutsche Bank appealed this decision and the appeal was assigned to the 13th Senate of the Higher Regional Court of Cologne, which also heard the appeal of Effecten-Spiegel AG.

In 2019 and 2020 the Higher Regional Court Cologne called a number of witnesses in both cases. The individuals heard included current and former board members of Deutsche Bank, Deutsche Post AG and Postbank as well as other persons involved in the Postbank transaction. In addition, the Higher Regional Court Cologne issued orders for the production of relevant transaction documents entered into between Deutsche Bank and Deutsche Post AG in 2008 and 2009. Deutsche Bank had therefore deposited the originals of these documents with the court in 2019.

On December 16, 2020, the Higher Regional Court Cologne handed down a decision and fully dismissed the claims of Effecten-Spiegel AG. Further, in a second decision handed down on December 16, 2020, the Higher Regional Court Cologne allowed the appeal of Deutsche Bank against the decision of the Regional Court Cologne dated October, 20, 2017 and dismissed all related claims of the relevant plaintiffs. The Higher Regional Court Cologne has granted leave to appeal to the German Federal Court (*Bundesgerichtshof*) as regards both decisions and all relevant plaintiffs have lodged their respective appeals with the Federal Court end of January and beginning of February 2021, respectively.

Deutsche Bank has been served with a large number of additional lawsuits filed against Deutsche Bank shortly before the end of 2017, almost all of which are now pending with the Regional Court Cologne. Some of the new plaintiffs allege that the consideration offered by Deutsche Bank AG for the shares in Postbank in the 2010 voluntary takeover should be raised to € 64.25 per share.

The claims for payment against Deutsche Bank in relation to these matters total almost € 700 million (excluding interest).

The Group has established a contingent liability with respect to these matters but the Group has not disclosed the amount of this contingent liability because it has concluded that such disclosure can be expected to prejudice seriously the outcome of these matters.

Further Proceedings Relating to the Postbank Takeover. In September 2015, former shareholders of Postbank filed in the Regional Court Cologne shareholder actions against Postbank to set aside the squeeze-out resolution taken in the shareholders meeting of Postbank in August 2015 (actions for voidance). Among other things, the plaintiffs alleged that Deutsche Bank was subject to a suspension of voting rights with respect to its shares in Postbank based on the allegation that Deutsche Bank failed to make a mandatory takeover offer. The squeeze out is final and the proceeding itself has no reversal effect, but may result in damage payments. The claimants refer to legal arguments similar to those asserted in the Effecten-Spiegel proceeding described above. In a decision on October 20, 2017, the Regional Court Cologne declared the squeeze-out resolution to be void. The court, however, did not rely on a suspension of voting rights due to an alleged failure of Deutsche Bank to make a mandatory takeover offer, but argued that Postbank violated information rights of Postbank shareholders in Postbank's shareholders meeting in August 2015. Postbank has appealed this decision. On May 15, 2020 DB Privat- und Firmenkundenbank AG (legal successor of Postbank due to a merger in 2018) was merged into Deutsche Bank AG. On July 3, 2020 Deutsche Bank AG withdrew the appeal as regards the actions for voidance because efforts and costs to pursue this appeal became disproportionate to the minor remaining economic importance of the case considering that the 2015 squeeze-out cannot be reversed. As a consequence, the first instance judgement which found that Postbank violated the information rights of its shareholders in the shareholders' meeting has now become final.

The legal question of whether Deutsche Bank had been obliged to make a mandatory takeover offer for all Postbank shares prior to its 2010 voluntary takeover may also impact two pending appraisal proceedings (*Spruchverfahren*). These proceedings were initiated by former Postbank shareholders with the aim to increase the cash compensation offered in connection with the squeeze-out of Postbank shareholders in 2015 and the cash compensation offered and annual compensation paid in connection with the execution of a domination and profit and loss transfer agreement (*Beherrschungs- und Gewinnabführungsvertrag*) between DB Finanz-Holding AG (now DB Beteiligungs-Holding GmbH) and Postbank in 2012.

The applicants in the appraisal proceedings claim that a potential obligation of Deutsche Bank to make a mandatory takeover offer for Postbank at an offer price of € 57.25 should be decisive when determining the adequate cash compensation in the appraisal proceedings. The Regional Court Cologne had originally followed this legal view of the applicants in two resolutions. In a decision dated June 2019, the Regional Court Cologne expressly gave up this legal view in the appraisal proceedings in connection with execution of a domination and profit and loss transfer agreement. According to this decision, the question whether Deutsche Bank was obliged to make a mandatory offer for all Postbank shares prior to its voluntary takeover offer in 2010 shall not be relevant for determining the appropriate cash compensation. It is likely that the Regional Court Cologne will take the same legal position in the appraisal proceedings in connection with the squeeze-out. On October 1, 2020, the Regional Court Cologne handed down a decision in the appraisal proceeding concerning the domination and profit and loss transfer agreement (dated December 5, 2012) according to which the annual compensation pursuant to Section 304 of the German Stock Corporation Act (*jährliche Ausgleichszahlung*) shall be increased by € 0.12 to € 1.78 per Postbank share and the settlement amount pursuant to Section 305 of the German Stock Corporation Act (*Abfindungsbetrag*) shall be increased by € 4.56 to € 29.74 per Postbank share. The increase of the settlement amount is of relevance for approximately 492.000 former Postbank shares whereas the increase of the annual compensation is of relevance for approximately 7 million former Postbank shares. Deutsche Bank as well as the applicants have lodged an appeal against this decision.

The Group has not disclosed whether it has established a provision or contingent liability with respect to this matter because it has concluded that such disclosure can be expected to prejudice seriously its outcome.

Russia/UK Equities Trading Investigation. Deutsche Bank has investigated the circumstances around equity trades entered into by certain clients with Deutsche Bank in Moscow and London that offset one another. The total volume of transactions reviewed is significant. Deutsche Bank's internal investigation of potential violations of law, regulation and policy and into the related internal control environment has concluded, and Deutsche Bank has assessed the findings identified during the investigation; to date it has identified certain violations of Deutsche Bank's policies and deficiencies in Deutsche Bank's control environment. Deutsche Bank has advised regulators and law enforcement authorities in several jurisdictions (including Germany, Russia, the UK and the United States) of this investigation. Deutsche Bank has taken disciplinary measures with regards to certain individuals in this matter.

On January 30 and 31, 2017, the DFS and the FCA announced settlements with the Bank related to their investigations into this matter. The settlements conclude the DFS and the FCA's investigations into the Bank's AML control function in its investment banking division, including in relation to the equity trading described above. Under the terms of the settlement agreement the DFS issued a Consent Order pursuant to which Deutsche Bank agreed to pay a civil monetary penalty of U.S.$ 425 million and to engage an independent monitor for a term of up to two years. Under the terms of the settlement agreement with the FCA, Deutsche Bank agreed to pay a civil monetary penalty of approximately GBP 163 million. On May 30, 2017, the Federal Reserve announced its settlement with the Bank resolving this matter as well as additional AML issues identified by the Federal Reserve. Deutsche Bank paid a penalty of U.S.$ 41 million. Deutsche Bank also agreed to retain

independent third parties to assess its Bank Secrecy Act/AML program and review certain foreign correspondent banking activity of its subsidiary Deutsche Bank Trust Company Americas. The Bank is also required to submit written remediation plans and programs.

Deutsche Bank continues to cooperate with regulators and law enforcement authorities, including the DOJ which has its own ongoing investigation into these securities trades. The Group has recorded a provision with respect to the remaining investigation. The Group has not disclosed the amount of this provision because it has concluded that such disclosure can be expected to prejudice seriously the outcome of this matter.

Sovereign, Supranational and Agency Bonds (SSA) Investigations and Litigations. Deutsche Bank has received inquiries from certain regulatory and law enforcement authorities, including requests for information and documents, pertaining to SSA bond trading. Deutsche Bank is cooperating with these investigations.

On December 20, 2018, the European Commission sent a Statement of Objections to Deutsche Bank regarding a potential breach of EU antitrust rules in relation to secondary market trading of SSA bonds denominated in U.S. dollars. The sending of a Statement of Objections is a step in the European Commission's investigation and does not prejudge the outcome of the investigation. Deutsche Bank has proactively cooperated with the European Commission in this matter and as a result has been granted immunity. In accordance with the European Commission's guidelines, Deutsche Bank does not expect a financial penalty.

Deutsche Bank is a defendant in several putative class action complaints filed in the U.S. District Court for the Southern District of New York by alleged direct and indirect market participants claiming violations of antitrust law and common law related to alleged manipulation of the secondary trading market for SSA bonds. Deutsche Bank has reached an agreement to settle the actions by direct market participants for the amount of U.S.$ 48.5 million and has recorded a provision in the same amount. The settlement is subject to court approval. The action filed on behalf of alleged indirect market participants was voluntarily dismissed by the plaintiffs.

Deutsche Bank is also a defendant in putative class actions filed on November 7, 2017 and December 5, 2017 in the Ontario Superior Court of Justice and Federal Court of Canada, respectively, claiming violations of antitrust law and the common law relating to alleged manipulation of secondary trading of SSA bonds. The complaints rely on allegations similar to those in the U.S. class actions involving SSA bond trading, and seek compensatory and punitive damages. The cases are in their early stages.

Deutsche Bank was named as a defendant in a consolidated putative class action filed in the U.S. District Court for the Southern District of New York alleging violations of U.S. antitrust law and a claim for unjust enrichment relating to Mexican government bond trading. In October 2019, the court granted defendants' motion to dismiss plaintiffs' consolidated amended complaint without prejudice. In December 2019, plaintiffs filed a Second Amended Complaint, which the court dismissed without prejudice on November 30, 2020. On January 22, 2021, Deutsche Bank was notified that the Mexican competition authority, COFECE, reached a resolution that imposes fines against DB Mexico and two of its former traders, as well as six other financial institutions and nine other traders, for engaging in alleged monopolistic practices in the Mexican government bond secondary market, which may be appealed. The fine against DB Mexico was approximately U.S.$ 427,000.

Deutsche Bank was also named as a defendant in several putative class action complaints filed in the U.S. District Court for the Southern District of New York alleging violations of antitrust law and common law related to alleged manipulation of the secondary trading market for U.S. Agency bonds; on September 3, 2019, the court denied a motion to dismiss the complaint. Deutsche Bank has reached an agreement to settle the class actions for the amount of U.S.$ 15 million, which amount was already fully reflected in existing litigation reserves and no additional provision was taken for this settlement amount. The court granted preliminary approval over the settlement on October 29, 2019, supported by an opinion issued November 8, 2019. The court held a final fairness hearing on June 9, 2020. On June 18, 2020, the court entered final judgement approving the class action settlement with Deutsche Bank and separately as to the class action settlements with the other defendants which will result in a total of U.S.$ 386.5 million paid to the settlement class. A separate action was filed in the U.S. District Court for the Middle District of Louisiana on September 23, 2019, which was dismissed with prejudice as to Deutsche Bank by stipulation of the parties on October 30, 2019.

Other than as noted above, the Group has not disclosed whether it has established provisions or contingent liabilities with respect to the matters referred to above because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

US Treasury Securities Investigations. Deutsche Bank has received inquiries from certain regulatory and law enforcement authorities, including requests for information and documents, pertaining to U.S. Treasuries auctions, trading, and related market activity. Deutsche Bank is cooperating with these investigations.

Deutsche Bank's subsidiary Deutsche Bank Securities Inc. (DBSI) was a defendant in several putative class actions alleging violations of U.S. antitrust law, the U.S. Commodity Exchange Act and common law related to the alleged manipulation of the U.S. Treasury securities market. These cases have been consolidated in the Southern District of New York. On November 16, 2017, plaintiffs filed a consolidated amended complaint, which did not name DBSI as a defendant. On December 11, 2017, the court dismissed DBSI from the class action without prejudice.

On June 18, 2020, the CFTC entered an order pursuant to settlement with DBSI for alleged spoofing by two Tokyo-based traders between January and December 2013. Without admitting or denying the findings or conclusions therein, Deutsche Bank consented to the entry of the order, including a civil monetary fine of U.S.$ 1.25 million.

US Treasury Spoofing Litigation. Following the Bank's settlement with the CFTC five separate putative class actions were filed in the Northern District of Illinois against Deutsche Bank AG and DBSI. The cases allege that Deutsche Bank and other unnamed entities participated in a scheme from January to December 2013 to spoof the market for Treasuries futures and options contracts and Eurodollars futures and options contracts. Plaintiffs filed a consolidated complaint on November 13, 2020. Deutsche Bank AG and DBSI filed a motion to dismiss on January 15, 2021; briefing on the motion to dismiss is set to conclude by April 16, 2021.

The Group has not disclosed whether it has established a provision or contingent liability with respect to these matters because it has concluded that such disclosure can be expected to prejudice seriously their outcome.

28 – Credit related commitments and contingent liabilities

Irrevocable lending commitments and lending related contingent liabilities

In the normal course of business the Group regularly enters into irrevocable lending commitments, including fronting commitments as well as contingent liabilities consisting of financial and performance guarantees, standby letters of credit and indemnity agreements on behalf of its customers. Under these contracts the Group is required to perform under an obligation agreement or to make payments to the beneficiary based on third party's failure to meet its obligations. For these instruments it is not known to the Group in detail if, when and to what extent claims will be made. In the event that the Group has to pay out cash in respect of its fronting commitments, the Group would immediately seek reimbursement from the other syndicate lenders. The Group considers all the above instruments in monitoring the credit exposure and may require collateral to mitigate inherent credit risk. If the credit risk monitoring provides sufficient perception about a loss from an expected claim, a provision is established and recorded on the balance sheet.

The following table shows the Group's revocable lending commitments, irrevocable lending commitments and lending related contingent liabilities without considering collateral or provisions. It shows the maximum potential utilization of the Group in case all these liabilities entered into must be fulfilled. The table therefore does not show the expected future cash flows from these liabilities as many of them will expire without being drawn and arising claims will be honoured by the customers or can be recovered from proceeds of arranged collateral.

At the end of the first quarter 2020, we observed that many clients drew down their lending commitments due to liquidity concerns as impact of the COVID-19 pandemic, which led to a significant decrease of up to €12.8 billion in irrevocable lending commitments. Throughout the year the situation has stabilized and irrevocable lending commitments returned to similar levels in December 2020 compared to December 2019.

Irrevocable lending commitments and lending related contingent liabilities

in € m.	Dec 31, 2020	Dec 31, 2019
Irrevocable lending commitments	165,643	167,788
Revocable lending commitments	50,233	43,652
Contingent liabilities	47,978	49,232
Total	**263,854**	260,672

Other commitments and other contingent liabilities

The following table shows the Group's other irrevocable commitments and other contingent liabilities without considering collateral or provisions. It shows the maximum potential utilization of the Group in case all these liabilities entered into must be fulfilled. The table therefore does not show the expected future cash flows from these liabilities as many of them will expire without being drawn and arising claims will be honoured by the customers or can be recovered from proceeds of arranged collateral.

Other commitments and other contingent liabilities

in € m.	Dec 31, 2020	Dec 31, 2019
Other commitments	144	143
Other contingent liabilities	73	78
Total	**217**	220

Government assistance

In the course of its business, the Group regularly applies for and receives government support by means of Export Credit Agency ("ECA") guarantees covering transfer and default risks for the financing of exports and investments into Emerging Markets and to a lesser extent, developed markets for Structured Trade & Export Finance and short- and medium-term Trade Finance business. Almost all export-oriented states have established such ECAs to support their domestic exporters. The ECAs act in the name and on behalf of the government of their respective country and are either constituted directly as governmental departments or organized as private companies vested with the official mandate of the government to act on its behalf. Terms and conditions of such ECA guarantees are broadly similar due to the fact that most of the ECAs act within the scope of the Organization for Economic Cooperation and Development ("OECD") consensus rules. The OECD consensus rules, an intergovernmental agreement of the OECD member states, define benchmarks intended to ensure that a fair competition between different exporting nations will take place.

In some countries dedicated funding programs with governmental support are offered for ECA-covered financings. The Group makes use of such programs to assist its clients in the financing of exported goods and services. In certain financings, the Group also receives government guarantees from national and international governmental institutions as collateral to support financings in the interest of the respective governments. The majority of such ECA guarantees received by the Group were issued either by the Euler-Hermes Kreditversicherungs-AG acting on behalf of the Federal Republic of Germany, by the Korean Export Credit Agencies (Korea Trade Insurance Corporation and The Export-Import Bank of Korea) acting on behalf of the Republic of Korea or by Chinese Export Credit Agency (China Export & Insurance Corporation (Sinosure)) acting on behalf of the People's Republic of China.

In light of the COVID-19 pandemic, the government created additional support via state backed loans. Further information can be found in section "Legislative and non-legislative moratoria and public guarantee schemes in light of COVID-19 pandemic".

Irrevocable payment commitments with regard to levies

Irrevocable payment commitments related to bank levy according to Bank Recovery and Resolution Directive (BRRD), the Single Resolution Fund (SRF) and the German deposit protection amounted to € 915.6 million as of December 31, 2020, and to € 767.3 million as of December 31, 2019.

29 – Other short-term borrowings

in € m.	Dec 31, 2020	Dec 31, 2019
Other short-term borrowings:		
Commercial paper	1,748	1,585
Other	1,804	3,633
Total other short-term borrowings	**3,553**	5,218

30 – Long-term debt and trust preferred securities

Long-Term Debt by Earliest Contractual Maturity

in € m.	Due in 2021	Due in 2022	Due in 2023	Due in 2024	Due in 2025	Due after 2025	Total Dec 31, 2020	Total Dec 31, 2019
Senior debt:								
Bonds and notes:								
Fixed rate	18,447	9,575	11,234	8,518	6,435	13,288	67,496	77,243
Floating rate	7,017	2,887	1,584	3,526	3,903	6,978	25,895	23,944
Other	34,120	1,274	5,739	911	1,507	4,552	48,103	28,019
Subordinated debt:								
Bonds and notes:								
Fixed rate	18	0	30	14	2,601	3,386	6,049	5,517
Floating rate	0	0	1,100	123	80	0	1,303	1,417
Other	24	15	103	82	0	93	316	333
Total long-term debt	59,626	13,751	19,789	13,174	14,526	28,297	149,163	136,473

The Group did not have any defaults of principal, interest or other breaches with respect to its liabilities in 2020 and 2019.

Trust Preferred Securities[1]

in € m.	Dec 31, 2020	Dec 31, 2019
Fixed rate	269	976
Floating rate	1,052	1,037
Total trust preferred securities	**1,321**	2,013

[1] Perpetual instruments, redeemable at specific future dates at the Group's option.

31 – Maturity analysis of the earliest contractual undiscounted cash flows of financial liabilities

	Dec 31, 2020				
in € m.	On demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years
Noninterest bearing deposits	220,501	0	0	0	0
Interest bearing deposits	154,777	105,566	64,729	13,815	10,230
Trading liabilities[1]	44,289	0	0	0	0
Negative market values from derivative financial instruments[1]	327,775	0	0	0	0
Financial liabilities designated at fair value through profit or loss	23,692	16,204	3,451	2,127	2,095
Investment contract liabilities[2]	0	0	526	0	0
Negative market values from derivative financial instruments qualifying for hedge accounting[3]	0	354	66	319	541
Central bank funds purchased	0	0	0	0	0
Securities sold under repurchase agreements	1,815	17	0	504	1
Securities loaned	1,697	0	0	0	0
Other short-term borrowings	1,385	919	1,530	0	0
Long-term debt	1	14,430	48,164	68,130	31,637
Trust preferred securities	0	0	1,345	0	0
Lease liabilities	49	128	522	1,804	2,064
Other financial liabilities	86,618	2,565	225	501	16
Off-balance sheet loan commitments	164,843	0	0	0	0
Financial guarantees	20,337	0	0	0	0
Total[4]	1,047,779	140,182	120,556	87,200	46,584

[1] Trading liabilities and derivatives not qualifying for hedge accounting balances are recorded at fair value. The Group believes that this best represents the cash flow that would have to be paid if these positions had to be closed out. Trading liabilities and derivatives not qualifying for hedge accounting balances are shown within "on demand" which Group's management believes most accurately reflects the short-term nature of trading activities. The contractual maturity of the instruments may however extend over significantly longer periods.
[2] These are investment contracts where the policy terms and conditions result in their redemption value equaling fair value.
[3] Derivatives designated for hedge accounting are recorded at fair value and are shown in the time bucket at which the hedged relationship is expected to terminate.
[4] The balances in the table do not agree to the numbers in the Group's balance sheet as the cash flows included in the table are undiscounted. This analysis represents the worst case scenario for the Group if the Group was required to repay all liabilities earlier than expected. The Group believes that the likelihood of such an event occurring is remote.

					Dec 31, 2019
in € m.	On demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years
Noninterest bearing deposits	228,731	0	0	0	0
Interest bearing deposits	135,330	113,449	68,955	16,258	10,468
Trading liabilities[1]	37,065	0	0	0	0
Negative market values from derivative financial instruments[1]	316,506	0	0	0	0
Financial liabilities designated at fair value through profit or loss	11,705	29,680	17,986	1,815	4,941
Investment contract liabilities[2]	0	0	544	0	0
Negative market values from derivative financial instruments qualifying for hedge accounting[3]	0	288	245	555	343
Central bank funds purchased	218	0	0	0	0
Securities sold under repurchase agreements	1,494	1,130	238	50	7
Securities loaned	258	0	0	0	0
Other short-term borrowings	1,893	2,435	1,368	0	0
Long-term debt	2	17,670	24,046	73,086	36,177
Trust preferred securities	0	12	2,073	0	0
Lease liabilities	53	144	533	1,922	957
Other financial liabilities	78,555	2,624	293	607	8
Off-balance sheet loan commitments	167,281	0	0	0	0
Financial guarantees	21,645	0	0	0	0
Total[4]	1,000,736	167,431	116,280	94,294	52,901

[1] Trading liabilities and derivatives not qualifying for hedge accounting balances are recorded at fair value. The Group believes that this best represents the cash flow that would have to be paid if these positions had to be closed out. Trading liabilities and derivatives not qualifying for hedge accounting balances are shown within “on demand” which Group’s management believes most accurately reflects the short-term nature of trading activities. The contractual maturity of the instruments may however extend over significantly longer periods.
[2] These are investment contracts where the policy terms and conditions result in their redemption value equaling fair value.
[3] Derivatives designated for hedge accounting are recorded at fair value and are shown in the time bucket at which the hedged relationship is expected to terminate.
[4] The balances in the table do not agree to the numbers in the Group’s balance sheet as the cash flows included in the table are undiscounted. This analysis represents the worst case scenario for the Group if the Group was required to repay all liabilities earlier than expected. The Group believes that the likelihood of such an event occurring is remote.

Additional notes

32 – Common shares

Common Shares

Deutsche Bank's share capital consists of common shares issued in registered form without par value. Under German law, each share represents an equal stake in the subscribed capital. Therefore, each share has a nominal value of € 2.56, derived by dividing the total amount of share capital by the number of shares.

Number of shares	Issued and fully paid	Treasury shares	Outstanding
Common shares, January 1, 2019	2,066,773,131	(1,344,144)	2,065,428,987
Shares issued under share-based compensation plans	0	0	0
Capital increase	0	0	0
Shares purchased for treasury	0	(193,666,155)	(193,666,155)
Shares sold or distributed from treasury	0	194,338,942	194,338,942
Common shares, December 31, 2019	2,066,773,131	(671,357)	2,066,101,774
Shares issued under share-based compensation plans	0	0	0
Capital increase	0	0	0
Shares purchased for treasury	0	(35,058,705)	(35,058,705)
Shares sold or distributed from treasury	0	34,383,896	34,383,896
Common shares, December 31, 2020	2,066,773,131	(1,346,166)	2,065,426,965

There are no issued ordinary shares that have not been fully paid.

Shares purchased for treasury mainly consist of shares purchased with the intention of being resold in the short-term as well as held by the Group for a period of time. In addition, the Group has bought back shares for equity compensation purposes. All such transactions were recorded in shareholders' equity and no revenues and expenses were recorded in connection with these activities. Treasury stock held as of year-end will mainly be used for future share-based compensation.

Authorized capital

The Management Board is authorized to increase the share capital by issuing new shares for cash consideration. As of December 31, 2020, Deutsche Bank AG had authorized but unissued capital of € 2,560,000 which may be issued in whole or in part until April 30, 2022. Further details are governed by Section 4 of the Articles of Association.

Authorized capital	Consideration	Pre-emptive rights	Expiration date
€ 512,000,000	Cash	May be excluded pursuant to Section 186 (3) sentence 4 of the Stock Corporation Act and may be excluded in so far as it is necessary to grant pre-emptive rights to the holders of option rights, convertible bonds and convertible participatory rights	April 30, 2022
€ 2,048,000,000	Cash	May be excluded insofar as it is necessary to grant pre-emptive rights to the holders of option rights, convertible bonds and convertible participatory rights.	April 30, 2022

Conditional capital

The Management Board is authorized to issue once or more than once, participatory notes that are linked with conversion rights or option rights and/or convertible bonds and/or bonds with warrants. The participatory notes, convertible bonds or bonds with warrants may also be issued by affiliated companies of Deutsche Bank AG. For this purpose share capital was increased conditionally upon exercise of these conversion and/or exchange rights or upon mandatory conversion.

Conditional capital	Purpose of conditional capital	Expiration date
€ 512,000,000	May be used if holders of conversion or option rights that are linked with participatory notes or convertible bonds or bonds with warrants make use of their conversion or option rights or holders with conversion obligations of convertible participatory notes or convertible bonds fulfill their obligation to convert.	April 30, 2022
€ 51,200,000	May be used to fulfill options that are awarded on or before the expiration date and will only be used to the extent that holders of issued options make use of their right to receive shares and shares are not delivered out of treasury shares	April 30, 2022

Dividends

The following table presents the amount of dividends proposed or declared for the years ended December 31, 2020, 2019 and 2018, respectively.

	2020 (proposed)	2019	2018
Cash dividends declared (in €)	0	0	227,000,000
Cash dividends declared per common share (in €)	0.00	0.00	0.11

No dividends have been declared since the balance sheet date.

33 – Employee benefits

Share-based compensation plans

The Group made grants of share-based compensation under the DB Equity Plan. This plan represents a contingent right to receive Deutsche Bank common shares after a specified period of time. The award recipient is not entitled to receive dividends during the vesting period of the award.

The share awards granted under the terms and conditions of the DB Equity Plan may be forfeited fully or partly if the recipient voluntarily terminates employment before the end of the relevant vesting period (or release period for Upfront Awards). Vesting usually continues after termination of employment in cases such as redundancy or retirement.

In countries where legal or other restrictions hinder the delivery of shares, a cash plan variant of the DB Equity Plan was used for granting awards, and for employees of certain legal entities, deferred equity is replaced with restricted shares due to local regulatory requirements.

Please note that this table does not cover awards granted to the Management Board, and from 2018 this table does not cover AIFMD/UCITS MRTs, or DWS Share-Based Compensation Payments, please refer to separate DWS section that covers grants to this population.

The following table sets forth the basic terms of these share plans:

Grant year(s)	Deutsche Bank Equity Plan	Vesting schedule	Eligibility
2019-2020	Annual Award	1/4: 12 months[1] 1/4: 24 months[1] 1/4: 36 months[1] 1/4: 48 months[1]	Select employees as annual performance-based compensation (CB/IB/CRU)[2]
	Annual Award	1/3: 12 months[1] 1/3: 24 months[1] 1/3: 36 months[1]	Select employees as annual performance-based compensation (non-CB/IB/CRU)[2]
	Annual Award	1/5: 12 months[1] 1/5: 24 months[1] 1/5: 36 months[1] 1/5: 48 months[1] 1/5: 60 months[1]	Select employees as annual performance-based compensation (Senior Management)
	Retention/New Hire	Individual specification	Select employees to attract and retain the best talent
	Annual Award – Upfront	Vesting immediately at grant[3]	Regulated employees
2017 -2018	Annual Award	1/4: 12 months[1] 1/4: 24 months[1] 1/4: 36 months[1] 1/4: 48 months[1] Or cliff vesting after 54 months[1]	Select employees as annual performance-based compensation Members of Senior Leadership Cadre
	Retention/New Hire	Individual specification	Select employees to attract and retain the best talent
	Key Retention Plan (KRP)[4]	1/2: 50 months[3] 1/2: 62 months[3] Cliff vesting after 43 months	Material Risk Takers (MRTs) Non-Material Risk Takers (non-MRTs)
2016	Key Position Award (KPA)[5]	Cliff-vesting after 4 years[3]	Select employees as annual retention

[1] For InstVV-regulated employees (and Senior Management) a further retention period of twelve months applies (six months for awards granted from 2017 -2018).
[2] For grant year 2019 divisions were called CIB, for grant year 2020 CIB is split into CB/IB/CRU.
[3] Share delivery takes place after a further retention period of twelve months.
[4] Equity-based awards granted under this plan in January 2017 were subject to an additional share price condition and were forfeited as a result of this condition not being met.
[5] A predefined proportion of the individual's KPA was subject to an additional share price condition and was forfeited as a result of this condition not being met.

Furthermore, the Group offers a broad-based employee share ownership plan entitled Global Share Purchase Plan (“GSPP”). The GSPP offers employees in specific countries the opportunity to purchase Deutsche Bank shares in monthly installments over one year. At the end of the purchase cycle, the bank matches the acquired stock in a ratio of one to one up to a maximum of ten free shares, provided that the employee remains at Deutsche Bank Group for another year. In total, about 11,045 staff from 18 countries enrolled in the twelfth cycle that began in November 2020.

The Group has other local share-based compensation plans, none of which, individually or in the aggregate, are material to the consolidated financial statements.

The following table sets out the movements in share award units, including grants under the cash plan variant of the DB Equity Plan.

Share units (in thousands)	2020	2019
Balance outstanding as of January 01	**168,332**	143,923[1]
Granted	44,768	64,217
Released	(32,454)	(28,475)
Forfeited	(62,398)	(11,157)
Other movements	(441)	(177)
Balance outstanding as of December 31	**117,806**	168,332

[1] Share Units outstanding at the beginning of year 2019 restated

The DB Equity Plan includes awards with share price hurdles under both the Key Position Award and the Key Retention Plan. The share price hurdle condition for both plans was measured during 2020 and was not met. As a result approximately 56 million share units were forfeited. In accordance with IFRS 2 the forfeiture due to a market performance condition did not result in a reversal to the recorded expense.

The following table sets out key information regarding awards granted, released and remaining in the year.

	2020			2019		
	Weighted average fair value per award granted in year	Weighted average share price at release in year	Weighted average remaining contractual life in years	Weighted average fair value per award granted in the year	Weighted average share price at release in year	Weighted average remaining contractual life in years
DB Equity Plan	€ 7.20	7.79	2	€ 6.34	7.6	2

Share-based payment transactions resulting in a cash payment give rise to a liability, which amounted to approximately € 8 million and € 6 million for the years ended December 31, 2020 and 2019, respectively.

The grant volume of outstanding share awards was approximately € 0.9 billion and € 1.4 billion as of December 31, 2020 and 2019, respectively. Thereof, approximately € 0.7 billion and € 1.2 billion had been recognized as compensation expense in the reporting year or prior to that. Hence, compensation expense for deferred share-based compensation not yet recognized amounted to approximately € 0.2 billion and € 0.3 billion as of December 31, 2020 and 2019, respectively.

DWS Share-Based Compensation Plans

The DWS Group made grants of share-based compensation under the DWS Equity Plan. This plan represents a contingent right to receive a cash payment by referencing to the value of DWS shares during a specified time period.

In September 2018 one-off IPO related awards under the DWS Stock Appreciation Rights (SAR) Plan were granted to all DWS employees. A limited number of DWS senior managers were granted a one-off IPO-related Performance Share Unit (PSU) under the DWS Equity Plan instead. For members of the Executive Board, one-off IPO-related awards under the DWS Equity Plan were granted in January 2019.

The DWS SAR Plan represents a contingent right to receive a cash payment equal to any appreciation (or gain) in the value of a set number of notional DWS shares over a fixed period of time. This award does not provide any entitlement to receive DWS shares, voting rights or associated dividends.

The DWS Equity Plan is a phantom share plan representing a contingent right to receive a cash payment by referencing to the value of DWS shares during a specified period of time.

The award recipient for any share-based compensation plan is not entitled to receive dividends during the vesting period of the award.

The share awards granted under the terms and conditions of any share-based compensation plan are forfeited fully or partly if the recipient voluntarily terminates employment before the end of the relevant vesting period (or the end of the retention

period for Upfront Awards). Vesting usually continues after termination of employment in cases such as redundancy or retirement.

The following table sets forth the basic terms of the DWS share-based plans:

Grant year(s)	Award Type	Vesting schedule	Eligibility
2019 / 2020 DWS Equity Plan	Annual Awards	1/3: 12 months[2] 1/3: 24 months[2] 1/3: 36 months[2]	Select employees as annual performance-based compensation
	Annual Awards (Senior Management)	1/5: 12 months[2] 1/5: 24 months[2] 1/5: 36 months[2] 1/5: 48 months[2] 1/5: 60 months[2]	Members of the Executive Board
	Annual Award - Upfront	Vesting immediately at grant[2]	Regulated employees
	Retention/New Hire	Individual specification	Select employees to attract and retain the best talent
	Performance Share Unit (PSU) Award (one-off IPO related award granted 1 January 2019)[1]	1/3: March 2022[2] 1/3: March 2023[2] 1/3: March 2024[2]	Members of the Executive Board
2018 DWS Equity Plan	Retention/New Hire	Individual specification	Select employees to attract and retain the best talent
	Performance Share Unit (PSU) Award (one-off IPO related award)[1]	1/3: March 2022[2] 1/3: March 2023[2] 1/3: March 2024[2]	Select Senior Managers
2018 DWS SAR Plan	SAR Award (one-off IPO related award)	For non-MRTs: June 1, 2021[4] For MRTs: March 1, 2023[2]	all DWS employees[3]

1 The award and the number of units is subject to the achievement of pre-defined targets (Average Net flows (NNA)2019-2020 and FY 2020 Adjusted CIR (Cost Income Ratio).
2 Depending on their individual regulatory status, a 6 months retention period (AIFMD/UCITS MRTs) or a 12-months retention period (InstVV MRTs) applies after vesting.
3 Unless the employee received PSU Award.
4 In 2020 two Early Exercise windows were offered to non-MRTs leading to accelerated vesting and exercise upon acceptance. For outstanding awards a 4-year exercise period applies following vesting / retention period.

The following table sets out the movements in share award units.

	DWS Equity Plan		DWS SAR Plan			
	2020	2019	2020		2019	
Share units (in thousands)	Number of Awards	Number of Awards	Number of Awards	Weighted-average exercise price	Number of Awards	Weighted-average exercise price
Outstanding at beginning of year	2,040	1,248	2,087[1]	€ 24.65	2,192	€ 24.65
Granted	805	1,003	0	-	0	-
Issued or Exercised	(368)	(186)	(766)	€ 24.65	0	-
Forfeited	(54)	(42)	(52)	€ 24.65	(110)	€ 24.65
Expired	0	0	0	-	0	-
Other Movements	(6)	16	(14)	€ 24.65	4	€ 24.65
Outstanding at end of year	2,418	2,040	1,254	€ 24.65	2,087[1]	€ 24.65
Of which, exercisable	0	0	0	-	0	-

1 DWS SAR Plan share Units outstanding at the end of year 2019 restated.

The following table sets out key information regarding awards granted, released and remaining in the year.

	2020			2019		
	Weighted average fair value per award granted in year	Weighted average share price at release/ exercise in year	Weighted average remaining contractual life in years	Weighted average fair value per award granted in the year	Weighted average share price at release/ exercise in year	Weighted average remaining contractual life in years
DWS Equity Plan	€ 29.07	€ 34.88	2	€ 20.98	€ 26.33	3
DWS SAR Plan	n/a	€ 31.95	5	n/a	n/a	6

The fair value of outstanding share-based awards was approximately € 85 million and € 64 million as of December 31, 2020 and 2019, respectively. Of the awards, approximately € 61 million and € 35 million has been recognised in the income statement up to the period ending 2020 and 2019 respectively, of which € 21 million and € 12 million relate to fully vested awards. Total unrecognised expense related to share-based plans was approximately € 25 million and € 29 million as of December 31, 2020 and 2019 respectively, dependent on future share price development.

The PSU Award has performance conditions which will determine the number of units which can ultimately vest under the award. These performance conditions are linked to the DWS Group strategy, specifically with regards to the target for net

inflows and the adjusted cost income ratio. Based on the outcome of the performance conditions, it was confirmed that 100 % of the units originally granted remain subject to continued vesting.

During the year, eligible employees were invited to exercise their SAR Awards as part of two distinct Early Exercise Offers in 2020. SAR Awards which were not exercised continue to be subject to the terms and conditions of the DWS SAR Plan Rules, including forfeiture provisions.

The fair value of the SAR Equity Plan awards is measured using the Black-Scholes formula. The liabilities incurred are re-measured at the end of each reporting period until settlement. The principal inputs being the market value on reporting date, discounted for any dividends foregone over the holding periods of the award, and adjustment for expected and actual levels of vesting which includes estimating the number of eligible employees leaving the Group and number of employees eligible for early retirement. The inputs used in the measurement of the fair values at grant date and measurement date of the SAR Equity Plan awards were as follows.

	Measurement date Dec 31, 2020	Measurement date Dec 31, 2019
Units (in thousands)	1,254	2,087
Fair value	€ 10.68	€ 8.19
Share price	€ 34.80	€ 31.70
Exercise price	€ 24.65	€ 24.65
Expected volatility (weighted-average)	33%	34%
Expected life (weighted-average) in years	5	6
Expected dividends (% of income)	65%	65%

Given the limited years of DWS share price volatility and the absence of implied volatility actively traded in the market, the expected volatility of the DWS share price has been based on an evaluation of the historical volatility for a comparable peer group over the preceding 5-year period. The expected dividend level is linked to the latest DWS Group communication.

Post-employment benefit plans

Nature of Plans

The Group sponsors a number of post-employment benefit plans on behalf of its employees, both defined contribution plans and defined benefit plans. The Group's plans are accounted for based on the nature and substance of the plan. Generally, for defined benefit plans the value of a participant's accrued benefit is based on each employee's remuneration and length of service; contributions to defined contribution plans are typically based on a percentage of each employee's remuneration. The rest of this note focuses predominantly on the Group's defined benefit plans.

The Group's defined benefit plans are primarily described on a geographical basis, reflecting differences in the nature and risks of benefits, as well as in the respective regulatory environments. In particular, the requirements set by local regulators can vary significantly and determine the design and financing of the benefit plans to a certain extent. Key information is also shown based on participant status, which provides a broad indication of the maturity of the Group's obligations.

					Dec 31, 2020
in € m.	Germany	UK	U.S.	Other	Total
Defined benefit obligation related to					
Active plan participants	4,950	706	236	648	6,540
Participants in deferred status	2,639	2,876	561	111	6,187
Participants in payment status	5,943	1,335	530	272	8,080
Total defined benefit obligation	13,532	4,917	1,327	1,031	20,807
Fair value of plan assets	12,658	5,705	1,107	987	20,457
Funding ratio (in %)	94 %	116 %	83 %[1]	96 %	98 %

[1] US Total defined benefit obligation is inclusive of the unfunded US Medicare Plan (€ 168 million) in addition to defined benefit pension plans. The US defined benefit pension funding ratio excluding Medicare is 96 %.

					Dec 31, 2019
in € m.	Germany	UK	U.S.	Other	Total
Defined benefit obligation related to					
Active plan participants	5,031	680	282	650	6,643
Participants in deferred status	2,483	2,569	593	119	5,764
Participants in payment status	5,756	1,438	543	274	8,011
Total defined benefit obligation	13,270	4,687	1,418	1,043	20,418
Fair value of plan assets	11,915	5,615	1,143	982	19,655
Funding ratio (in %)	90 %	120 %	81 %[1]	94 %	96 %

[1] US Total defined benefit obligation is inclusive of the unfunded US Medicare Plan (€ 181 million) in addition to defined benefit pension plans. The US defined benefit pension funding ratio excluding Medicare is 92 %.

The majority of the Group's defined benefit plan obligations relate to Germany, the United Kingdom and the United States. Within the other countries, the largest obligation relates to Switzerland. In Germany and some continental European countries, post-employment benefits are usually agreed on a collective basis with respective employee workers councils, unions or their equivalent. The Group's main pension plans are governed by boards of trustees, fiduciaries or their equivalent.

Post-employment benefits can form an important part of an employee's total remuneration. The Group's approach is that their design shall be attractive to employees in the respective market, but sustainable for the Group to provide over the longer term. At the same time, the Group tries to limit its risks related to provision of such benefits. Consequently the Group has moved to offer defined contribution plans in many locations over recent years.

In the past the Group typically offered pension plans based on final pay prior to retirement. These types of benefits still form a significant part of the pension obligations for participants in deferred and payment status. Currently, in Germany and the United States, the main defined benefit pension plans for active staff are cash account type plans where the Group credits an annual amount to individual accounts based on an employee's current compensation. Dependent on the plan rules, the accounts increase either at a fixed interest rate or participate in market movements of certain underlying investments to limit the investment risk for the Group. Sometimes, in particular in Germany, there is a guaranteed benefit amount within the plan rules, e.g. payment of at least the amounts contributed. Upon retirement, beneficiaries may usually opt for a lump sum, a fixed number of annual instalments or for conversion of the accumulated account balance into a life annuity. This conversion is often based on market conditions and mortality assumptions at retirement.

The Group also sponsors retirement and termination indemnity plans in several countries, as well as some post-employment medical plans for a number of current and retired employees, mainly in the United States. The post-employment medical plans typically pay fixed percentages of medical expenses of eligible retirees after a set deductible has been met. In the United States, once a retiree is eligible for Medicare, the Group contributes to a Health Reimbursement Account and the retiree is no longer eligible for the Group's medical program. The Group's total defined benefit obligation for post-employment medical plans was € 202 million and € 220 million at December 31, 2020 and December 31, 2019, respectively. In combination with the benefit structure, these plans represent limited risk for the Group, given the nature and size of the post-retirement medical plan liabilities of € 202 million versus the size of the Group's balance sheet at year end 2020.

The following amounts of expected benefit payments from the Group's defined benefit plans include benefits attributable to employees' past and estimated future service, and include both amounts paid from the Group's external pension trusts and paid directly by the Group in respect of unfunded plans.

in € m.	Germany	UK	U.S.	Other	Total
Actual benefit payments 2020	456	160	96	80	792
Benefits expected to be paid 2021	505	134	70	59	768
Benefits expected to be paid 2022	503	98	71	56	728
Benefits expected to be paid 2023	521	110	74	55	760
Benefits expected to be paid 2024	536	118	74	59	787
Benefits expected to be paid 2025	551	131	75	57	814
Benefits expected to be paid 2026 – 2030	2,949	762	376	281	4,368
Weighted average duration of defined benefit obligation (in years)	14	20	11	12	15

Multi-employer Plans

In Germany, the Group is a member of the BVV Versicherungsverein des Bankgewerbes a.G. (BVV) together with other financial institutions. The BVV offers retirement benefits to eligible employees in Germany as a complement to post-employment benefit promises of the Group. Both employers and employees contribute on a regular basis to the BVV. The BVV provides annuities of a fixed amount to individuals on retirement and increases these fixed amounts if surplus assets arise within the plan. According to legislation in Germany, the employer is ultimately liable for providing the benefits to its employees. An increase in benefits may also arise due to additional obligations to retirees for the effects of inflation. BVV is a multi-employer defined benefit plan. However, in line with industry practice, the Group accounts for it as a defined contribution plan since insufficient information is available to identify assets and liabilities relating to the Group's current and former employees, primarily because the BVV does not fully allocate plan assets to beneficiaries nor to member companies.

Governance and Risk

The Group maintains a Pensions Committee to oversee its pension and related risks on a global basis. This Committee meets quarterly and reports directly to the Senior Executive Compensation Committee.

Within this context, the Group develops and maintains guidelines for governance and risk management, including funding, asset allocation and actuarial assumption setting. In this regard, risk management means the management and control of risks for the Group related to market developments (e.g., interest rate, credit spread, price inflation), asset investment, regulatory or legislative requirements, as well as monitoring demographic changes (e.g., longevity). Especially during and after acquisitions or changes in the external environment (e.g., legislation, taxation), topics such as the general plan design or potential plan amendments are considered. Any plan changes follow a process requiring approval by Group Human Resources. To the extent that pension plans are funded, the assets held mitigate some of the liability risks, but introduce investment risk.

In the Group's key pension countries, the Group's largest post-employment benefit plan risk exposures relate to potential changes in credit spreads, interest rates, price inflation and longevity, although these have been partially mitigated through the investment strategy adopted.

Overall, the Group seeks to minimize the impact of pensions on the Group's financial position from market movements, subject to balancing the trade-offs involved in financing post-employment benefits, regulatory capital and constraints from local funding or accounting requirements. The Group measures its pension risk exposures on a regular basis using specific metrics developed by the Group for this purpose.

Funding

The Group maintains various external pension trusts to fund the majority of its defined benefit plan obligations. The Group's funding principle is to maintain funding of the defined benefit obligation by plan assets within a range of 90 % to 100 % of the obligation, subject to meeting any local statutory requirements. The Group has also determined that certain plans should remain unfunded, although their funding approach is subject to periodic review, e.g. when local regulations or practices change. Obligations for the Group's unfunded plans are accrued on the balance sheet.

For most of the externally funded defined benefit plans there are local minimum funding requirements. The Group can decide on any additional plan contributions, with reference to the Group's funding principle. There are some locations, e.g. the United Kingdom, where the trustees and the Bank jointly agree contribution levels. In most countries the Group expects to receive an economic benefit from any plan surpluses of plan assets compared to defined benefit obligations, typically by way of reduced future contributions. Given the relatively high funding level and the investment strategy adopted in the Group's key funded defined benefit plans, any minimum funding requirements that may apply are not expected to place the Group under any material adverse cash strain in the short term. With reference to the Group's funding principle, the Group considers not re-claiming benefits paid from the Group's assets as an equivalent to making cash contributions into the external pension trusts during the year.

For post-retirement medical plans, the Group accrues for obligations over the period of employment and pays the benefits from Group assets when the benefits become due.

Actuarial Methodology and Assumptions

December 31 is the measurement date for all plans. All plans are valued by independent qualified actuaries using the projected unit credit method. A Group policy provides guidance to ensure consistency globally on setting actuarial assumptions which are finally determined by the Group's Pensions Committee. Senior management of the Group is regularly informed of movements and changes in key actuarial assumptions.

The key actuarial assumptions applied in determining the defined benefit obligations at December 31 are presented below in the form of weighted averages.

				Dec 31, 2020				Dec 31, 2019
	Germany	UK	U.S.[1]	Other	Germany	UK	U.S.[1]	Other
Discount rate (in %)	0.60 %	1.26 %	2.31 %	1.51 %	0.93 %	1.91 %	3.16 %	1.92 %
Rate of price inflation (in %)	1.29 %	3.22 %	2.10 %	1.54 %	1.40 %	3.29 %	2.20 %	1.70 %
Rate of nominal increase in future compensation levels (in %)	1.79 %	3.72 %	2.20 %	2.57 %	1.90 %	3.79 %	2.30 %	2.71 %
Rate of nominal increase for pensions in payment (in %)	1.19 %	3.08 %	2.10 %	0.86 %	1.30 %	3.19 %	2.20 %	0.91 %
Assumed life expectancy at age 65								
For a male aged 65 at measurement date	21.2	23.5	21.8	22.0	21.1	23.4	22.0	21.9
For a female aged 65 at measurement date	23.5	25.0	23.2	24.2	23.4	24.9	23.4	24.1
For a male aged 45 at measurement date	22.5	24.5	23.2	23.3	22.5	24.4	23.5	23.3
For a female aged 45 at measurement date	24.6	26.4	24.5	25.6	24.5	26.2	24.9	25.5
Mortality tables applied	Modified Richttafeln Heubeck 2018G	SAPS (S3) Very Light with CMI 2019 projections	PRI-2012 with MP-2020 projection	Country specific tables	Modified Richttafeln Heubeck 2018G	SAPS (S3) Light with CMI 2018 projections	PRI-2012 with MP-2019 projection	Country specific tables

[1] Cash balance interest crediting rate in line with the 30-year US government bond yield.

For the Group’s most significant pension plans in the key countries, the discount rate used at each measurement date is set based on a high quality corporate bond yield curve, which is derived using a bond universe sourced from reputable third-party index data providers and rating agencies, and reflects the timing, amount and currency of the future expected benefit payments for the respective plan. A review of the Eurozone discount rate derivation was instigated in March 2020 following unprecedented market turmoil, which resulted in several refinements to the methodology being implemented in 2020, initially in Q1 and more fundamentally in Q4 with the introduction of an internally produced DB Proprietary curve, which was employed as the basis for discounting the defined benefit obligation from December 31, 2020. Compared to the curve deployed at December 31, 2019, the DB Proprietary curve results in a defined benefit obligation that is €[20]m higher, with the impact recognised through Other Comprehensive Income. The defined benefit obligation was €[435] million lower as at December 31, 2020 compared to curve utilised as at June 30, 2020. Due to the change in discount rate methodology and other effects, the Group’s net pension liability for the German pension plans was reduced by € 481 million from € 1,355 million as of December 31, 2019 to € 874 million as of December 31, 2020.

The price inflation assumptions in the Eurozone and the United Kingdom are set with reference to market measures of inflation based on inflation swap rates in those markets at each measurement date. For other countries, the price inflation assumptions are typically based on long term forecasts by Consensus Economics Inc.

The assumptions for the increases in future compensation levels and for increases to pensions in payment are developed separately for each plan, where relevant. Each is set based on the price inflation assumption and reflecting the Group’s reward structure or policies in each market, as well as relevant local statutory and plan-specific requirements.

Among other assumptions, mortality assumptions can be significant in measuring the Group’s obligations under its defined benefit plans. These assumptions have been set in accordance with current best estimate in the respective countries. Future potential improvements in longevity have been considered and included where appropriate. Due to the long term nature of mortality assumptions and lack of clarity over the longer term impacts of the pandemic on health outcomes, there has been no specific allowance for the impact of COVID19 in any region, other than for recent experience captured as part of the annual valuation process.

In the financial year ended December 31, 2020, the Group recognized a € 48 million of past service credit in connection with the inclusion of a lump-sum payment option to one of the German retirement benefit arrangements primarily in the Private Bank division. This reduction in defined benefit plan obligations was reported as part of Compensation and benefits in the Consolidated Statement of Income.

Reconciliation in Movement of Liabilities and Assets – Impact on Financial Statements

in € m.	Germany	UK	U.S.	Other	2020 Total
Change in the present value of the defined benefit obligation:					
Balance, beginning of year	13,270	4,687	1,418	1,043	20,418
Defined benefit cost recognized in Profit & Loss					
Current service cost	200	28	12	42	282
Interest cost	122	85	43	18	268
Past service cost and gain or loss arising from settlements	(22)[1]	11	0	0	(11)
Defined benefit cost recognized in Other Comprehensive Income					
Actuarial gain or loss arising from changes in financial assumptions	536	600	75	39	1,250
Actuarial gain or loss arising from changes in demographic assumptions	110	(11)	(9)	2	92
Actuarial gain or loss arising from experience	(73)	(68)	3	(14)	(152)
Cash flow and other changes					
Contributions by plan participants	4	0	0	15	19
Benefits paid	(456)	(160)	(96)	(80)	(792)
Payments in respect to settlements	0	0	0	0	0
Acquisitions/Divestitures	(158)[2]	0	0	0	(158)
Exchange rate changes	0	(255)	(119)	(36)	(410)
Other	(1)	0	0	2	1
Balance, end of year	13,532	4,917	1,327	1,031	20,807
thereof:					
Unfunded	0	15	195	105	315
Funded	13,532	4,902	1,132	926	20,492
Change in fair value of plan assets:					
Balance, beginning of year	11,915	5,615	1,143	982	19,655
Defined benefit cost recognized in Profit & Loss					
Interest income	111	101	34	17	263
Defined benefit cost recognized in Other Comprehensive Income					
Return from plan assets less interest income	777	456	60	42	1,335
Cash flow and other changes					
Contributions by plan participants	4	0	0	15	19
Contributions by the employer	444	0	56	28	528
Benefits paid[3]	(456)	(159)	(84)	(65)	(764)
Payments in respect to settlements	0	0	0	0	0
Acquisitions/Divestitures	(137)[2]	0	0	0	(137)
Exchange rate changes	0	(303)	(99)	(31)	(433)
Other	0	0	0	0	0
Plan administration costs	0	(5)	(3)	(1)	(9)
Balance, end of year	12,658	5,705	1,107	987	20,457
Funded status, end of year	(874)	788	(220)	(44)	(350)
Change in irrecoverable surplus (asset ceiling)					
Balance, beginning of year	0	0	0	(40)	(40)
Interest cost	0	0	0	0	0
Changes in irrecoverable surplus	0	0	0	2	2
Exchange rate changes	0	0	0	0	0
Balance, end of year	0	0	0	(38)	(38)
Net asset (liability) recognized	(874)	788	(220)	(82)	(388)

[1] Contains a past service credit of € 48 million due to the introduction of a capital option for a specific plan sponsored by former Postbank.
[2] Postbank Systems AG.
[3] For funded plans only.
[4] Thereof € 877 million recognized in Other assets and € 1,265 million in Other liabilities.

in € m.	Germany	UK	U.S.	Other	2019 Total
Change in the present value of the defined benefit obligation:					
Balance, beginning of year	11,953	3,868	1,337	962	18,120
Defined benefit cost recognized in Profit & Loss					
Current service cost	192	26	14	44	276
Interest cost	201	106	56	26	389
Past service cost and gain or loss arising from settlements	19	3	0	(12)	10
Defined benefit cost recognized in Other Comprehensive Income					
Actuarial gain or loss arising from changes in financial assumptions	1,179	582	112	67	1,940
Actuarial gain or loss arising from changes in demographic assumptions	125[1]	(105)	(11)	(1)	8
Actuarial gain or loss arising from experience	43	113	(8)	(5)	143
Cash flow and other changes					
Contributions by plan participants	4	0	0	17	21
Benefits paid[2]	(446)	(154)	(109)	(73)	(782)
Payments in respect to settlements	0	0	0	(11)	(11)
Acquisitions/Divestitures	0	0	0	0	0
Exchange rate changes	0	248	27	24	299
Other	0	0	0	5	5
Balance, end of year	13,270	4,687	1,418	1,043	20,418
thereof:					
Unfunded	0	16	210	121	347
Funded	13,270	4,671	1,208	922	20,071
Change in fair value of plan assets:					
Balance, beginning of year	10,877	4,884	1,074	892	17,727
Defined benefit cost recognized in Profit & Loss					
Interest income	185	134	44	23	386
Defined benefit cost recognized in Other Comprehensive Income					
Return from plan assets less interest income	137	448	80	54	719
Cash flow and other changes					
Contributions by plan participants	4	0	0	18	22
Contributions by the employer	1,158	0	22	25	1,205
Benefits paid[1]	(446)	(153)	(96)	(56)	(751)
Payments in respect to settlements	0	0	0	0	0
Acquisitions/Divestitures	0	0	0	0	0
Exchange rate changes	0	304	22	27	353
Other	0	0	0	0	0
Plan administration costs	0	(2)	(3)	(1)	(6)
Balance, end of year	11,915	5,615	1,143	982	19,655
Funded status, end of year	(1,355)	928	(275)	(61)	(763)
Change in irrecoverable surplus (asset ceiling)					
Balance, beginning of year	0	0	0	(25)	(25)
Interest cost	0	0	0	0	0
Changes in irrecoverable surplus	0	0	0	(14)	(14)
Exchange rate changes	0	0	0	(1)	(1)
Balance, end of year	0	0	0	(40)	(40)
Net asset (liability) recognized	(1,355)	928	(275)	(101)	(803)[3]

[1] Resulting predominantly from updated mortality assumptions (modified Heubeck 2018G instead of Heubeck 2018G).
[2] For funded plans only.
[3] Thereof € 1,011 million recognized in Other assets and € 1,814 million in Other liabilities.

There are no reimbursement rights for the Group.

Investment Strategy

The Group’s investment objective is to protect the Group from adverse impacts of its defined benefit pension plans on key financial metrics. In the past, the primary focus has been on protecting the plans’ IFRS funded status in the case of adverse market scenarios. While there has been a shift in the investment strategy in selected markets to balance competing key financial metrics the Group reverted to the IFRS driven investment strategy in 2019. Investment managers manage pension assets in line with investment mandates or guidelines as agreed with the pension plans’ trustees and investment committees.

For key defined benefit plans for which the Bank aims to protect the IFRS funded status, the Group applies a liability driven investment (LDI) approach. Risks from mismatches between fluctuations in the present value of the defined benefit obligations and plan assets due to capital market movements are minimized, subject to balancing relevant trade-offs. This is achieved by allocating plan assets closely to the market risk factor exposures of the pension liability to interest rates, credit spreads and inflation. Thereby, plan assets broadly reflect the underlying risk profile and currency of the pension obligations.

Where the desired hedging level for market risks cannot be achieved with physical instruments (i.e., corporate and government bonds), derivatives are employed. Derivative overlays mainly include interest rate, inflation swaps and credit default swaps. Other instruments are also used, such as interest rate futures and options. In practice, a completely hedged approach is impractical, for instance because of insufficient market depth for ultra-long-term corporate bonds, as well as liquidity and cost considerations. Therefore, plan assets contain further asset categories to create long-term return enhancement and diversification benefits such as equity, real estate, high yield bonds or emerging markets bonds.

In 2020, the group entered into two buy-in transactions with a third party insurer to de-risk €1.2 billion of exposure to the UK defined benefit pension schemes funded from existing assets, with no additional employer contribution required. The recognition of the insurance policies as qualifying plan assets in Q1 and Q4 negatively impacted Other Comprehensive Income in the Group's financial statement by approximately €115 million and €60 million, respectively.

Plan asset allocation to key asset classes

The following table shows the asset allocation of the Group's funded defined benefit plans to key asset classes, i.e. exposures include physical securities in discretely managed portfolios and underlying asset allocations of any commingled funds used to invest plan assets.

Asset amounts in the following table include both "quoted" (i.e., Level 1 assets in accordance with IFRS 13 – amounts invested in markets where the fair value can be determined directly from prices which are quoted in active, liquid markets) and "other" (i.e., Level 2 and 3 assets in accordance with IFRS 13) assets.

					Dec 31, 2020					Dec 31, 2019
in € m.	Germany	UK	U.S.	Other	Total	Germany	UK	U.S.	Other	Total
Cash and cash equivalents	290	504	67	57	918	340	292	57	64	753
Equity instruments[1]	899	609	126	57	1,691	875	643	116	53	1,687
Investment-grade bonds[2]										
Government	2,829	1,048[3]	422	167	4,466	2,508	1,633	432	202	4,775
Non-government bonds	6,144	2,034[3]	387	258	8,823	5,921	2,847	425	216	9,409
Non-investment-grade bonds										
Government	99	2	1	18	120	125	7	1	16	149
Non-government bonds	236	107	37	28	408	259	124	17	17	417
Securitized and other Debt Investments	1	122	73	0	196	1	157	67	1	226
Insurance	1	1,248[3]	0	13	1,262	0	0	0	15	15
Alternatives										
Real estate	443	37	0	79	559	361	42	0	67	470
Commodities	24	0	0	0	24	0	0	0	0	0
Private equity	72	0	0	23	95	63	0	0	25	88
Other[4]	1,406	0	0	271	1,677	1,579	0	0	284	1,863
Derivatives (Market Value)										
Interest rate	78	(18)	(3)	0	57	(263)	35	10	7	(211)
Credit	115	(107)	15	1	24	110	1	19	1	131
Inflation	0	(109)	0	11	(98)	26	(126)	0	11	(89)
Foreign exchange	20	3	0	4	27	6	4	0	3	13
Other	1	225	(18)	0	208	4	(44)	(1)	0	(41)
Total fair value of plan assets	**12,658**	**5,705**	**1,107**	**987**	**20,457**	11,915	5,615	1,143	982	19,655

[1] Allocation of equity exposure is broadly in line with the typical index in the respective market, e.g. the equity portfolio's benchmark of the UK retirement benefit plans is the MSCI All Countries World Index.
[2] Investment-grade means BBB and above. Average credit rating exposure for the Group's main plans is around A.
[3] The movement from 2019 to 2020 is the result of the de-risking activity for the UK pension plans to reduce impact from the defined benefit plan exposure for the Group.
[4] Amongst others this position contains commingled funds which could not be segregated into the other asset categories.

The following table sets out the Group's funded defined benefit plan assets only invested in "quoted" assets, i.e. Level 1 assets in accordance with IFRS 13.

in € m.	Germany	UK	U.S.	Other	Total	Germany	UK	U.S.	Other	Total
					Dec 31, 2020					Dec 31, 2019
Cash and cash equivalents	226	504	63	26	819	339	292	54	30	715
Equity instruments[1]	760	609	126	45	1,540	758	643	116	42	1,559
Investment-grade bonds[2]										
Government	1,107	989[3]	417	56	2,569	1,115	1,618	426	36	3,195
Non-government bonds	0	0	0	0	0	0	0	0	0	0
Non-investment-grade bonds										
Government	0	0	0	5	5	0	0	0	3	3
Non-government bonds	0	0	0	0	0	0	0	0	0	0
Securitized and other Debt Investments	0	0	0	0	0	0	0	0	0	0
Insurance	0	0	0	0	0	0	0	0	0	0
Alternatives										
Real estate	0	0	0	0	0	0	0	0	0	0
Commodities	0	0	0	0	0	0	0	0	0	0
Private equity	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0
Derivatives (Market Value)										
Interest rate	0	1	(15)	0	(14)	0	34	(19)	8	23
Credit	0	(107)	0	0	(107)	0	1	0	0	1
Inflation	0	0	0	11	11	0	(125)	0	10	(115)
Foreign exchange	0	4	0	0	4	0	4	0	0	4
Other	1	0	0	0	1	4	0	0	0	4
Total fair value of quoted plan assets	**2,094**	**2,000**	**591**	**143**	**4,828**	2,216	2,467	577	129	5,389

[1] Allocation of equity exposure is broadly in line with the typical index in the respective market, e.g. the equity portfolio's benchmark of the UK retirement benefit plans is the MSCI All Countries World Index.
[2] Investment-grade means BBB and above. Average credit rating exposure for the Group's main plans is around A.
[3] The movement from 2019 to 2020 is the result of the de-risking activity for the UK pension plans to reduce impact from the defined benefit plan exposure for the Group.

The following tables show the asset allocation of the "quoted" and "other" defined benefit plan assets by key geography in which they are invested.

in € m.	Germany	United Kingdom	United States	Other Eurozone	Other developed countries	Emerging markets	Total
							Dec 31, 2020
Cash and cash equivalents	(7)	396	170	308	20	31	918
Equity instruments	209	70	703	270	336	103	1,691
Government bonds (investment-grade and above)	1,018	979	470	1,150	292	557	4,466
Government bonds (non-investment-grade)	2	0	0	7	11	100	120
Non-government bonds (investment-grade and above)	639	1,601	2,685	3,265[1]	554	79	8,823
Non-government bonds (non-investment-grade)	1	52	46	292	8	8	407
Securitized and other Debt Investments	1	99	82	12	0	2	196
Subtotal	1,863	3,197	4,156	5,304	1,221	880	16,621
Share (in %)	11%	19%	25%	32%	7%	5%	100%
Other asset categories							3,836[2]
Fair value of plan assets							20,457

[1] Majority of this amount relates to bonds of French, Dutch and Italian corporates.
[2] The movement from 2019 to 2020 is the result of the de-risking activity for the UK pension plans to reduce impact from the defined benefit plan exposure for the Group.

							Dec 31, 2019
in € m.	Germany	United Kingdom	United States	Other Eurozone	Other developed countries	Emerging markets	Total
Cash and cash equivalents	5	224	122	342	27	33	753
Equity instruments	186	101	703	285	291	121	1,687
Government bonds (investment-grade and above)	868	1,477	550	1,003	329	548	4,775
Government bonds (non-investment-grade)	0	6	1	7	13	122	149
Non-government bonds (investment-grade and above)	738	2,110	2,662	3,201[1]	612	86	9,409
Non-government bonds (non-investment-grade)	4	45	24	297	41	6	417
Securitized and other Debt Investments	1	98	104	14	6	3	226
Subtotal	1,802	4,061	4,166	5,149	1,319	919	17,416
Share (in %)	10%	23%	24%	30%	8%	5%	100%
Other asset categories							2,239
Fair value of plan assets							19,655

[1] Majority of this amount relates to bonds of French, Dutch and Italian corporate bonds.

Plan assets include derivative transactions with Group entities with a positive market value of around € 210 million at December 31, 2020 and a negative market value of around € 252 million December 31, 2019, respectively. There is neither a material amount of securities issued by the Group nor other claims on Group assets included in the fair value of plan assets. The plan assets do not include any real estate which is used by the Group.

In addition, the Group estimates and allows for uncertain income tax positions which may have an impact on the Group’s plan assets. Significant judgment is required in making these estimates and the Group’s final net liabilities may ultimately be materially different.

We are currently involved in a legal dispute with the German tax authorities in relation to the tax treatment of certain income received with respect to our pension plan assets. The proceeding is pending in front of the German supreme fiscal court (Bundesfinanzhof). A court hearing is scheduled for March 15, 2021. Should the court ultimately rule in favor of the German tax authorities, the outcome could have a material effect on our comprehensive income and financial condition.

Key Risk Sensitivities

The Group’s defined benefit obligations are sensitive to changes in capital market conditions and actuarial assumptions. Sensitivities to capital market movements and key assumption changes are presented in the following table. Each market risk factor or assumption is changed in isolation. Sensitivities of the defined benefit obligations are approximated using geometric extrapolation methods based on plan durations for the respective assumption. Duration is a risk measure that indicates the broad sensitivity of the obligations to a change in an underlying assumption and provides a reasonable approximation for small to moderate changes in those assumptions.

For example, the interest rate duration is derived from the change in the defined benefit obligation to a change in the interest rate based on information provided by the local actuaries of the respective plans. The resulting duration is used to estimate the remeasurement liability loss or gain from changes in the interest rate. For other assumptions, a similar approach is used to derive the respective sensitivity results.

For defined benefit pension plans, changes in capital market conditions will impact the plan obligations via actuarial assumptions – mainly interest rate and price inflation rate – as well as the plan assets. Where the Group applies a LDI approach, the Bank’s overall exposure to changes is reduced. Consequently, to aid understanding of the Group’s risk exposures related to key capital market movements, the net impact of the change in the defined benefit obligations and plan assets due to a change of the related market risk factor or underlying actuarial assumption is shown; for sensitivities to changes in actuarial assumptions that do not impact the plan assets, only the impact on the defined benefit obligations is shown.

Asset-related sensitivities are derived for the Group’s major plans by using risk sensitivity factors determined by the Group’s Market Risk Management function. These sensitivities are calculated based on information provided by the plans’ investment managers and extrapolated linearly to reflect the approximate change of the plan assets’ market value in case of a change in the underlying risk factor.

The sensitivities illustrate plausible variations over time in capital market movements and key actuarial assumptions. The Group is not in a position to provide a view on the likelihood of these capital market or assumption changes. While these sensitivities illustrate the overall impact on the funded status of the changes shown, the significance of the impact and the range of reasonable possible alternative assumptions may differ between the different plans that comprise the aggregated results. Even though plan assets and plan obligations are sensitive to similar risk factors, actual changes in plan assets and obligations may not fully offset each other due to imperfect correlations between market risk factors and actuarial assumptions. Caution should be used when extrapolating these sensitivities due to non-linear effects that changes in capital market conditions and key actuarial assumptions may have on the overall funded status. Any management actions that may be taken to mitigate the inherent risks in the post-employment defined benefit plans are not reflected in these sensitivities.

				Dec 31, 2020				Dec 31, 2019
in € m.	Germany	UK	U.S.	Other	Germany	UK	U.S.	Other
Interest rate (–50 bp):								
(Increase) in DBO	(970)	(520)	(45)	(60)	(970)	(500)	(45)	(60)
Expected increase in plan assets[1]	895	400	35	25	875	530	30	25
Expected net impact on funded status (de-) increase	**(75)**	**(120)**	**(10)**	**(35)**	(95)	30	(15)	(35)
Interest rate (+50 bp):								
Decrease in DBO	900	470	40	55	905	450	30	55
Expected (decrease) in plan assets[1]	(895)	(400)	(35)	(25)	(875)	(530)	(30)	(25)
Expected net impact on funded status (de-) increase	**5**	**70**	**5**	**30**	30	(80)	0	30
Credit spread (–50 bp):								
(Increase) in DBO	(970)	(520)	(75)	(65)	(970)	(500)	(80)	(65)
Expected increase in plan assets[1]	760	120	15	10	620	145	15	10
Expected net impact on funded status (de-) increase	**(210)**	**(400)**	**(60)**	**(55)**	(350)	(355)	(65)	(55)
Credit spread (+50 bp):								
Decrease in DBO	900	470	70	60	905	450	75	60
Expected (decrease) in plan assets[1]	(760)	(120)	(15)	(10)	(620)	(145)	(15)	(10)
Expected net impact on funded status (de-) increase	**140**	**350**	**55**	**50**	285	305	60	50
Rate of price inflation (–50 bp):[2]								
Decrease in DBO	320	390	0	20	335	360	0	20
Expected (decrease) in plan assets[1]	(235)	(255)	0	(10)	(185)	(305)	0	(10)
Expected net impact on funded status (de-) increase	**85**	**135**	**0**	**10**	150	55	0	10
Rate of price inflation (+50 bp):[2]								
(Increase) in DBO	(330)	(425)	0	(20)	(345)	(385)	0	(20)
Expected increase in plan assets[1]	235	255	0	10	185	305	0	10
Expected net impact on funded status (de-) increase	**(95)**	**(170)**	**0**	**(10)**	(160)	(80)	0	(10)
Rate of real increase in future compensation levels (–50 bp):								
Decrease in DBO, net impact on funded status	60	10	0	15	60	15	0	10
Rate of real increase in future compensation levels (+50 bp):								
(Increase) in DBO, net impact on funded status	(60)	(10)	0	(15)	(60)	(15)	0	(15)
Longevity improvements by 10 %:[3]								
(Increase) in DBO, net impact on funded status	(325)	(160)	(30)	(15)	(320)	(145)	(30)	(15)

[1] Expected changes in the fair value of plan assets contain the simulated impact from the biggest plans in Germany, the UK, the U.S., Channel Islands, Switzerland and Belgium which cover over 99 % of the total fair value of plan assets. The fair value of plan assets for other plans is assumed to be unchanged for this presentation.
[2] Incorporates sensitivity to changes in pension benefits to the extent linked to the price inflation assumption.
[3] Estimated to be equivalent to an increase of around 1 year in overall life expectancy.

Expected cash flows

The following table shows expected cash flows for post-employment benefits in 2021, including contributions to the Group's external pension trusts in respect of funded plans, direct payment to beneficiaries in respect of unfunded plans, as well as contributions to defined contribution plans.

in € m.	2021 Total
Expected contributions to	
Defined benefit plan assets	285
BVV	60
Other defined contribution plans	245
Expected benefit payments for unfunded defined benefit plans	25
Expected total cash flow related to post-employment benefits	615

Expense of employee benefits

The following table presents a breakdown of specific expenses according to the requirements of IAS 19 and IFRS 2.

in € m.	2020	2019	2018
Expenses for defined benefit plans:			
Service cost[1]	246	272	259
Net interest cost (income)	5	2	4
Total expenses defined benefit plans	251	274	263
Expenses for defined contribution plans:			
BVV	60	63	62
Other defined contribution plans	243	244	246
Total expenses for defined contribution plans	303	307	308
Total expenses for post-employment benefit plans	554	581	571
Employer contributions to state-mandated pension plans			
Pensions related payments social security in Germany	233	231	236
Contributions to pension fund for Postbank´s postal civil servants	79	85	88
Further pension related state-mandated benefit plans	245	249	246
Total employer contributions to state-mandated benefit plans	557	565	570
Expenses for share-based payments:			
Expenses for share-based payments, equity settled[2]	318	549	560
Expenses for share-based payments, cash settled[2]	49	39	1
Expenses for cash retention plans[2]	329	516	481
Expenses for severance payments[3]	184	92	137

[1] Severance related items under Service Costs were reclassified to Expenses for Severance payments. Therefore previous periods were adjusted as well.
[2] Including expenses for new hire awards and the acceleration of expenses not yet amortized due to the discontinuation of employment including those amounts which are recognized as part of the Group's restructuring expenses.
[3] Excluding the acceleration of expenses for deferred compensation awards not yet amortized. Severance related items under Service Costs were reclassified to Expense for Severance payments. Prior year numbers have been restated.

34 – Income taxes

in € m.	2020	2019	2018
Current tax expense (benefit):			
Tax expense (benefit) for current year	739	757	733
Adjustments for prior years	(46)	5	(20)
Total current tax expense (benefit)	**693**	762	713
Deferred tax expense (benefit):			
Origination and reversal of temporary differences, unused tax losses and tax credits	(224)	(71)	316
Effect of changes in tax law and/or tax rate	(11)	(9)	(6)
Adjustments for prior years	(67)	1,948	(34)
Total deferred tax expense (benefit)	**(302)**	1,868	276
Total income tax expense (benefit)	**391**	2,630	989

Total deferred tax benefit includes expenses from previously unrecognized tax losses (tax credits/deductible temporary differences) and the reversal of previous write-downs of deferred tax assets and expenses arising from write-downs of deferred tax assets, which decreased the deferred tax benefit by € 96 million in 2020, and increased the deferred tax expense by € 2,785 million in 2019, and by € 253 million in 2018.

Difference between applying German statutory (domestic) income tax rate and actual income tax expense/(benefit)

in € m.	2020	2019	2018
Expected tax expense (benefit) at domestic income tax rate of 31.3% (31.3% for 2019 and 31.3% for 2018)	**314**	(825)	416
Foreign rate differential	(39)	170	8
Tax-exempt gains on securities and other income	(181)	(191)	(209)
Loss (income) on equity method investments	(18)	(19)	(19)
Nondeductible expenses	293	326	340
Impairments of goodwill	0	269	0
Changes in recognition and measurement of deferred tax assets[1]	96	2,785	253
Effect of changes in tax law and/or tax rate	(11)	(9)	(6)
Effect related to share-based payments	(29)	54	133
Other[1]	(34)	70	73
Actual income tax expense (benefit)	**391**	2,630	989

[1] Current and deferred tax expense/(benefit) relating to prior years are mainly reflected in the line items “Changes in recognition and measurement of deferred tax assets” and “Other”.

The Group is under continuous examinations by tax authorities in various jurisdictions. “Other” in the preceding table includes the effects of these examinations by the tax authorities.

The domestic income tax rate, including corporate tax, solidarity surcharge, and trade tax, used for calculating deferred tax assets and liabilities was 31.3 % for 2020, 2019 and 2018.

Income taxes charged or credited to equity (other comprehensive income/additional paid in capital)

in € m.	2020	2019	2018
Actuarial gains/losses related to defined benefit plans	**76**	402	18
Net fair value gains (losses) attributable to credit risk related to financial liabilities designated as at fair value through profit or loss	**6**	1	(8)
Financial assets available for sale:			
Unrealized net gains/losses arising during the period	0	0	0
Net gains/losses reclassified to profit or loss	0	0	0
Financial assets mandatory at fair value through other comprehensive income:			
Unrealized net gains/losses arising during the period	(204)	(42)	48
Realized net gains/losses arising during the period (reclassified to profit or loss)	84	71	86
Derivatives hedging variability of cash flows:			
Unrealized net gains/losses arising during the period	4	1	1
Net gains/losses reclassified to profit or loss	(1)	1	0
Other equity movement:			
Unrealized net gains/losses arising during the period	(19)	162	91
Net gains/losses reclassified to profit or loss	14	0	2
Income taxes (charged) credited to other comprehensive income	**(40)**	596	238
Other income taxes (charged) credited to equity	**11**	(11)	1

Major components of the Group's gross deferred tax assets and liabilities

in € m.	Dec 31, 2020	Dec 31, 2019
Deferred tax assets:		
Unused tax losses	1,476	1,307
Unused tax credits	0	1
Deductible temporary differences:		
Trading activities, including derivatives	2,905	4,321
Employee benefits, including equity settled share based payments	2,457	2,507
Accrued interest expense	1,122	1,148
Loans and borrowings, including allowance for loans	1,069	878
Leases	806	614
Intangible Assets	214	236
Fair value OCI (IFRS 9)	1	21
Other assets	560	879
Other provisions	122	126
Other liabilities	4	6
Total deferred tax assets pre offsetting	**10,736**	12,044
Deferred tax liabilities:		
Taxable temporary differences:		
Trading activities, including derivatives	2,658	3,937
Employee benefits, including equity settled share based payments	183	265
Loans and borrowings, including allowance for loans	501	785
Leases	712	537
Intangible Assets	560	554
Fair value OCI (IFRS 9)	144	51
Other assets	350	347
Other provisions	79	87
Other liabilities	47	40
Total deferred tax liabilities pre offsetting	**5,234**	6,603

Deferred tax assets and liabilities, after offsetting

in € m.	Dec 31, 2020	Dec 31, 2019
Presented as deferred tax assets	6,063	5,986
Presented as deferred tax liabilities	561	545
Net deferred tax assets	**5,502**	5,441

The change in the balance of deferred tax assets and deferred tax liabilities might not equal the deferred tax expense/(benefit). In general, this is due to (1) deferred taxes that are booked directly to equity, (2) the effects of exchange rate changes on tax assets and liabilities denominated in currencies other than euro, (3) the acquisition and disposal of entities as part of ordinary activities and (4) the reclassification of deferred tax assets and liabilities which are presented on the face of the balance sheet as components of other assets and liabilities.

Items for which no deferred tax assets were recognized

in € m.	Dec 31, 2020[1]	Dec 31, 2019[1]
Deductible temporary differences	**(2,204)**	(3,046)
Not expiring	(9,982)	(9,629)
Expiring in subsequent period	(138)	(192)
Expiring after subsequent period	(4,702)	(4,214)
Unused tax losses	**(14,822)**	(14,035)
Expiring after subsequent period	(56)	(95)
Unused tax credits	**(58)**	(96)

[1] Amounts in the table refer to deductible temporary differences, unused tax losses and tax credits for federal income tax purposes.

Deferred tax assets were not recognized on these items because it is not probable that future taxable profit will be available against which the unused tax losses, unused tax credits and deductible temporary differences can be utilized.

As of December 31, 2020 and December 31, 2019, the Group recognized deferred tax assets of € 5.1 billion and € 3.2 billion, respectively, that exceeded deferred tax liabilities in entities which have suffered a loss in either the current or preceding period. This is based on management's assessment that it is probable that the respective entities will have taxable profits against which the unused tax losses, unused tax credits and deductible temporary differences can be utilized. Generally, in determining the amounts of deferred tax assets to be recognized, management uses historical profitability information and, if relevant, forecasted operating results, based upon approved business plans, including a review of the eligible carry-forward periods, tax planning opportunities and other relevant considerations.

As of December 31, 2020 and December 31, 2019, the Group had temporary differences associated with the Group's parent company's investments in subsidiaries, branches and associates and interests in joint ventures of € 24 million and € 20 million respectively, in respect of which no deferred tax liabilities were recognized.

35 – Derivatives

Derivative financial instruments and hedging activities

Derivative contracts used by the Group include swaps, futures, forwards, options and other similar types of contracts. In the normal course of business, the Group enters into a variety of derivative transactions for sales, market-making and risk management purposes. The Group's objectives in using derivative instruments are to meet customers' risk management needs and to manage the Group's exposure to risks.

In accordance with the Group's accounting policy relating to derivatives and hedge accounting as described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates", all derivatives are carried at fair value in the balance sheet regardless of whether they are held for trading or non-trading purposes.

Derivatives held for sales and market-making purposes

Sales and market-making

The majority of the Group's derivatives transactions relate to sales and market-making activities. Sales activities include the structuring and marketing of derivative products to customers to enable them to take, transfer, modify or reduce current or expected risks. Market-making involves quoting bid and offer prices to other market participants, enabling revenue to be generated based on spreads and volume.

Risk management

The Group uses derivatives in order to reduce its exposure to market risks as part of its asset and liability management. This is achieved by entering into derivatives that hedge specific portfolios of fixed rate financial instruments and forecast transactions as well as strategic hedging against overall balance sheet exposures. The Group actively manages interest rate risk through, among other things, the use of derivative contracts. Utilization of derivative financial instruments is modified from time to time within prescribed limits in response to changing market conditions, as well as to changes in the characteristics and mix of the related assets and liabilities.

Derivatives qualifying for hedge accounting

The Group applies hedge accounting if derivatives meet the specific criteria described in Note 1 "Significant Accounting Policies and Critical Accounting Estimates".

In fair value hedge relationship, the Group uses primarily interest rate swaps and options, in order to protect itself against movements in the fair value of fixed-rate financial instruments due to movements in market interest rates. In a cash flow hedge relationship, the Group uses interest rate swaps in order to protect itself against exposure to variability in interest rates. The Group enters into foreign exchange forwards and swaps for hedges of translation adjustments resulting from translating the financial statements of net investments in foreign operations into the reporting currency of the parent at period end spot rates.

Interest rate risk

The Group uses interest rate swaps and options to manage its exposure to interest rate risk by modifying the re-pricing characteristics of existing and/or forecasted assets and liabilities, including funding and investment activities. The interest rate swaps and options are designated in either a fair value hedge or a cash flow hedge. For fair value hedges, the Group uses interest rate swaps and options contracts to manage the fair value movements of fixed rate financial instruments due to changes in benchmark interest. For cash flow hedges, we use interest rate swaps to manage the exposure to cash flow variability of our variable rate instruments as a result of changes in benchmark interest rates.

The Group manages its interest rate risk exposure on a portfolio basis with frequent changes in the portfolio due to the origination of new loans and bonds, repayments of existing loans and bonds, issuance of new funding liabilities and repayment of existing funding liabilities. Accordingly, a dynamic hedging accounting approach is adopted for the portfolio, in which individual hedge relationships are designated and de-designated on a more frequent basis (e.g. on a monthly basis).

The Group assesses and measures hedge effectiveness of a hedging relationship based on the change in the fair value or cash flows of the derivative hedging instrument relative to the change in the fair value or cash flows of the hedged item attributable to the hedged risk. Potential sources of ineffectiveness can be attributed to differences between hedging instruments and hedged items:

- Mismatches in the terms of hedged items and hedging instruments, for example the frequency and timing of when interest rates are reset, frequency of payment and callable features.
- Difference in the discounting rate applied to the hedged item and the hedging instrument, taking into consideration differences in the reset frequency of the hedged item and hedging instrument.
- Derivatives used as hedging instrument with a non-zero fair value at inception date of the hedging relationship, resulting in mismatch in terms with the hedged item.

Foreign exchange risk

The Group manages its foreign currency risk (including U.S. dollar and British pound) from investments in foreign operation through net investment hedges using a combination of foreign exchange forwards and swaps as hedging instruments.

As the investments in foreign operations are only hedged to the extent of the notional amount of the hedging derivative instrument the Group generally does not expect to incur significant ineffectiveness on hedges of net investments in foreign operations. Potential sources of ineffectiveness are limited to situations where derivatives with a non-zero fair value at inception date of the hedging relationship are used as hedging instrument, or where the spot foreign currency risk has been designated as hedged risk, resulting in mismatch in terms with the hedged item.

Description of significant assumptions and judgements on the application of interest rate benchmark reform accounting

The main judgement to make regarding the application of IASB Phase 1 benchmark reform surrounded the development of Euribor. The Group expects that Euribor will continue to exist in its current form as a benchmark rate for the foreseeable future. For these reasons, the Group does not consider its hedge accounting, with Euribor as the hedged risk, to be directly affected by interest rate benchmark reform at December 31, 2020.

Hedge Accounting and Interest Rate Benchmarks

The table below shows the Group’s hedge accounting relationships impacted by the IASB Benchmark Reform amendments, the significant interest rate benchmarks the Group is exposed to which are subject to expected future reform, and the nominal amounts of the derivative hedging instruments as at December 31, 2020. The derivative hedging instruments provide a close approximation to the extent of the risk exposure the Group manages through hedge accounting relationships.

	Dec 31, 2020
in € m.	Notional
Fair value hedge	
CHF LIBOR	493
GBP LIBOR	2,073
JPY LIBOR	1,383
USD LIBOR	20,877

Fair value hedge accounting

Derivatives held as fair value hedges

	Dec 31, 2020			2020	Dec 31, 2019			2019
in € m.	Assets	Liabilities	Nominal amount	Fair Value changes used for hedge effectiveness	Assets	Liabilities	Nominal amount	Fair Value changes used for hedge effectiveness
Derivatives held as fair value hedges	5,845	1,362	87,937	882	5,385	878	118,125	811

	2020	2019
in € m.	Hedge ineffectiveness	Hedge ineffectiveness
Result of fair value hedges	(175)	(343)

Financial instruments designated as fair value hedges

	Dec 31, 2020						2020
	Carrying amount of Financial instruments designated as fair value hedges		Accumulated amount of fair value hedge adjustments - Total		Accumulated amount of fair value hedge adjustments - Terminated hedge relationships		Fair Value changes used for hedge effectiveness
in € m.	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	
Financial assets at fair value through other comprehensive income	25,568	0	100	0	2	0	12
Bonds at amortized cost	831	0	22	0	4	0	63
Long-term debt	0	57,883	0	4,196	0	629	(1,132)
Deposits	0	0	0	0	0	0	0
Loans at amortized cost	0	0	0	0	0	0	0

	Dec 31, 2019						2019
	Carrying amount of Financial instruments designated as fair value hedges		Accumulated amount of fair value hedge adjustments - Total		Accumulated amount of fair value hedge adjustments - Terminated hedge relationships		Fair Value changes used for hedge effectiveness
in € m.	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	
Financial assets at fair value through other comprehensive income	11,496	0	327	0	58	0	481
Loans at amortized cost	3,185	0	82	0	(1)	0	100
Long-term debt	0	80,078	0	3,822	0	417	(1,734)
Deposits	0	0	0	0	0	0	0

Cash flow hedge accounting

Derivatives held as cash flow hedges

	Dec 31, 2020			2020	Dec 31, 2019			2019
in € m.	Assets	Liabilities	Nominal amount	Fair Value changes used for hedge effectiveness	Assets	Liabilities	Nominal amount	Fair Value changes used for hedge effectiveness
Derivatives held as cash flow hedges	79	0	6,171	(14)	25	0	2,714	(2)

Cash flow hedge balances

in € m.	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018
Reported in Equity[1]	11	21	25
thereof relates to terminated programs	0	0	0
Gains (losses) posted to equity for the year ended	(14)	(2)	(3)
Gains (losses) removed from equity for the year ended	4	(2)	0
thereof relates to terminated programs	0	0	0
Changes of hedged item's value used for hedge effectiveness	(7)	0	0
Ineffectiveness recorded within P&L	(12)	0	0

[1] Reported in equity refers to accumulated other comprehensive income as presented in the Consolidated Balance Sheet.

In accordance with IAS 39.96 the gains and losses posted to equity in a cash flow hedge relationship is the lesser of cumulative gain or loss on the hedging instrument from the inception of the hedge and the cumulative change in fair value of the expected future cash flows on the hedged item from inception of the hedge. As a result, changes of the hedged item's value used for hedge effectiveness are not fully recorded in equity if it exceeds the hedging instrument's fair value changes used for hedge effectiveness. Consequently, hedge ineffectiveness recorded within P&L does not always reconcile to the difference between the changes of the hedged item's value used for hedge effectiveness and the hedging instrument's fair value changes used for hedge effectiveness.

As of December 31, 2020 the longest term cash flow hedge matures in 2025.

The financial instruments designated as cash flow hedges are recognized as Loans at amortized cost in the Group's Consolidated Balance Sheet.

Net investment hedge accounting

Derivatives held as net investment hedges

	Dec 31, 2020			2020	Dec 31, 2019			2019
in € m.	Assets	Liabilities	Nominal amount	Fair Value changes used for hedge effectiveness	Assets	Liabilities	Nominal amount	Fair Value changes used for hedge effectiveness
Derivatives held as net investment hedges	1,617	408	40,277	1,933	556	957	43,546	(413)

	2020		2019	
in € m.	Fair value changes recognised in Equity[1]	Hedge ineffectiveness	Fair value changes recognised in Equity[1]	Hedge ineffectiveness
Result of net investment hedges	(1,415)	(186)	795	(386)

[1] Reported in equity refers to accumulated other comprehensive income as presented in the Consolidated Balance Sheet.

Profile of derivatives held as net investment hedges

in € m.	Within 1 year	1–3 years	3–5 years	Over 5 years
As of December 31, 2020				
Nominal amount Foreign exchange forwards	40,217	60	0	0
Nominal amount Foreign exchange swaps	0	0	0	0
Total	40,217	60	0	0
As of December 31, 2019				
Nominal amount Foreign exchange forwards	32,702	78	0	0
Nominal amount Foreign exchange swaps	3,337	3,820	579	3,030
Total	36,039	3,898	579	3,030

The Group uses a combination of a rolling foreign exchange forward strategy and a static foreign currency swap hedging strategy. Over the past 2 financial years, the average foreign currency rate for the Group's foreign currency Euro/USD swap portfolio was 0.85.

36 – Related party transactions

Parties are considered to be related if one party has the ability to directly or indirectly control the other party or exercise significant influence over the other party in making financial or operational decisions. The Group's related parties include:

– key management personnel including close family members and entities which are controlled, significantly influenced by, or for which significant voting power is held by key management personnel or their close family members,
– subsidiaries, joint ventures and associates and their respective subsidiaries, and
– post-employment benefit plans for the benefit of Deutsche Bank employees.

Transactions with key management personnel

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of Deutsche Bank, directly or indirectly. The Group considers the members of the Management Board and of the Supervisory Board of the parent company to constitute key management personnel for purposes of IAS 24.

Compensation expense of key management personnel

in € m.	2020	2019	2018
Short-term employee benefits	30	32	41
Post-employment benefits	7	6	10
Other long-term benefits	2	6	2
Termination benefits	0	34	32
Share-based payment	8	21	2
Total	47	99	87

The above table does not contain compensation that employee representatives and former board members on the Supervisory Board have received. The aggregated compensation paid to such members for their services as employees of Deutsche Bank or status as former employees (retirement, pension and deferred compensation) amounted to € 1 million as of December 31, 2020, € 1 million as of December 31, 2019 and € 1 million as of December 31, 2018.

Among the Group's transactions with key management personnel as of December 31, 2020 were loans and commitments of € 8 million and deposits of € 21 million. As of December 31, 2019, the Group's transactions with key management personnel were loans and commitments of € 10 million and deposits of € 38 million.

In addition, the Group provides banking services, such as payment and account services as well as investment advice, to key management personnel.

Transactions with subsidiaries, joint ventures and associates

Transactions between Deutsche Bank AG and its subsidiaries meet the definition of related party transactions. If these transactions are eliminated on consolidation, they are not disclosed as related party transactions. Transactions between the Group and its associated companies and joint ventures and their respective subsidiaries also qualify as related party transactions.

Transactions for subsidiaries, joint ventures and associates are presented combined in below table as these are not material individually.

Loans

in € m.	2020	2019
Loans outstanding, beginning of year	228	228
Net movement in loans during the period	(19)	(3)
Changes in the group of consolidated companies	0	0
Exchange rate changes/other	5	4
Loans outstanding, end of year[1]	214	228
Other credit risk related transactions:		
Allowance for loan losses	0	0
Provision for loan losses	0	0
Guarantees and commitments	42	7

[1] Loans past due were € 0 million as of December 31, 2020 and € 0 million as of December 31, 2019. For the total loans the Group held collateral of € 5 million and € 5 million as of December 31, 2020 and December 31, 2019, respectively.

Deposits

in € m.	2020	2019
Deposits outstanding, beginning of year	**58**	68
Net movement in deposits during the period	(8)	(11)
Changes in the group of consolidated companies	0	0
Exchange rate changes/other	(0)	1
Deposits outstanding, end of year	**49**	58

Other transactions

Trading assets and positive market values from derivative financial transactions with associated companies amounted to € 1 million as of December 31, 2020 and € 1 million as of December 31, 2019. Trading liabilities and negative market values from derivative financial transactions with associated companies amounted to € 0 million as of December 31, 2020 and € 0 million as of December 31, 2019.

Other assets related to transactions with associated companies amounted to € 55 million as of December 31, 2020, and € 1 million as of December 31, 2019. Other liabilities related to transactions with associated companies were € 2 million as of December 31, 2020, and € 0 million as of December 31, 2019.

Transactions with pension plans

Under IFRS, post-employment benefit plans are considered related parties. The Group has business relationships with a number of its pension plans pursuant to which it provides financial services to these plans, including investment management services. The Group's pension funds may hold or trade Deutsche Bank shares or securities.

Transactions with related party pension plans

in € m.	2020	2019[1]
Equity shares issued by the Group held in plan assets	1	1
Other assets	24	10
Fees paid from plan assets to asset managers of the Group	24	24
Market value of derivatives with a counterparty of the Group	306	(184)
Notional amount of derivatives with a counterparty of the Group	14,623	9,083

[1] Prior year figures have been restated due to the consideration of defined contribution plans.

37 – Information on subsidiaries

Composition of the Group

Deutsche Bank AG is the direct or indirect holding company for the Group's subsidiaries.

The Group consists of 628 (2019: 666) consolidated entities, thereof 242 (2019: 249) consolidated structured entities. 420 (2019: 459) of the entities controlled by the Group are directly or indirectly held by the Group at 100 % of the ownership interests (share of capital). Third parties also hold ownership interests in 208 (2019: 207) of the consolidated entities (non-controlling interests). As of December 31, 2020 and 2019, one subsidiary has material non-controlling interests. Non-controlling interests for all other subsidiaries are neither individually nor cumulatively material to the Group.

Subsidiaries with material non-controlling interests

	Dec 31, 2020	Dec 31, 2019
DWS Group GmbH & Co. KGaA		
Proportion of ownership interests and voting rights held by non-controlling interests	20.51 %	20.51 %
Place of business	Global	Global

in € m	Dec 31, 2020	Dec 31, 2019
Net income attributable to non-controlling interests	117	105
Accumulated non-controlling interests of the subsidiary	1,412	1,420
Dividends paid to non-controlling interests	69	56
Summarised financial information:		
Total assets	10,448	10,952
Total liabilities	3,685	4,100
Total net revenues	2,237	2,389
Net income (loss)	558	512
Total comprehensive income (loss), net of tax	259	583

Significant restrictions to access or use the Group's assets

Statutory, contractual or regulatory requirements as well as protective rights of noncontrolling interests might restrict the ability of the Group to access and transfer assets freely to or from other entities within the Group and to settle liabilities of the Group.

Since the Group did not have any material noncontrolling interests at the balance sheet date, any protective rights associated with these did not give rise to significant restrictions.

The following restrictions impact the Group's ability to use assets:

- The Group has pledged assets to collateralize its obligations under repurchase agreements, securities financing transactions, collateralized loan obligations and for margining purposes for OTC derivative liabilities.
- The assets of consolidated structured entities are held for the benefit of the parties that have bought the notes issued by these entities.
- Regulatory and central bank requirements or local corporate laws may restrict the Group's ability to transfer assets to or from other entities within the Group in certain jurisdictions.

Restricted assets

	Dec 31, 2020		Dec 31, 2019	
in € m.	Total assets	Restricted assets	Total assets	Restricted assets
Interest-earning deposits with banks	152,143	153	104,327	159
Financial assets at fair value through profit or loss	527,980	52,494	530,713	43,190
Financial assets at fair value through other comprehensive income	55,834	8,110	45,503	2,943
Loans at amortized cost	426,691	78,144	429,841	71,369
Other	162,313	3,316	187,290	3,017
Total	**1,324,961**	**142,217**	1,297,674	120,678

The table above excludes assets that are not encumbered at an individual entity level but which may be subject to restrictions in terms of their transferability within the Group. Such restrictions may be based on local connected lending requirements or similar regulatory restrictions. In this situation, it is not feasible to identify individual balance sheet items that cannot be transferred. This is also the case for regulatory minimum liquidity requirements. The Group identifies the volume of liquidity reserves in excess of local stress liquidity outflows. The aggregate amount of such liquidity reserves that are considered restricted for this purpose is € 43.5 billion as of December 31, 2020 (as of December 31, 2019: € 31.2 billion).

38 – Structured entities

Nature, purpose and extent of the Group's interests in structured entities

The Group engages in various business activities with structured entities which are designed to achieve a specific business purpose. A structured entity is one that has been set up so that any voting rights or similar rights are not the dominant factor in deciding who controls the entity. An example is when voting rights relate only to administrative tasks and the relevant activities are directed by contractual arrangements.

A structured entity often has some or all of the following features or attributes:

- Restricted activities;
- A narrow and well defined objective;
- Insufficient equity to permit the structured entity to finance its activities without subordinated financial support;
- Financing in the form of multiple contractually linked instruments to investors that create concentrations of credit or other risks (tranches).

The principal uses of structured entities are to provide clients with access to specific portfolios of assets and to provide market liquidity for clients through securitizing financial assets. Structured entities may be established as corporations, trusts or partnerships. Structured entities generally finance the purchase of assets by issuing debt and equity securities that are collateralized by and/or indexed to the assets held by the structured entities. The debt and equity securities issued by structured entities may include tranches with varying levels of subordination.

Structured entities are consolidated when the substance of the relationship between the Group and the structured entities indicate that the structured entities are controlled by the Group, as discussed in Note 1 "Significant Accounting Policies and Critical Accounting Estimates".

Consolidated structured entities

The Group has contractual arrangements which may require it to provide financial support to the following types of consolidated structured entities.

Securitization vehicles

The Group uses securitization vehicles for funding purchase of diversified pool of assets. The Group provides financial support to these entities in the form of liquidity facility. As of December 31, 2020, and December 31, 2019, there were no outstanding loan commitments to these entities.

Funds

The Group may provide funding and liquidity facility or guarantees to funds consolidated by the group. As of December 31, 2020 and December 31, 2019, the notional value of the liquidity facilities and guarantees provided by the Group to such funds was € 1.0 billion and € 1.8 billion, respectively.

Deutsche Bank did not provide non-contractual support during the year to consolidated structured entities.

Unconsolidated structured entities

These are entities which are not consolidated because the Group does not control them through voting rights, contract, funding agreements, or other means. The extent of the Group's interests to unconsolidated structured entities will vary depending on the type of structured entities.

Below is a description of the Group's involvements in unconsolidated structured entities by type.

Repackaging and investment entities

Repackaging and investment entities are established to meet clients' investment needs through the combination of securities and derivatives. These entities are not consolidated by the Group because the Group does not have power to influence the returns obtained from the entities. These entities are usually set up to provide a certain investment return pre-agreed with the investor, and the Group is not able to change the investment strategy or return during the life of the transaction.

Third party funding entities

The Group provides funding to structured entities that hold a variety of assets. These entities may take the form of funding entities, trusts and private investment companies. The funding is collateralized by the asset in the structured entities. The group’s involvement involves predominantly both lending and loan commitments.

The vehicles used in these transactions are controlled by the borrowers where the borrowers have the ability to decide whether to post additional margin or collateral in respect of the financing. In such cases, where borrowers can decide to continue or terminate the financing, the borrowers will consolidate the vehicle.

Securitization Vehicles

The Group establishes securitization vehicles which purchase diversified pools of assets, including fixed income securities, corporate loans, and asset-backed securities (predominantly commercial and residential mortgage-backed securities and credit card receivables). The vehicles fund these purchases by issuing multiple tranches of debt and equity securities, the repayment of which is linked to the performance of the assets in the vehicles.

The Group may transfer assets to these securitization vehicles and provides financial support to these entities in the form of liquidity facilities.

The Group also invests and provides liquidity facilities to third party sponsored securitization vehicles.

The securitization vehicles that are not consolidated into the Group are those where the Group does not hold the power or ability to unilaterally remove the servicer or special servicer who has been delegated power over the activities of the entity.

Funds

The Group establishes structured entities to accommodate client requirements to hold investments in specific assets. The Group also invests in funds that are sponsored by third parties. A group entity may act as fund manager, custodian or some other capacity and provide funding and liquidity facilities to both group sponsored and third party funds. The funding provided is collateralized by the underlying assets held by the fund.

The Group does not consolidate funds when Deutsche Bank is deemed agent or when another third party investor has the ability to direct the activities of the fund.

Other

These are Deutsche Bank sponsored or third party structured entities that do not fall into any criteria above. These entities are not consolidated by the Group when the Group does not hold power over the decision making of these entities.

Income derived from involvement with structured entities

The Group earns management fees and, occasionally, performance-based fees for its investment management service in relation to funds. Interest income is recognized on the funding provided to structured entities. Any trading revenue as a result of derivatives with structured entities and from the movements in the value of notes held in these entities is recognized in ‘Net gains/losses on financial assets/liabilities held at fair value through profit and loss’.

Interests in unconsolidated structured entities

The Group’s interests in unconsolidated structured entities refer to contractual and non-contractual involvement that exposes the Group to variability of returns from the performance of the structured entities. Examples of interests in unconsolidated structured entities include debt or equity investments, liquidity facilities, guarantees and certain derivative instruments in which the Group is absorbing variability of returns from the structured entities.

Interests in unconsolidated structured entities exclude instruments which introduce variability of returns into the structured entities. For example, when the Group purchases credit protection from an unconsolidated structured entity whose purpose and design is to pass through credit risk to investors, the Group is providing the variability of returns to the entity rather than absorbing variability. The purchased credit protection is therefore not considered as an interest for the purpose of the table below.

Maximum exposure to unconsolidated structured entities

The maximum exposure to loss is determined by considering the nature of the interest in the unconsolidated structured entity. The maximum exposure for loans and trading instruments is reflected by their carrying amounts in the consolidated balance sheet. The maximum exposure for derivatives and off balance sheet commitments such as guarantees, liquidity facilities and loan commitments under IFRS 12, as interpreted by the Group, is reflected by the notional amounts. Such amounts or their development do not reflect the economic risks faced by the Group because they do not take into account the effects of collateral or hedges nor the probability of such losses being incurred. At December 31, 2020, the notional related to the positive and negative replacement values of derivatives and off balance sheet commitments were € 78 billion, € 238 billion and

€ 16 billion respectively. At December 31, 2019, the notional related to the positive and negative replacement values of derivatives and off balance sheet commitments were € 136 billion, € 506 billion and € 16 billion respectively.

Size of structured entities

The Group provides a different measure for size of structured entities depending on their type. The following measures have been considered as appropriate indicators for evaluating the size of structured entities:

- Funds – Net asset value or assets under management where the Group holds fund units and notional of derivatives when the Group's interest comprises of derivatives.
- Securitizations – notional of notes in issue (excluding interest only and excess notes where applicable) when the Group derives its interests through notes its holds and notional of derivatives when the Group's interests is in the form of derivatives.
- Third party funding entities –Total assets in entities
- Repackaging and investment entities – Fair value of notes in issue

For Third party funding entities, size information is not publicly available, therefore the Group has disclosed the greater of the collateral the Group has received/pledged or the notional of the exposure the Group has to the entity.

Based on the above definitions, the total size of structured entities is € 1,878 billion, of which the majority of € 1,088 billion is from Funds. In 2019, it was € 2,091 billion and € 1,617 billion respectively.

The following table shows, by type of structured entity, the carrying amounts of the Group's interests recognized in the consolidated statement of financial position as well as the maximum exposure to loss resulting from these interests.The carrying amounts presented below do not reflect the true variability of returns faced by the Group because they do not take into account the effects of collateral or hedges.

Carrying amounts and size relating to Deutsche Bank's interests

					Dec 31, 2020
in € m.	Repackaging and Investment Entities	Third Party Funding Entities	Securitizations	Funds	Total
Assets					
Cash and central bank balances	0	0	0	0	0
Interbank balances (w/o central banks)	1	0	0	12	13
Central bank funds sold and securities purchased under resale agreements	0	126	0	1,901	2,027
Securities Borrowed	0	0	0	0	0
Total financial assets at fair value through profit or loss	340	6,368	4,428	50,316	61,452
Trading assets	181	4,134	2,408	4,304	11,027
Positive market values (derivative financial instruments)	158	154	31	3,635	3,977
Non-trading financial assets mandatory at fair value through profit or loss	0	2,080	1,990	42,377	46,448
Financial assets designated at fair value through profit or loss	0	0	0	0	0
Financial assets at fair value through other comprehensive income	0	333	457	270	1,060
Loans at amortized cost	165	46,867	27,638	10,270	84,939
Other assets	51	400	3,065	20,499	24,015
Total assets	557	54,096	35,587	83,267	173,508
Liabilities					
Total financial liabilities at fair value through profit or loss	92	58	10	11,191	11,351
Negative market values (derivative financial instruments)	92	58	10	11,191	11,351
Other short-term borrowings	0	0	0	0	0
Other liabilities	0	0	0	1,815	1,815
Total liabilities	92	58	10	13,006	13,166
Off-balance sheet exposure	0	5,889	8,279	1,944	16,112
Total	466	59,927	43,856	72,205	176,453

					Dec 31, 2019
in € m.	Repackaging and Investment Entities	Third Party Funding Entities	Securitizations	Funds	Total
Assets					
Cash and central bank balances	0	0	0	0	0
Interbank balances (w/o central banks)	1	6	0	35	42
Central bank funds sold and securities purchased under resale agreements	0	603	8	2,613	3,224
Securities Borrowed	0	0	0	3	3
Total financial assets at fair value through profit or loss	262	6,035	6,257	54,853	67,408
Trading assets	199	4,033	4,371	5,361	13,964
Positive market values (derivative financial instruments)	63	176	32	2,777	3,049
Non-trading financial assets mandatory at fair value through profit or loss	0	1,820	1,854	46,715	50,389
Financial assets designated at fair value through profit or loss	0	6	0	0	6
Financial assets at fair value through other comprehensive income	0	221	491	106	818
Loans at amortized cost	151	44,284	36,183	9,842	90,460
Other assets	0	332	3,894	17,863	22,089
Total assets	414	51,481	46,834	85,316	184,044
Liabilities					
Total financial liabilities at fair value through profit or loss	44	27	5	8,865	8,941
Negative market values (derivative financial instruments)	44	27	5	8,865	8,941
Other short-term borrowings	0	0	0	0	0
Other liabilities	0	0	0	2,257	2,257
Total liabilities	44	27	5	11,122	11,197
Off-balance sheet exposure	1	4,793	9,358	2,245	16,396
Total	371	56,247	56,187	76,439	189,243

Trading assets –Total trading assets as of December 31, 2020 and December 31, 2019 of € 11.0 billion and € 14.0 billion are comprised primarily of € 2.4 billion and € 4.4 billion in Securitizations and € 4.3 billion and € 5.4 billion in Funds structured entities respectively. The Group's interests in securitizations are collateralized by the assets contained in these entities. Where the Group holds fund units these are typically in regards to market making in funds or otherwise serve as hedges for notes issued to clients. Moreover the credit risk arising from loans made to Third party funding structured entities is mitigated by the collateral received.

Non-trading financial assets mandatory at fair value through profit or loss – Reverse repurchase agreements to Funds comprise the majority of the interests in this category and are collateralized by the underlying securities.

Loans – Loans as of December 31, 2020 and December 31, 2019 consist of € 84.9 billion and € 90.5 billion investment in securitization tranches and financing to Third party funding entities. The Group's financing to Third party funding entities is collateralized by the assets in those structured entities.

Other assets – Other assets as of December 31, 2020 and December 31, 2019 of € 24.0 billion and € 22.1 billion, respectively, consist primarily of prime brokerage receivables and cash margin balances.

Pending Receivables – Pending Receivable balances are not included in this disclosure note due to the fact that these balances arise from typical customer supplier relationships out of e.g. brokerage type activities and their inherent volatility would not provide users of the financial statements with effective information about Deutsche Bank's exposures to structured entities.

Financial support

Deutsche Bank did not provide non-contractual support during the year to unconsolidated structured entities.

Sponsored unconsolidated structured entities where the Group has no interest as of December 31, 2020 and December 31, 2019.

As a sponsor, the Group is involved in the legal set up and marketing of the entity and supports the entity in different ways, namely:

– transferring assets to the entities
– providing seed capital to the entities
– providing operational support to ensure the entity's continued operation
– providing guarantees of performance to the structured entities.

The Group is also deemed a sponsor for a structured entity if market participants would reasonably associate the entity with the Group. Additionally, the use of the Deutsche Bank name for the structured entity indicates that the Group has acted as a sponsor.

The gross revenues from sponsored entities where the Group did not hold an interest as of December 31, 2020 and December 31, 2019 were € (134) million and € 145 million respectively. Instances where the Group does not hold an interest in an unconsolidated sponsored structured entity include cases where any seed capital or funding to the structured entity has already been repaid in full to the Group during the year. This amount does not take into account the impacts of hedges and is recognized in Net gains/losses on financial assets/liabilities at fair value through profit and loss. The aggregated carrying amounts of assets transferred to sponsored unconsolidated structured entities in 2020 were € 1.4 billion for securitization and € 1.2 billion for repackaging and investment entities. In 2019, they were € 0.3 billion for securitization and € 2.2 billion for repackaging and investment entities.

39 – Current and non-current assets and liabilities

Asset and liability line items by amounts recovered or settled within or after one year

Asset items as of December 31, 2020

	Amounts recovered or settled		Total
in € m.	within one year	after one year	Dec 31, 2020
Cash and central bank balances	166,208	0	166,208
Interbank balances (w/o central banks)	9,120	11	9,130
Central bank funds sold and securities purchased under resale agreements	4,728	3,805	8,533
Securities borrowed	0	0	0
Financial assets at fair value through profit or loss	515,653	12,327	527,980
Financial assets at fair value through other comprehensive income	14,393	41,441	55,834
Equity method investments	0	901	901
Loans at amortized cost	111,588	315,103	426,691
Property and equipment	0	5,549	5,549
Goodwill and other intangible assets	0	6,725	6,725
Other assets	94,685	15,675	110,360
Assets for current tax	300	686	986
Total assets before deferred tax assets	916,674	402,223	1,318,898
Deferred tax assets			6,063
Total assets			1,324,961

Liability items as of December 31, 2020

in € m.	Amounts recovered or settled within one year	Amounts recovered or settled after one year	Total Dec 31, 2020
Deposits	544,383	23,362	567,745
Central bank funds purchased and securities sold under repurchase agreements	1,830	495	2,325
Securities loaned	1,698	0	1,698
Financial liabilities at fair value through profit or loss	416,042	3,157	419,199
Other short-term borrowings	3,553	0	3,553
Other liabilities	112,617	1,591	114,208
Provisions	2,430	0	2,430
Liabilities for current tax	328	246	574
Long-term debt	59,613	89,550	149,163
Trust preferred securities	1,321	0	1,321
Total liabilities before deferred tax liabilities	1,143,814	118,402	1,262,216
Deferred tax liabilities			561
Total liabilities			1,262,777

Asset items as of December 31, 2019

in € m.	Amounts recovered or settled within one year	Amounts recovered or settled after one year	Total Dec 31, 2019
Cash and central bank balances	137,370	222	137,592
Interbank balances (w/o central banks)	9,613	22	9,636
Central bank funds sold and securities purchased under resale agreements	9,591	4,210	13,801
Securities borrowed	428	0	428
Financial assets at fair value through profit or loss	517,138	13,576	530,713
Financial assets at fair value through other comprehensive income	12,183	33,320	45,503
Equity method investments	0	929	929
Loans at amortized cost	115,669	314,172	429,841
Property and equipment	0	4,930	4,930
Goodwill and other intangible assets	0	7,029	7,029
Other assets	82,355	28,004	110,359
Assets for current tax	405	521	926
Total assets before deferred tax assets	884,752	406,936	1,291,688
Deferred tax assets			5,986
Total assets			1,297,674

Liability items as of December 31, 2019

in € m.	Amounts recovered or settled within one year	Amounts recovered or settled after one year	Total Dec 31, 2019
Deposits	546,077	26,131	572,208
Central bank funds purchased and securities sold under repurchase agreements	3,057	58	3,115
Securities loaned	259	0	259
Financial liabilities at fair value through profit or loss	399,943	4,505	404,448
Other short-term borrowings	5,218	0	5,218
Other liabilities	105,978	1,986	107,964
Provisions	2,622	0	2,622
Liabilities for current tax	502	149	651
Long-term debt	38,088	98,384	136,473
Trust preferred securities	2,013	0	2,013
Total liabilities before deferred tax liabilities	1,103,756	131,214	1,234,970
Deferred tax liabilities			545
Total liabilities			1,235,515

40 – Events after the reporting period

After the reporting date no material events occurred which had a significant impact on our results of operations, financial position and net assets.

41 – Regulatory capital information

General definitions

The calculation of our own funds incorporates the capital requirements following the “Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms” (Capital Requirements Regulation or “CRR”) and the “Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms” (Capital Requirements Directive or “CRD”) which have been further amended with subsequent Regulations and Directives. The CRD has been implemented into German law. The information in this section as well as in the section “Development of risk-weighted Assets” is based on the regulatory principles of consolidation.

This section refers to the capital adequacy of the group of entities consolidated for banking regulatory purposes pursuant to the CRR and the German Banking Act (“Kreditwesengesetz” or “KWG”). Therein not included are insurance companies or companies outside the finance sector.

The total own funds pursuant to the effective regulations as of year-end 2020 comprises Tier 1 and Tier 2 (T2) capital. Tier 1 capital is subdivided into Common Equity Tier 1 (CET 1) capital and Additional Tier 1 (AT1) capital.

Common Equity Tier 1 (CET 1) capital consists primarily of common share capital (reduced by own holdings) including related share premium accounts, retained earnings (including losses for the financial year, if any) and accumulated other comprehensive income, subject to regulatory adjustments (i.e. prudential filters and deductions), as well as minority interests qualifying for inclusion in consolidated CET1 capital. Prudential filters for CET 1 capital, according to Articles 32 to 35 CRR, include (i) securitization gains on sale, (ii) cash flow hedges and changes in the value of own liabilities, and (iii) additional value adjustments. CET 1 capital deductions for instance includes (i) intangible assets, (ii) deferred tax assets that rely on future profitability, (iii) negative amounts resulting from the calculation of expected loss amounts, (iv) net defined benefit pension fund assets, (v) reciprocal cross holdings in the capital of financial sector entities and, (vi) significant and non-significant investments in the capital (CET 1, AT1, T2) of financial sector entities above certain thresholds. All items not deducted (i.e., amounts below the threshold) are subject to risk-weighting.

Additional Tier 1 (AT1) capital consists of AT1 capital instruments and related share premium accounts as well as noncontrolling interests qualifying for inclusion in consolidated AT1 capital and during the transitional period grandfathered instruments. To qualify as AT1 capital under CRR/CRD, instruments must have principal loss absorption through a conversion to common shares or a write-down mechanism allocating losses at a trigger point and must also meet further requirements (perpetual with no incentive to redeem; institution must have full dividend/coupon discretion at all times, etc.).

Tier 2 (T2) capital comprises eligible capital instruments, the related share premium accounts and subordinated long-term debt, certain loan loss provisions and noncontrolling interests that qualify for inclusion in consolidated T2 capital. To qualify as T2 capital, capital instruments or subordinated debt must have an original maturity of at least five years. Moreover, eligible capital instruments may inter alia not contain an incentive to redeem, a right of investors to accelerate repayment, or a credit sensitive dividend feature

We present in this report certain figures based on the CRR definition of own fund instruments applicable for Additional Tier 1 (AT1) capital and Tier 2 (T2) capital and figures based thereon, including Tier 1, Total Capital and Leverage Ratio) on a “fully loaded” basis. We calculate such “fully loaded” figures excluding the transitional arrangements for own fund instruments as provided in the currently applicable CRR/CRD. For CET 1 instruments there are no transitional provisions.

Transitional arrangements are applicable for AT1 and T2 instruments. Capital instruments issued on or prior to December 31, 2011, that no longer qualify as AT1 or T2 capital under the fully loaded CRR/CRD as currently applicable are subject to grandfathering rules during the transitional period and are being phased out from 2013 to 2022 with their recognition capped at 20 % in 2020 and 10 % in 2021 (in relation to the portfolio eligible for grandfathering which was still in issue on December 31, 2012). The current CRR as applicable since June 27, 2019 provides further grandfathering rules for AT1 and T2 instruments issued prior to June 27, 2019. Thereunder, AT1 and T2 instruments issued through special purpose entities are grandfathered until December 31, 2021, and AT1 and T2 instruments that do not meet certain new requirements that apply since June 27, 2019 continue to qualify until June 26, 2025. Instruments issued under UK law which do not fulfill all CRR requirements after the UK has left the European Union are also excluded from our fully loaded definition. Our CET 1 and RWA figures show no difference between CRR/CRD as currently applicable and fully loaded CRR/CRD based on our definition of “fully loaded”.

For the comparative numbers as per year-end 2019 we still applied our earlier concept of fully loaded, defined as excluding the transitional arrangements for own funds instruments introduced by the CRR/CRD applicable until June 26, 2019, but reflecting the transitional arrangements introduced by the amendments to the CRR/CRD applicable from June 27, 2019 and further amendments thereafter.

We believe that these “fully loaded” calculations provide useful information to investors as they reflect our progress against the regulatory capital standards and as many of our competitors have been describing calculations on a “fully loaded” basis. As our competitors’ assumptions and estimates regarding “fully loaded” calculations may vary, however, our “fully loaded” measures may not be comparable with similarly labelled measures used by our competitors.

Capital instruments

Our Management Board received approval from the 2019 Annual General Meeting to buy back up to 206.7 million shares before the end of April 2024. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. During the period from the 2019 Annual General Meeting until the 2020 Annual General Meeting (May 20, 2020), 33.8 million shares were purchased. The shares purchased were used for equity compensation purposes in the same period or are to be used in the upcoming period so that the number of shares held in Treasury from buybacks was 10.5 million as of the 2020 Annual General Meeting.

The 2020 Annual General Meeting granted our Management Board the approval to buy back up to 206.7 million shares before the end of April 2025. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. These authorizations substitute the authorizations of the previous year. During the period from the 2020 Annual General Meeting until December 31, 2020, there were not any shares purchased. The shares in inventory are to be used in this period or the upcoming period for equity compensation purposes; the number of shares held in Treasury from buybacks was 1.3 million as of December 31, 2020.

Since the 2017 Annual General Meeting, and as of December 31, 2020, authorized capital available to the Management Board is € 2,560 million (1,000 million shares). As of December 31, 2020, the conditional capital against cash stands at € 512 million (200 million shares). Additional conditional capital for equity compensation amounts to € 51.2 million (20 million shares). Further, the 2018 Annual General Meeting authorized the issuance of participatory notes and other Hybrid Debt Securities that fulfill the regulatory requirements to qualify as Additional Tier 1 capital with an equivalent value of € 8.0 billion.

Our legacy Hybrid Tier 1 capital instruments (substantially all noncumulative trust preferred securities) are not recognized under fully loaded CRR/CRD rules as Additional Tier 1 capital, mainly because they have no write-down or equity conversion feature. During the transitional phase-out period the maximum recognizable amount of Additional Tier 1 instruments from Basel 2.5 compliant issuances as of December 31, 2012 will be reduced at the beginning of each financial year by 10 % or € 1.3 billion, through 2022. For December 31, 2020, this resulted in eligible Additional Tier 1 instruments of € 6.8 billion (i.e. € 5.7 billion newly issued AT1 Notes plus € 1.1 billion of legacy Hybrid Tier 1 instruments recognizable during the transition period). Additional Tier 1 instruments recognized under fully loaded CRR/CRD rules amounted to € 5.7 billion as of December 31, 2020. In 2020, the bank issued AT1 notes amounting to U.S.$ 1.3 billion or an equivalent amount of € 1.2 billion. Furthermore, the bank redeemed legacy Hybrid Tier 1 instruments with a notional of U.S.$ 0.8 billion and an eligible equivalent amount of € 0.7 billion.

The total of our Tier 2 capital instruments as of December 31, 2020 recognized during the transition period under CRR/CRD was € 6.9 billion (nominal value of € 7.7 billion). Tier 2 instruments recognized under fully loaded CRR/CRD rules amounted to € 6.6 billion (nominal value of € 7.4 billion). In 2020, the bank issued Tier 2 capital instruments with a nominal value of U.S.$ 0.5 billion (equivalent amount of € 0.4 billion) and € 1.3 billion.

Minimum capital requirements and additional capital buffers

Failure to meet minimum capital requirements can result in supervisory measures such as restrictions of profit distributions or limitations on certain businesses such as lending. We complied with the regulatory capital adequacy requirements in 2020.

Details on regulatory capital

Own Funds Template (incl. RWA and capital ratios)

in € m.	CRR/CRD Dec 31, 2020	CRR/CRD Dec 31, 2019
Common Equity Tier 1 (CET 1) capital: instruments and reserves		
Capital instruments, related share premium accounts and other reserves	45,890	45,780
Retained earnings	9,784	14,814
Accumulated other comprehensive income (loss), net of tax	(1,118)	537
Independently reviewed interim profits net of any foreseeable charge or dividend[1]	84	(5,390)
Other	805	837
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	**55,444**	56,579
Common Equity Tier 1 (CET 1) capital: regulatory adjustments		
Additional value adjustments (negative amount)	(1,430)	(1,738)
Other prudential filters (other than additional value adjustments)	(112)	(150)
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	(4,635)	(6,515)
Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (negative amount)	(1,353)	(1,126)
Negative amounts resulting from the calculation of expected loss amounts	(99)	(259)
Defined benefit pension fund assets (net of related tax liabilities) (negative amount)	(772)	(892)
Direct, indirect and synthetic holdings by an institution of own CET 1 instruments (negative amount)	0	(15)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above the 10 % / 15 % thresholds and net of eligible short positions) (negative amount)	0	0
Deferred tax assets arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (amount above the 10 % / 15 % thresholds) (negative amount)	(92)	(319)
Other regulatory adjustments[2]	(2,252)	(1,417)
Total regulatory adjustments to Common Equity Tier 1 (CET 1) capital	**(10,745)**	(12,430)
Common Equity Tier 1 (CET 1) capital	**44,700**	44,148
Additional Tier 1 (AT1) capital: instruments		
Capital instruments and the related share premium accounts	5,828	4,676
Amount of qualifying items referred to in Art. 484 (4) CRR and the related share premium accounts subject to phase out from AT1	1,100	1,813
Additional Tier 1 (AT1) capital before regulatory adjustments	**6,928**	6,489
Additional Tier 1 (AT1) capital: regulatory adjustments		
Direct, indirect and synthetic holdings by an institution of own AT1 instruments (negative amount)	(80)	(91)
Residual amounts deducted from AT1 capital with regard to deduction from CET 1 capital during the transitional period pursuant to Art. 472 CRR	N/M	N/M
Other regulatory adjustments	0	0
Total regulatory adjustments to Additional Tier 1 (AT1) capital	**(80)**	(91)
Additional Tier 1 (AT1) capital	**6,848**	6,397
Tier 1 capital (T1 = CET 1 + AT1)	**51,548**	50,546
Tier 2 (T2) capital	**6,944**	5,957
Total capital (TC = T1 + T2)	**58,492**	56,503
Total risk-weighted assets	**328,951**	324,015
Capital ratios		
Common Equity Tier 1 capital ratio (as a percentage of risk-weighted assets)	13.6	13.6
Tier 1 capital ratio (as a percentage of risk-weighted assets)	15.7	15.6
Total capital ratio (as a percentage of risk-weighted assets)	17.8	17.4

N/M – Not meaningful
[1] Full year profit is recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).
[2] Includes € 0.4 billion capital deduction effective from April 2019 and € 0.3 billion effective from October 2016 based on regular ECB review, € 0.9 billion capital deduction based on ECB guidance on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme effective from January 2018 onwards and € 0.7 billion capital deduction effective from December 2020 based on ECB's supervisory recommendation for a prudential provisioning of non-performing

exposures. Effective June 30, 2020, we make use of the IFRS 9 transitional provision as per Article 473a of the CRR resulting in CET 1 increase of € 0.1 billion as of December 31, 2020.
[3] For the understanding of the term "fully-loaded" please refer to our definition as provided in section "Own Funds".

Reconciliation of shareholders' equity to Own Funds

in € m.	Dec 31, 2020	CRR/CRD Dec 31, 2019
Total shareholders' equity per accounting balance sheet (IASB IFRS)	**54,774**	55,857
Difference between equity per IASB IFRS / EU IFRS[4]	12	0
Total shareholders' equity per accounting balance sheet (EU IFRS)	**54,786**	55,857
Deconsolidation/Consolidation of entities[3]	265	(116)
Of which:		
Additional paid-in capital	0	(12)
Retained earnings	265	(220)
Accumulated other comprehensive income (loss), net of tax	0	116
Total shareholders' equity per regulatory balance sheet	**55,050**	55,741
Minority Interests (amount allowed in consolidated CET 1)	805	837
Accrual for dividend and AT1 coupons[1]	(411)	0
Reversal of deconsolidation/consolidation of the position Accumulated other comprehensive income (loss), net of tax, during transitional period	0	0
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	**55,444**	56,579
Additional value adjustments	(1,430)	(1,738)
Other prudential filters (other than additional value adjustments)	(112)	(150)
Regulatory adjustments relating to unrealized gains and losses pursuant to Art. 467 and 468 CRR	0	0
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	(4,635)	(6,515)
Deferred tax assets that rely on future profitability	(1,445)	(1,445)
Defined benefit pension fund assets (net of related tax liabilities) (negative amount)	(772)	(892)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Other regulatory adjustments[2]	(2,351)	(1,692)
Common Equity Tier 1 capital	**44,700**	44,148

[1] Full year profit is recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).
[2] Includes € 0.4 billion capital deduction effective from April 2019 and € 0.3 billion effective from October 2016 based on regular ECB review, € 0.9 billion capital deduction based on ECB guidance on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme effective from January 2018 onwards, € 0.1 billion negative amounts resulting from the calculation of expected loss amounts and € 0.7 billion capital deduction effective from December 2020 based on ECB's supervisory recommendation for a prudential provisioning of non-performing exposures. Effective June 30, 2020, we make use of the IFRS 9 transitional provision as per Article 473a of the CRR resulting in CET 1 increase of € 0.1 billion as of December 31, 2020.
[3] Includes € 0.4 billion increase due to regulatory changes from cost to at-equity treatment of subsidiaries and participations that are only consolidated under IFRS.
[4] Differences in "equity per balance sheet" result entirely from deviations in profit (loss) after taxes due to the application of EU carve-out rules as set forth in the chapter "Basis of preparation/impact of changes in accounting principles". These rules were initially applied in the first quarter 2020.

Capital management

Our Treasury function manages solvency, capital adequacy, leverage and bail-in capacity ratios at Group level and locally in each region, as applicable. Treasury implements our capital strategy, which itself is developed by the Group Risk Committee and approved by the Management Board. Treasury, directly or through the Group Asset and Liability Committee, manages, among other things, issuance and repurchase of shares and capital instruments, hedging of capital ratios against foreign exchange swings, setting capacities for key financial resources, design of shareholders' equity allocation, and regional capital planning. We are fully committed to maintaining our sound capitalization both from an economic and regulatory perspective. We continuously monitor and adjust our overall capital demand and supply in an effort to achieve an appropriate balance of the economic and regulatory considerations at all times and from all perspectives. These perspectives include book equity based on IFRS accounting standards, regulatory and economic capital as well as specific capital requirements from rating agencies.

Treasury manages the issuance and repurchase of capital instruments, namely Common Equity Tier 1, Additional Tier 1 and Tier 2 capital instruments as well as TLAC/MREL eligible debt instruments. Treasury constantly monitors the market for liability management trades. Such trades represent a countercyclical opportunity to create Common Equity Tier 1 capital by buying back our issuances below par.

Treasury manages the sensitivity of our capital ratios against swings in currencies. For this purpose, Treasury determines which currencies are to be hedged, develops suitable hedging strategies in close cooperation with Risk Management and finally executes these hedges. The capital invested into our foreign subsidiaries and branches in our core currencies Euro, US Dollar, Chinese Renminbi and Pound Sterling is not hedged in order to balance respective effects from movements in capital deduction items and risk weighted assets. The capital invested in non-core currencies is either partly hedged taking capital demand into account or fully hedged.

Resource limit setting

Usage of key financial resources is influenced through the following governance processes and incentives.

Target resource capacities are reviewed in our annual strategic plan in line with our CET 1 and Leverage Ratio ambitions. As a part of our quarterly process, the Group Asset and Liability Committee approves divisional resource limits for total capital demand (defined as the sum of Risk Weighted Assets (RWA) and certain RWA equivalents of Capital Deduction Items) and leverage exposure that are based on the strategic plan but adjusted for market conditions and the short-term outlook. Limits are enforced through a close monitoring process and an excess charging mechanism.

Overall regulatory capital requirements are principally driven by either our CET 1 ratio (solvency) or leverage ratio (leverage) requirements, whichever is the more binding constraint. For the internal capital allocation, the combined contribution of each segment to the Group's Common Equity Tier 1 ratio, the Group's Leverage ratio and the Group's Capital Loss under Stress are weighted to reflect their relative importance and level of constraint to the Group. Contributions to the Common Equity Tier 1 ratio and the Leverage ratio are measured through RWA and Leverage Ratio Exposure (LRE). The Group's Capital Loss under Stress is a measure of the Group's overall economic risk exposure under a defined stress scenario. Goodwill and other intangible assets are directly allocated to the respective segments, supporting the calculation of the allocated tangible shareholders equity and the respective rate of return.

Most of our subsidiaries and a number of our branches are subject to legal and regulatory capital requirements. In developing, implementing and testing our capital and liquidity, we fully take such legal and regulatory requirements into account. Any material capital requests of our branches and subsidiaries across the globe are presented to and approved by the Group Investment Committee prior to execution.

Further, Treasury is represented on the Investment Committee of the largest Deutsche Bank pension fund which sets the investment guidelines for this fund. This representation is intended to ensure that pension assets are aligned with pension liabilities, thus protecting our capital base.

42 – Impact of Deutsche Bank's transformation

On July 7, 2019, Deutsche Bank announced a number of transformational measures relating to the Group's businesses and its organization. The immediate and secondary impacts that these measures had on the Group's operating results and financial position are disclosed below.

Impairment and amortization of Self-developed software

In line with the transformation announcement, the Group reviewed current platform software and software under construction assigned to businesses subject to the transformation strategy. Accordingly, the reassessment of the respective recoverable amounts led to an impairment of self-developed software of € 36 million and € 855 million for the financial year ended December 31, 2020 and 2019, respectively.

In addition, the Group recorded amortization on Equities software subject to the transformation strategy of € 178 million and € 114 million for the financial year ended December 31, 2020 and 2019, respectively. The impairment write-down as well as the software amortization are included within the general and administrative expenses of the Group's results in 2020 and 2019, respectively.

Impairment of Right of Use assets and other related impacts

The Group recognized impairments, accelerated or higher depreciation of Right-of-Use (RoU) assets, asset write downs and accelerated depreciation on leasehold improvements and furniture, onerous contracts provisions for non-lease costs, depreciation of capitalized reinstatement costs and other one-time relocation costs of € 195 million and € 137 million for the financial year ended December 31, 2020 and 2019, respectively. Certain of these costs related to incremental or accelerated decisions are driven by the changes in our expected operations due to the COVID-19 pandemic.

Deferred tax asset valuation adjustments

Each quarter, the Group re-evaluates its estimate related to deferred tax assets, including its assumptions about future profitability. In connection with the transformation the Group adjusted the estimate related to deferred tax assets in affected jurisdictions, such as the UK and the U.S., and recognized € 37 million and € 2.8 billion of valuation adjustments for the financial year ended December 31, 2020 and 2019, respectively.

Restructuring & severance charges

Starting with the announcement of the transformation of Deutsche Bank on July 7, 2019, we designated all restructuring expenses as related to the transformation announcement and the subsequent business re-organization and perimeter changes resulting in € 485 million and € 611 million restructuring expenses for the Group for the financial year ended December 31, 2020 and 2019, respectively. These charges are comprised of termination benefits, additional expenses covering the acceleration of deferred compensation awards not yet amortized due to the discontinuation of employment and contract termination costs related to real estate. 1,447 and 2,564 full-time equivalent employees (FTE) were impacted by the re-organization and changes during the financial year 2020 and 2019, respectively.

In addition to these restructuring expenses, € 203 million and € 97 million of severance related to the transformation announcement were recorded for the financial year ended December 31, 2020 and 2019, respectively.

Other transformation related expenses

As a result of the strategic transformation the Group recognized other transformation related expenses including expenses for Audit, Accounting & Tax, consulting fees and IT consulting fees of € 82 million and € 39 million for the financial year ended December 31, 2020 and 2019, respectively.

43 – Condensed Deutsche Bank AG (parent company only) financial information

In May 2020 the former subsidiary DB Privat- und Firmenkundenbank AG was merged with Deutsche Bank AG effective retrospectively as of January 1, 2020. The comparative data in the subsequent tables was not adjusted.

Condensed statement of income

in € m.	2020	2019	2018
Interest income, excluding dividends from subsidiaries	15,301	17,402	16,326
Dividends received from subsidiaries:			
Bank subsidiaries	166	914	2,511
Nonbank subsidiaries	859	608	2,064
Interest expense	6,274	9,810	9,700
Net interest and dividend income	**10,052**	9,114	11,201
Provision for credit losses	1,444	3,118	102
Net interest and dividend income after provision for credit losses	**8,608**	5,996	11,099
Noninterest income:			
Commissions and fee income	4,414	2,957	3,223
Net gains (losses) on financial assets/liabilities at fair value through profit or loss	1,709	132	1,436
Other income (loss)[1]	1,506	(11,912)	(344)
Total noninterest income	**7,629**	(8,824)	4,315
Noninterest expenses:			
Compensation and benefits	5,641	4,760	4,921
General and administrative expenses	6,950	7,735	6,070
Services provided by (to) affiliates, net	2,730	1,328	1,670
Impairment of goodwill and other intangible assets	0	75	0
Total noninterest expenses	**15,321**	13,898	12,661
Income (loss) before income taxes	**916**	(16,725)	2,753
Income tax expense (benefit)	(34)	1,357	(122)
Net income (loss) attributable to Deutsche Bank shareholders and additional equity components	**950**	(18,083)	2,875

[1] Includes net gains (losses) on financial assets mandatory at fair value through other comprehensive income as well as impairments and write-ups on investments in subsidiaries. In 2020 the gain from the merger of DB Privat-und Firmenkundenbank with Deutsche Bank AG is also included.

Condensed statement of comprehensive income

in € m.	2020	2019	2018
Net income (loss) attributable to Deutsche Bank shareholders and additional equity components	950	(18,083)	2,875
Other comprehensive income (loss), net of tax	(172)	(440)	102
Total comprehensive income (loss), net of tax	**778**	(18,523)	2,977

Condensed balance sheet

in € m.	Dec 31, 2020	Dec 31, 2019
Assets:		
Cash and central bank balances:	138,716	88,912
Interbank balances (w/o central banks):		
Bank subsidiaries	13,980	13,979
Other	4,668	5,560
Central bank funds sold, securities purchased under resale agreements, securities borrowed:		
Bank subsidiaries	0	0
Nonbank subsidiaries	29,165	32,015
Other	7,715	8,927
Financial assets at fair value through profit or loss:		
Bank subsidiaries	1,533	6,950
Nonbank subsidiaries	1,360	1,869
Other	468,875	460,779
Financial assets at fair value through other comprehensive income	74,931	37,871
Investments in associates	183	283
Investment in subsidiaries:		
Bank subsidiaries	6,563	14,569
Nonbank subsidiaries	23,229	21,746
Loans:		
Bank subsidiaries	26,893	36,517
Nonbank subsidiaries	38,095	38,911
Other	313,011	166,871
Other assets:		
Bank subsidiaries	1,095	1,666
Nonbank subsidiaries	11,798	10,930
Other	108,194	101,608
Total assets	**1,270,004**	1,049,962
Liabilities and equity:		
Deposits:		
Bank subsidiaries	21,470	65,461
Nonbank subsidiaries	15,396	19,093
Other	474,012	271,960
Central bank funds purchased, securities sold under repurchase agreements and securities loaned:		
Bank subsidiaries	895	915
Nonbank subsidiaries	36,566	43,703
Other	3,751	3,142
Financial liabilities at fair value through profit or loss:		
Bank subsidiaries	2,003	6,653
Nonbank subsidiaries	559	804
Other	387,389	366,360
Other short-term borrowings:		
Bank subsidiaries	37	656
Nonbank subsidiaries	1,440	1,526
Other	3,313	4,958
Other liabilities:		
Bank subsidiaries	1,125	1,620
Nonbank subsidiaries	6,285	6,021
Other	100,571	92,549
Long-term debt	169,007	119,232
Total liabilities	**1,223,819**	1,004,653
Total shareholders' equity	40,361	40,644
Additional equity components	5,824	4,665
Total equity	**46,185**	45,309
Total liabilities and equity	**1,270,004**	1,049,962

Condensed statement of cash flows

in € m.	2020	2019	2018
Net cash provided by (used in) operating activities	**20,605**	(41,369)	(47,850)
Cash flows from investing activities:			
Proceeds from:			
Sale of financial assets at fair value through other comprehensive income	37,446	14,075	11,592
Maturities of financial assets at fair value through other comprehensive income	29,093	36,236	23,572
Sale of debt securities held to collect at amortized cost	8,239	350	93
Maturities of debt securities held to collect at amortized cost	3,960	195	58
Sale of equity method investments	30	0	5
Sale of property and equipment	12	12	13
Purchase of:			
Financial assets at fair value through other comprehensive income	(75,890)	(47,705)	(34,586)
Debt Securities held to collect at amortized cost	(3,359)	(19,320)	(129)
Investments in associates	(3)	(1)	0
Property and equipment	(387)	(266)	(212)
Net change in investments in subsidiaries	3,427	1,149	289
Other, net	(927)	(861)	(1,024)
Net cash provided by (used in) investing activities	**1,642**	(16,136)	(329)
Cash flows from financing activities:			
Issuances of subordinated long-term debt	1,668	25	10
Repayments and extinguishments of subordinated long-term debt	(1,120)	(11)	(253)
Issuances of trust preferred securities	0	0	0
Repayments and extinguishments of trust preferred securities	0	0	0
Principal portion of lease payments	(479)	(362)	N/A
Common shares issued	0	0	0
Purchases of treasury shares	(279)	(1,359)	(4,119)
Sale of treasury shares	76	1,181	3,925
Additional Equity Components (AT1) issued	1,153	0	0
Purchases of Additional Equity Components (AT1)	(709)	(88)	(123)
Sale of Additional Equity Components (AT1)	721	77	120
Coupon on additional equity components, pre tax	(349)	(330)	(315)
Cash dividends paid	0	(227)	(227)
Net cash provided by (used in) financing activities	**681**	(1,094)	(982)
Net effect of exchange rate changes on cash and cash equivalents	**(799)**	1,163	1,243
Net increase (decrease) in cash and cash equivalents	47,295	(57,436)	(47,918)
thereof: Group internal merger	25,166		
Cash and cash equivalents at beginning of period	82,405	139,841	187,759
Cash and cash equivalents at end of period	129,699	82,405	139,841
Net cash provided by (used in) operating activities include			
Income taxes paid (received), net	916	280	(224)
Interest paid	6,324	10,054	9,793
Interest received	15,905	14,786	19,660
Dividends received	724	4,217	2,957
Cash and cash equivalents comprise			
Cash and central bank balances (not included Interest-earning time deposits with central banks)	124,549	75,180	127,871
Interbank balances (w/o central banks)	5,151	7,225	11,970
Total	**129,699**	**82,405**	**139,841**

Parent company's long-term debt by remaining maturities

By remaining maturities in € m.	Due in 2021	Due in 2022	Due in 2023	Due in 2024	Due in 2025	Due after 2025	Total Dec 31, 2020	Total Dec 31, 2019
Senior debt:								
Bonds and notes:								
Fixed rate	18,444	8,572	10,745	7,488	5,834	12,308	63,391	63,213
Floating rate	7,017	2,882	1,576	3,526	3,903	7,991	26,896	24,057
Other	34,206	1,266	1,031	1,003	902	30,845	69,254	23,718
Subordinated debt								
Bonds and notes:								
Fixed rate	18	0	0	4	2,601	3,424	6,047	6,237
Floating rate	1,121	0	1,100	123	80	423	2,846	1,892
Other	289	15	93	82	0	93	571	115
Total long-term debt	61,095	12,735	14,547	12,226	13,320	55,084	**169,007**	119,232

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

Report of Independent Registered Public Accounting Firm

To the Shareholders and Supervisory Board
Deutsche Bank Aktiengesellschaft:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheet of Deutsche Bank Aktiengesellschaft and subsidiaries (the Company) as of December 31, 2019, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the two-year period ended December 31, 2019, and the related notes and the specific disclosures described in Note 1 to the consolidated financial statements as being part of the financial statements (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2019, in conformity with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

KPMG AG
Wirtschaftsprüfungsgesellschaft

We or our predecessor firms served as the Company's and its predecessor companies' auditor from 1952 to 2019.

Frankfurt am Main, Germany
March 13, 2020

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Supervisory Board of Deutsche Bank Aktiengesellschaft:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of Deutsche Bank Aktiengesellschaft and subsidiaries ("the Company") as of December 31, 2020, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for the year then ended, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2020, and the results of its operations and its cash flows for the year then ended, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated March 8, 2021 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Valuation of level 3 financial instruments and related inputs not quoted in active markets

Description of the Matter

The Company uses valuation techniques to establish the fair value of level 3 financial instruments and related inputs not quoted in active markets. The Company held level 3 financial assets and financial liabilities measured at fair value of EUR 23,583 million and EUR 8,867 million as at December 31, 2020. The relevant financial instruments are reported within financial assets and liabilities at fair value through profit or loss. Information on the valuation techniques, models and methodologies used in the measurement of fair value is provided in notes 1 and 13 of the notes to the consolidated financial statements.

Financial instruments and related inputs that are not quoted in active markets include structured derivatives valued using complex models; derivatives with non-standard collateral arrangements; more-complex OTC derivatives; distressed debt; highly-structured bonds; some private equity placements; many commercial real estate loans; illiquid loans; and some municipal bonds; credit and funding spreads used to determine valuation adjustments (Credit Valuation Adjustment and Funding Valuation Adjustment); and other inputs which cannot be observed mainly for instruments with longer-dated maturities.

Auditing the valuation of level 3 financial instruments and related inputs not quoted in active markets was complex due to the valuation techniques and models being utilized and the unobservability of the significant inputs used.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operational effectiveness of the controls over management's processes to determine fair value of financial instruments and determination of significant unobservable inputs therein, including controls relating to independent price verification; independent validation of valuation models, including assessment of model limitations; monitoring of potentially inappropriate valuation model usage; calculation of fair value adjustments; and the associated controls over relevant information technology systems. We evaluated the valuation techniques, models and methodologies, and tested the inputs used in those models. We performed an independent revaluation of a sample of derivatives and other financial instruments at fair value using independent models and inputs. We also independently assessed the reasonableness of a sample proxy inputs used. In addition, we evaluated the methodology and inputs used by management in determining fair value adjustments against the requirements of IFRS 13 and performed recalculations for a sample of these valuation adjustments using our own independent data and methodology. We involved internal specialists who have particular expertise in the area of financial instruments valuation in the procedures related to valuation models, independent revaluation and fair value adjustments.

Inclusion of forward-looking information in the model-based calculation of expected credit losses

Description of the Matter	As of December 31, 2020, the Company recognized an allowance for credit losses of EUR 5,385m. Information on the inclusion of forward-looking information in the model-based calculation of expected credit losses and their adjustment is provided in notes 1 and 19 of the notes to the consolidated financial statements. The estimated probabilities of default used in the model-based calculation of expected credit losses on non-defaulted financial instruments (IFRS 9 Stage 1 and Stage 2) are based on historical information, combined with current economic developments and forward-looking macroeconomic forecasts (e.g., gross domestic product and unemployment rates). Statistical techniques are then applied to transform the base scenario into a multiple scenario analysis. The scenarios specify deviations from the baseline forecasts. The scenario distribution is then used for deriving multi-year probability of default curves for different rating and counterparty classes, which are applied in the calculation of expected credit losses and in the identification of significant deterioration in credit quality of financial assets. In light of the economic uncertainty arising as a result of the COVID-19 pandemic in the fiscal year, the resulting uncertainty in the estimation of forward-looking information and the impact of government support schemes on the early detection of risks, the Bank made adjustments to the expected credit losses calculated using the conventional credit risk models and forecasting methods. Auditing the forward-looking information, including gross domestic product and unemployment rates, in the model-based calculation of expected credit losses and the adjustment thereof was complex due to the increased uncertainty and use of judgment, including the COVID-19 pandemic.

How We Addressed the Matter in Our Audit	During our audit we obtained an understanding of the processes implemented by the Bank, assessed the design of the controls over the selection, determination and validation of forward-looking information in respect of the requirements under IFRS 9, and tested their design and operating effectiveness. We evaluated the review of the forecasting methods on the basis of the Bank's model validation reports. Furthermore, we evaluated the methods used to include the selected variables in the baseline scenario and the performance of the multi-scenario analysis. We assessed the macroeconomic forecasts used by the Bank as of the reporting date by comparing them with the macroeconomic forecasts produced by external sources. We also evaluated the methodology applied by the Bank in making adjustments. In so doing, we assessed the results of the Bank's sensitivity analyses by drawing on insights from our own benchmark analyses. We also tested that the adjustments were considered in the calculation of expected credit losses according to management's methodology. To audit the inclusion of forward-looking information in the model-based calculation of expected credit losses, we involved internal specialists who have particular expertise in the area of credit risk modeling.

Measurement of goodwill for the Asset Management cash-generating unit

Description of the Matter	As of December 31, 2020, the Company reports goodwill of EUR 2,739m that was exclusively allocated to its Asset Management cash-generating unit (CGU). Information on the measurement of goodwill is provided in notes 1 and 23 of the notes to the consolidated financial statements. The recoverable amount of the Asset Management cash-generating unit is calculated using the discounted cash flow model. In this context, assumptions must be made regarding earnings projections and the discount rate. The discount rate is derived using the Capital Asset Pricing Model. Auditing management's measurement of goodwill for the Asset Management cash-generating unit involved a high degree of judgment due to the earnings projections, applied discount rate and long-term growth rate.
How We Addressed the Matter in Our Audit	During our audit procedures we obtained an understanding of the process for preparing the multi-year plan and calculating the recoverable amount of goodwill for the Asset Management cash-generating unit. In this respect, we also obtained an understanding of management's controls regarding the earnings projections, applied discount rate and long-term growth rate, assessed the design of such controls and tested their effectiveness. Furthermore, we analyzed the significant assumptions described above with a focus on significant changes in the planning assumptions compared with the prior year. In this regard, we assessed the consistency and verifiability of the significant assumptions used in the multi-year plan and also compared them with external market expectations. In analyzing the expected future cash flows of the Asset Management cash-generating unit, we compared the business plan with the prior fiscal year's plan and with the actual results achieved and evaluated any significant deviations. Furthermore, we examined the extent to which the assumptions on the economic development in the detailed planning period and for the perpetual annuity are within a range of externally available forecasts. We examined the valuation parameters used for the estimate of the recoverable amount, such as estimated discount rate and long-term growth rate, in comparison to externally available parameters. We also recalculated the arithmetical accuracy of the valuation model used. To audit the above assumptions involved in the recoverability of goodwill, we involved internal specialists who have particular expertise in the area of business valuation.

Measurement of the unamortized intangible asset from retail investment management agreements in the US ("Scudder")

Description of the Matter	As of December 31, 2020, the Company reports an intangible asset of EUR 706m stemming from agreements to manage a variety of retail mutual funds in the US. These agreements were acquired as part of the acquisition of Zurich Scudder Investments, Inc. (Scudder) in 2002. Information on the measurement of the "Scudder" intangible asset is provided in notes 1 and 23 of the notes to the consolidated financial statements. The recoverable amount is calculated as fair value less costs of disposal using the multi-period excess earnings method on the basis of a multi-year plan of the earnings generated by the investment management agreements and of the expected costs of managing the retail mutual funds. The key assumptions in determining the fair value less costs of disposal include the asset mix, the flows forecast, the effective fee rate and discount rate as well as the long-term growth rate. Auditing the "Scudder" unamortized intangible asset was complex due to judgments made regarding the asset mix, the flows forecast, the effective fee rate and discount rate as well as the long-term growth rate.
How We Addressed the Matter in Our Audit	For our audit, we assessed the process for preparing the multi-year plan and for the further calculation of the recoverable amount of the "Scudder" intangible asset and obtained an understanding of management's controls and assessed the design and operating effectiveness of the controls related to the asset mix, flows forecast, effective fee rate and discount rate as well as the long-term growth rate. Furthermore, we analyzed the significant assumptions described above with a focus on significant changes in the planning assumptions compared with the prior year. In this regard, we assessed the consistency and verifiability of the significant assumptions used in the multi-year plan and also compared them with external market expectations. In analyzing the expected earnings from the investment management agreements, we compared the business plan with the prior fiscal year's plan and with the actual results achieved and evaluated any significant deviations. Furthermore, we examined the extent to which the assumptions on the economic development in the detailed planning period and for the perpetual annuity are within a range of externally available forecasts. We examined the valuation parameters used for the estimate of the recoverable amount, such as estimated discount rate and long-term growth rate, in comparison to externally available parameters. To audit the above assumptions used in the impairment of the "Scudder" intangible asset, we involved internal specialists who have particular expertise in the area of business valuation.

Recognition and measurement of deferred tax assets

Description of the Matter

As of December 31, 2020, the Company reports net deferred tax assets of EUR 5,502 million. Information on the recognition and measurement of deferred tax assets is provided in notes 1 and 34 of the notes to the consolidated financial statements.

The estimation of future ability to utilize such assets depends on the potential for future taxable profit. This is subject to estimation uncertainty and is dependent on the expected development of key assumptions. These include, but are not limited to, assumptions on the forecasted operating results based upon approved business plans, including a review of the eligible carry-forward periods, tax planning opportunities and other relevant considerations.

Auditing the recoverability of deferred tax assets was complex because of the use of judgment in estimates of future taxable profit and the ability to use tax losses and previously unclaimed tax credits.

How We Addressed the Matter in Our Audit

We obtained an understanding of the process for the recognition and measurement of deferred tax assets to determine whether deductible temporary differences and net operating loss carryforwards are identified and measured in accordance with the provisions of tax law and rules for accounting for deferred taxes under IAS 12, evaluated the design and tested the operational effectiveness of the controls. This included, but was not limited to, the assumptions used to develop and allocate elements of the approved business plan as a basis for estimating the future taxable income of the relevant group companies and tax groups.

Furthermore, we verified the methodology for the recognition of deferred tax assets by analyzing the assumptions made in estimating future taxable profits. We assessed the accuracy of the data used to estimate future taxable income by comparing the forecast of future taxable income with historical and externally available prospective data. We also assessed the parameters applied to the approved business plans and performed sensitivity analyses on the outputs for reasonably possible changes in the assumptions. We additionally compared the accuracy of the historical forecasts with the actual results.

To audit the above assumptions involved in the recoverability of the deferred taxes, we involved our tax professionals and internal specialists who have particular knowledge in the area of business valuation.

/s/ Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft

We have served as the Company's auditor since 2020.

Eschborn/Frankfurt am Main, Germany

March 8, 2021

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

3-

Corporate Governance Statement according to Sections 289f and 315d of the German Commercial Code/ Corporate Governance Report

402 Management Board and Supervisory Board
417 Reporting and transparency
417 Related party transactions
418 Auditing and controlling

421 Compliance with the German Corporate Governance Code

All information presented in this Corporate Governance Statement according to Section 289f and 315d of the German Commercial Code is as of February 19, 2021.

Management Board and Supervisory Board

Management Board

The Management Board of Deutsche Bank AG is responsible for the management of the company in accordance with the law, the Articles of Association of Deutsche Bank AG and the Terms of Reference for the Management Board with the objective of creating sustainable value in the interests of the company. It considers the interests of shareholders, employees and other company-related stakeholders. The members of the Management Board are collectively responsible for managing the bank's business. The Management Board, as the Group Management Board, manages Deutsche Bank Group in accordance with uniform guidelines; it exercises general control over all Group companies.

The Management Board decides on all matters prescribed by law and the Articles of Association and ensures compliance with the legal requirements and internal guidelines (compliance). It also takes the necessary measures to ensure that adequate internal guidelines are developed and implemented. The Management Board's responsibilities include, in particular, the bank's strategic management and direction, the allocation of resources, financial accounting and reporting, control and risk management, as well as a properly functioning business organization and corporate control. The Management Board decides on the appointments to the senior management level below the Management Board and, in particular, on the appointment of Global Key Function Holders. In appointing people to management functions in the Group, the Management Board takes diversity into account and strives, in particular, to achieve an appropriate representation of women (more detailed information in section "Targets for the proportion of women in management positions/gender quota" in this Corporate Governance Statement).

The Management Board works closely together with the Supervisory Board in a cooperative relationship of trust and for the benefit of the company. The Management Board reports to the Supervisory Board at a minimum within the scope prescribed by law or administrative guidelines, in particular on all issues with relevance for the Group concerning strategy, the intended business policy, planning, business development, risk situation, risk management, staff development, reputation and compliance.

A comprehensive presentation of the duties, responsibilities and procedures of our Management Board is specified in its Terms of Reference, the current version of which is available on our website (www.db.com/ir/en/documents.htm).

Personnel changes to the Management Board and the current members of the Management Board

The following members of the Management Board were appointed for a three-year period:
- Christiana Riley and Bernd Leukert with effect from January 1, 2020
- Professor Dr. Stefan Simon and Alexander von zur Mühlen with effect from August 1, 2020.

The following members of the Management Board left the Management Board:
- As of July 31, 2020: Werner Steinmüller.

The following, information is provided on the current members of the Management Board on the year in which they were born, year in which they were first appointed and year in which their term expires as well as their current positions and area of responsibility according to the current Business Allocation Plan for the Management Board. Also specified are their other board mandates or directorships outside of Deutsche Bank Group as well as all memberships in legally prescribed supervisory boards or other comparable domestic or foreign supervisory bodies of commercial enterprises. The members of our Management Board have generally undertaken not to assume chairmanships of supervisory boards of companies outside Deutsche Bank Group.

Christian Sewing

Year of birth: 1970
First appointed: 2015
Term expires: 2022

Christian Sewing became a member of our Management Board on January 1, 2015, and Chairman of the Management Board with effect from April 8, 2018. He is responsible on the Management Board for Communications & Corporate Social Responsibility (CSR), Research and Group Audit as well as for the Corporate Bank and the Investment Bank.

Prior to assuming his role on the Management Board, Mr. Sewing was Global Head of Group Audit and held a number of positions before that in Risk, including Deputy Chief Risk Officer (from 2012 to 2013) and Chief Credit Officer (from 2010 to 2012) of Deutsche Bank.

From 2005 until 2007, Mr. Sewing was a member of the Management Board of Deutsche Genossenschafts-Hypothekenbank.

Before graduating with a diploma from the Bankakademie Bielefeld and Hamburg, Mr. Sewing completed a bank apprenticeship at Deutsche Bank in 1989.

Mr. Sewing does not have any external directorships subject to disclosure.

Karl von Rohr

Year of birth: 1965
First appointed: 2015
Term expires: 2023

Karl von Rohr became a member of our Management Board on November 1, 2015, and President as of April 8, 2018. He is responsible on the Management Board for the Private Bank and Asset Management (AM). He is also Regional Chief Executive Officer (CEO) for Germany and since September 2020 has also been responsible for the EMEA Region (Europe, Middle, East and Africa).

Mr. von Rohr joined Deutsche Bank in 1997. From November 2015 to November 2019 he was the Management Board member responsible for Human Resources and until the end of July 31, 2020, he was responsible for Legal, Group Governance and Government & Regulatory Affairs. From 2013 to 2015 he was Global Chief Operating Officer, Regional Management. Prior to this, he was Head of Human Resources for Deutsche Bank in Germany and member of the Management Board of Deutsche Bank Privat- und Geschäftskunden AG. During his time at Deutsche Bank, he has held various senior management positions in other divisions in Germany and Belgium.

He studied law at the universities of Bonn (Germany), Kiel (Germany), Lausanne (Switzerland) and at Cornell University (U.S.A.).

Mr. von Rohr does not have any external directorships subject to disclosure.

Mr. von Rohr is Chairman of the Supervisory Board of DWS Group GmbH & Co. KGaA and was Chairman of the Supervisory Board of DB Privat- und Firmenkundenbank AG until May 15, 2020.

Fabrizio Campelli

Year of birth: 1973
First appointed: 2019
Term expires: 2022

Fabrizio Campelli became a member of our Management Board on November 1, 2019. He is our Chief Transformation Officer and the Management Board member responsible for Transformation and Human Resources.

He previously spent four years as the Global Head of Deutsche Bank Wealth Management. Before that he was Head of Strategy & Organizational Development as well as Deputy Chief Operating Officer for Deutsche Bank Group.

He joined Deutsche Bank in 2004 after working at McKinsey & Company in the firm’s London and Milan offices, focusing on strategic assignments mainly for global financial institutions.

He holds an MBA from MIT Sloan School of Management and a Business Administration degree from Bocconi University in Milan.

Mr. Campelli has been a member of the following Supervisory Boards since June 26, 2020: BVV Versicherungsverein des Bankgewerbes a.G. and BVV Versorgungskasse des Bankgewerbes e.V.

He was Chairman of the Board of Directors of Deutsche Bank (Suisse) SA until December 31, 2020.

Frank Kuhnke

Year of birth: 1967
First appointed: 2019
Term expires: 2021

Frank Kuhnke became a member of our Management Board on January 1, 2019. He is our Chief Operating Officer and is the Management Board member responsible for Global Procurement, Global Real Estate and for Corporate Bank/Investment Bank/Capital Release Unit (CB/IB/CRU) Operations (excluding Settlement Operations) and CB/IB/CRU Know-Your-Customer (KYC) Operations. In addition he is responsible for the Capital Release Unit. Until September 2020 he was responsible for the EMEA Region.

He joined Deutsche Bank in 1986 and was appointed as Deutsche Bank's Chief Operating Officer (COO) in April 2018. From January 2016 until April 2018 he was Divisional Control Officer, Chief Administrative Officer and Head of Operations of the Private & Commercial Bank. Prior to that Mr. Kuhnke was Divisional Control Officer for Deutsche Asset & Wealth Management. From 2012 until 2015 he worked in Deutsche Bank's Non-Core Operations Unit, initially as Chief Risk Officer and subsequently as Chief Operating Officer (COO). Between 2008 and 2012 he held management positions in Risk, based in London. During his career, he has worked across several business divisions and infrastructure functions in Tokyo, New York and Germany and has run global organizations within Deutsche Bank Group.

Before graduating with a diploma from Bank Akademie Lüneburg, Mr. Kuhnke completed a bank apprenticeship at Deutsche Bank.

Mr. Kuhnke does not have any external directorships subject to disclosure.

He was a member of the Supervisory Board of Deutsche Bank Società per Azioni until June 25, 2020.

Bernd Leukert

Year of birth: 1967
First appointed: 2020
Term expires: 2022

Bernd Leukert became a member of our Management Board on January 1, 2020. He is our Chief Technology, Data and Innovation Officer and is responsible for the Chief Information Offices for the Infrastructure areas and the business divisions, Chief Technology Office, Technology Infrastructure, Chief Data Office, Chief Security Office, Strategy & Innovation Network as well as CB/IB/CRU Settlement Operations.

He joined Deutsche Bank on September 1, 2019. He previously worked for many years at SAP SE, the global software company. From 2014 to 2019, he was responsible for product development and innovations as well as the Digital Business Services division on the Executive Board. He joined SAP in 1994 and held various management positions.

Mr. Leukert studied Industrial Engineering and Management at the University of Karlsruhe and at Trinity College Dublin, graduating in 1994 with a Masters Degree in Business Administration.

Mr. Leukert is member of the Supervisory Board of Bertelsmann SE & Co. KGaA and was a member of the Supervisory Board of TomTom N.V. until April 15, 2020.

He has been a member of the Supervisory Board of DWS Group GmbH & Co. KgaA since July 21, 2020.

Stuart Lewis

Year of birth: 1965
First appointed: 2012
Term expires: 2023

Stuart Lewis became a member of our Management Board on June 1, 2012. He is our Chief Risk Officer responsible for the functions managing Credit Risk, Non-Financial Risk, Market Risk and Liquidity Risk as well as for the Risk-Infrastructure units. In addition, he is responsible for Compliance, Anti-Financial Crime (AFC) and the Business Selection and Conflicts Office as well as the United Kingdom & Ireland region.

He joined Deutsche Bank in 1996. Prior to assuming his current role, Mr. Lewis was Deputy Chief Risk Officer and subsequently Chief Risk Officer of the Corporate & Investment Bank from 2010 to 2012. Between 2006 and 2010 he was Chief Credit Officer.

Before joining Deutsche Bank in 1996, he worked at Credit Suisse and Continental Illinois National Bank in London.

He studied at the University of Dundee, where he obtained an LLB (Hons), and he holds an LLM from the London School of Economics. He also attended the College of Law, Guildford.

Mr. Lewis does not have any external directorships subject to disclosure. He has held the position of Visiting Professor in Practice in the Finance Department at the London School of Economics since 2017.

He was Chairman of the Advisory Council of DEUKONA Versicherungs-Vermittlungs-GmbH until August 1, 2020 and Chairman of the Supervisory Board of Deutsche Bank Società per Azioni until June 25, 2020.

James von Moltke

Year of birth: 1969
First appointed: 2017
Term expires: 2023

James von Moltke became a member of our Management Board on July 1, 2017. He is our Chief Financial Officer and in this function he is responsible for, among other things, Finance, Group Tax, Treasury and Investor Relations.

Before Mr. von Moltke joined Deutsche Bank he served as Treasurer of Citigroup. He started his career at Credit Suisse First Boston in London in 1992. In 1995, he joined J.P. Morgan, working at the bank for 10 years in New York and Hong Kong. After next working at Morgan Stanley in New York for four years, where he led the Financial Technology advisory team globally, Mr. von Moltke joined Citigroup as Head of Corporate M&A in 2009. Three years later he became the Global Head of Financial Planning for the U.S. bank.

He holds a Bachelor of Arts degree from New College, University of Oxford.

Mr. von Moltke was a member of the following Supervisory Boards until June 26, 2020: BVV Versicherungsverein des Bankgewerbes a.G. and BVV Versorgungskasse des Bankgewerbes e.V.

Alexander von zur Mühlen

Year of birth: 1975
First appointed: 2020
Term expires: 2023

Alexander von zur Mühlen became a member of our Management Board on August 1, 2020. He is our Regional CEO Asia Pacific.

Mr. von zur Mühlen joined Deutsche Bank in 1998 and over the years has held a range of management roles in London and Frankfurt across infrastructure and business divisions. Between 2018 and 2020 he was responsible for the Group's strategic development and advisor to the Chief Executive Officer (CEO). Before that, he served as Co-Head of Global Capital Markets, with a regional focus on Asia Pacific and EMEA. From 2009 to 2017, he was Group Treasurer.

Alexander von zur Mühlen holds a Diploma in Business Administration from the Berlin School of Economics and Law in Berlin.

Mr. von zur Mühlen does not have any external directorships subject to disclosure.

Christiana Riley

Year of birth: 1978
First appointed: 2020
Term expires: 2022

Christiana Riley became a member of our Management Board on January 1, 2020. She is our Regional CEO Americas.

Mrs. Riley joined Deutsche Bank in 2006 where she was recently the Chief Financial Officer of the Corporate & Investment Bank. She previously spent nine years in Group Strategy & Planning, which she headed from 2011 to 2015. Prior to this Mrs. Riley worked at the management consultancy McKinsey & Company and at the investment bank Greenhill & Co.

She graduated cum laude in 2000 from Princeton University in America where she studied Romance Languages, Literature and Linguistics. She also studied at London Business School in the UK, where she gained a Master of Business Administration in 2005.

Mrs. Riley is a member of the Supervisory Board of The Clearing House Payments Company LLC.

Mrs. Riley is Chief Executive Officer of DB USA Corporation.

Stefan Simon

Year of birth: 1969
First appointed: 2020
Term expires: 2023

Stefan Simon became a member of our Management Board on August 1, 2020. He is our Chief Administrative Officer (CAO) and is responsible for Government and Regulatory Affairs as well as for Legal and Governance.

Mr. Simon joined Deutsche Bank on August 1, 2019. He was a member of Deutsche Bank's Supervisory Board from August 2016 until July 2019 and was Chairman of its Integrity Committee. He is a lawyer and tax consultant and between 1997 and 2016 worked at the law firm Flick Gocke Schaumburg, where he became a partner in 2002. Since 2008 he has also been an Honorary Professor at the University of Cologne.

He studied law at the University of Cologne and received his doctorate there in 1998.

Mr. Simon is Chairman of the Advisory Council of Leop. Krawinkel GmbH & Co. KG.

Supervisory Board

The Supervisory Board of Deutsche Bank AG appoints, supervises and advises the Management Board and is directly involved in decisions of fundamental importance to the bank. It works together closely with the Management Board in a cooperative relationship of trust and for the benefit of the company. The Supervisory Board decides on the appointment and dismissal of members of the Management Board including long-term succession planning for the Management Board based on proposals of the Chairman's Committee while taking into account recommendations of the Nomination Committee. Based on proposals of the Compensation Control Committee, the Supervisory Board determines the total compensation of the individual members of the Management Board resolves on the compensation system for the Management Board and reviews it regularly.

In accordance with Section 9 (1) of the Articles of Association, the members of the Supervisory Board can be elected for the period until the conclusion of the General Meeting which adopts the resolutions concerning the ratification of the acts of management for the fourth financial year following the beginning of the term of office. For the election of shareholder representatives, the General Meeting may establish that the terms of office of individual members may begin or end on differing dates. In accordance with Section 4 (2) of the Terms of Reference for the Supervisory Board, shareholder representatives will be proposed in the future to the General Meeting for election in each case only for a maximum of approximately four years, i.e. until the conclusion of the General Meeting which adopts the resolutions concerning the ratification of the acts of management for the third financial year following the beginning of the term of office, whereby the financial year in which the term of office begins is not taken into account.

The internal organization of the Supervisory Board and its committees as well as the tasks and profiles of the individual members are subject to specific statutory and regulatory requirements that further specify and supplement the corporate-law regulations concerning corporate governance. Such requirements are founded on, among other things, the German Banking Act (Kreditwesengesetz), the Remuneration Ordinance for Institutions (Institutsvergütungsverordnung), the guidelines of the European Banking Authority and the administrative practices of the European Central Bank as our supervisory authority. In individual cases, these are in contradiction to the recommendations of the German Corporate Governance Code ("Code") and, in such case, this may lead to a statement of exceptions in our Declaration of Conformity.

The Supervisory Board receives reports from the Management Board at least within the scope prescribed by law or administrative guidelines, in particular on all issues of relevance for the Group concerning strategy, intended business policy, planning, business development, risk situation, risk management, staff development, reputation and compliance. Furthermore, Group Audit informs the Audit Committee regularly, and in the case of severe deficiencies without undue delay, of any serious deficiencies identified and of any deficiencies that have not yet been remediated. The Chairman of the Supervisory Board is informed accordingly of any serious findings against the members of the Management Board. The Supervisory Board and Management Board adopted an Information Regime, which specifies not only the reporting to the Supervisory Board but also rules relating to the Supervisory Board's enquiries and requests for information from employees of the company, as well as the exchange of information in connection with preparations for the meetings and between the meetings.

The Chairman of the Supervisory Board plays a crucial role in the proper functioning of the Supervisory Board and has a leadership role in this. He can issue internal guidelines and principles concerning the Supervisory Board's internal organization and communications, the coordination of the work within the Supervisory Board and the Supervisory Board's interaction with the Management Board. Between meetings, the Chairman of the Supervisory Board, and, if expedient, the chairpersons of the Supervisory Board committees, maintain regular contact with the Management Board, especially with the Chairman of the Management Board, and deliberate with him on issues of Deutsche Bank Group's strategy, planning, the development of its business, risk situation, risk management, risk controlling, governance, compliance, compensation systems, IT, data and digitalization as well as material litigation cases. The Chairman of the Supervisory Board and – within their respective functional responsibility – the chairpersons of the Supervisory Board committees are informed without delay by the Chairman of the Management Board or by the respectively responsible Management Board member about important events of material significance for the assessment of the situation, development and management of Deutsche Bank Group. The Chairman of the Supervisory Board engages in discussions with investors on Supervisory Board-related topics when necessary and regularly informs the Supervisory Board of the substance of such discussions.

The types of business that require the approval of the Supervisory Board to be transacted are specified in Section 13 of the Articles of Association of Deutsche Bank AG. The Supervisory Board meets regularly without the Management Board. After due consideration and insofar as materially appropriate, the Supervisory Board, or any of its committees, may, in order to perform their tasks, consult auditors, legal advisors and other internal or external advisors. In performing their tasks, the Chairman of the Supervisory Board, the chairpersons of the standing committees and the Supervisory Board members are supported by the Office of the Supervisory Board, which is independent of the Management Board.

The duties, procedures and committees of the Supervisory Board are specified in its Terms of Reference. The current version is available on the Deutsche Bank website (www.db.com/ir/en/documents.htm). The number of meetings that took place during the financial year is stated in the Report of the Supervisory Board.

Members of the Supervisory Board

The Supervisory Board of Deutsche Bank AG has 20 members. In accordance with the German Co-Determination Act (Mitbestimmungsgesetz), it comprises an equal number of shareholder representatives and employee representatives.

The suitability of each individual member to perform their mandate is assessed both internally and externally by the regulatory authorities, determined and monitored continuously. The suitability assessment covers the expertise, reliability and time availability of the individual members. In addition, there is an assessment of the knowledge, skills and experience of the Supervisory Board as a whole that are necessary for it to perform its control function. Passing the suitability assessment and the continual suitability of the Supervisory Board member during the entire mandate with Deutsche Bank AG are mandatory regulatory prerequisites for the performance of their work.

The members representing our shareholders were elected at the General Meeting on May 24, 2018. In departure from this, Dr. Paul Achleitner was first elected at the General Meeting on May 31, 2012, Dr. Gerhard Eschelbeck was elected at the General Meeting on May 18, 2017 and Sigmar Gabriel, Dr. Dagmar Valcárcel and Dr. Theodor Weimer were elected at the General Meeting on May 20, 2020. The election of employee representatives took place on April 26, 2018.

Among the members representing shareholders, Katherine Garrett-Cox left the Supervisory Board effective May 20, 2020. Stephan Szukalski stepped down as an employee representative from the Supervisory Board effective December 31, 2020. For the remainder of his term of office on the Supervisory Board, he is being replaced by the substitute member elected to take his place, Stefan Viertel with effect from January 1, 2021.

The following table shows information on the current members of our Supervisory Board. The information includes the years in which the members were born, the dates on which they were first elected or appointed, the years when their terms expire, their principal occupations as well as their memberships on other companies' supervisory boards, other non-executive directorships and other positions.

Member	Principal occupation	Supervisory board memberships and other directorships
Dr. Paul Achleitner Year of birth: 1956 First elected: May 31, 2012 Term expires: 2022	Chairman of the Supervisory Board, Deutsche Bank AG	Bayer AG; Daimler AG (until July 2020); Henkel AG & Co. KGaA (member of the Shareholders' Committee)
Ludwig Blomeyer-Bartenstein* Year of birth: 1957 First elected: May 24, 2018 Term expires: 2023	Spokesman of the Management and Head of the Market Region Bremen, Deutsche Bank AG	Frowein & Co. Beteiligungs AG; Bürgschaftsbank Bremen GmbH (member of the Board of Directors)
Frank Bsirske* Year of birth: 1952 First elected: May 23, 2013 Term expires: 2023	Supervisory Board member	RWE AG (Deputy Chairman); DB Privat- und Firmenkundenbank AG (until May 2020); innogy SE (Deputy Chairman)
Mayree Carroll Clark Year of birth: 1957 First elected: May 24, 2018 Term expires: 2023	Founder and Managing Partner, Eachwin Capital	Ally Financial, Inc. (Member of the Board of Directors); Taubman Centers, Inc. (Member of the Board of Directors) (until December 2020)
Jan Duscheck* Year of birth: 1984 Appointed by the court: August 2, 2016 Term expires: 2023	Head of national working group Banking, trade union ver.di (Vereinte Dienstleistungsgewerkschaft)	No memberships or directorships subject to disclosure
Dr. Gerhard Eschelbeck Year of birth: 1965 First elected: May 18, 2017 Term expires: 2022	Chief Information Security Officer, Aurora Innovation, Inc.	Onapsis Inc. (Member of the Board of Directors); WootCloud Inc. (Member of the Board of Directors)
Sigmar Gabriel Year of birth: 1959 Appointed by the court: March 11, 2020 Term expires: 2025	Former Federal Minister	GP Papenburg AG; Siemens Energy AG (since September 2020)

Timo Heider* Year of birth: 1975 First elected: May 23, 2013 Term expires: 2023	Chairman of the General Staff Council of BHW Bausparkasse AG / Postbank Finanzberatung AG, Chairman of the General Staff Council of PCC Services GmbH der Deutschen Bank; Chairman of the Staff Council of BHW Bausparkasse AG, PCC Services GmbH der Deutschen Bank, Postbank Finanzberatung AG and BHW Holding GmbH; Deputy Chairman of the Group Staff Council of Deutsche Bank AG	BHW Bausparkasse AG (Deputy Chairman); PCC Services GmbH der Deutschen Bank (Deputy Chairman); Pensionskasse der BHW Bausparkasse AG VVaG (Deputy Chairman)
Martina Klee* Year of birth: 1962 First elected: May 29, 2008 Term expires: 2023	Deputy Chairperson of the Staff Council PWCC Center Frankfurt, Deutsche Bank AG	Sterbekasse für die Angestellten der Deutsche Bank-Gruppe VVaG
Henriette Mark* Year of birth: 1957 First elected: June 10, 2003 Term expires: 2023	Member of the Staff Council Southern Bavaria, of the General Staff Council and of the Group Staff Council of Deutsche Bank	No memberships or directorships subject to disclosure
Gabriele Platscher* Year of birth: 1957 First elected: June 10, 2003 Term expires: 2023	Chairperson of the Staff Council Niedersachsen Ost, Deutsche Bank	BVV Versicherungsverein des Bankgewerbes a.G. (Deputy Chairperson); BVV Versorgungskasse des Bankgewerbes e.V. (Deputy Chairperson); BVV Pensionsfonds des Bankgewerbes AG (Deputy Chairperson)
Detlef Polaschek* Year of birth: 1960 First elected: May 24, 2018 Term expires: 2023	Deputy Chairman of the Supervisory Board; Member of the General Staff Council; Chairman of the Staff Council of Deutsche Bank Niederrhein and Ruhr Region, Central and Eastern Region of Deutsche Bank AG	No memberships of directorships subject to disclosure
Bernd Rose* Year of birth: 1967 First elected: May 23, 2013 Term expires: 2023	Chairman of the General Staff Council of Postbank Filialvertrieb AG; Member of the Group Staff Council and European Staff Council of Deutsche Bank	DB Privat- und Firmenkunden AG (until May 2020); Postbank Filialvertrieb AG; ver.di Vermögensverwaltungsgesellschaft m.b.H. (Deputy Chairman)
Gerd Alexander Schütz Year of birth: 1967 First elected: May 18, 2017 Term expires: 2023	Chairman of the Management Board, C-QUADRAT Investment AG	cyan AG (Chairman) (since January 2021)
John Alexander Thain Year of birth: 1955 First elected: May 24, 2018 Term expires: 2023	Supervisory Board member	Uber Technologies Inc. (Member of the Board of Directors); Aperture Investors LLC (Member of the Board of Directors); Pine Island Capital Partners LLC (Chairman); Pine Island Acquisition Corp. (Chairman of the Board of Directors) (since January 2021)
Michele Trogni Year of birth: 1965 First elected: May 24, 2018 Term expires: 2023	Operating Partner Eldridge Industries LLC	Morneau Shepell Inc. (Member of the Board of Directors) (until September 2020); Capital Markets Gateway Inc. (Chairperson of the Board of Directors) (until August 2020); SE2 LLC (Chairperson of the Board); Horizon Acquisition Corporation (Member of the Board of Directors) (since July 2020)
Dr. Dagmar Valcárcel Year of birth: 1966 Appointed by the court: August 1, 2019 Term expires: 2025	Supervisory Board member	amedes Holding GmbH
Stefan Viertel* Year of birth: 1964 Succession as substitute member: January 1, 2021** Term expires: 2023	Head of Institutional Cash Sales & Client Management Hungary, Member of the General Staff Council, Staff Council Representative of the Corporate Bank and Investment Bank, Deutsche Bank AG	No memberships or directorships subject to disclosure
Dr. Theodor Weimer Year of birth: 1959 First elected: May 20, 2020 Term expires: 2025	Chief Executive Officer, Deutsche Börse AG	Knorr Bremse AG (since June 2020); FC Bayern München AG (until June 2020)
Professor Dr. Norbert Winkeljohann Year of birth: 1957 First elected: August 1, 2018 Term expires: 2023	Supervisory Board member	Bayer AG (Chairman) (since April 2020); Heristo AG (Chairman) (until January 2021); Georgsmarienhütte Holding GmbH; Sievert AG (Chairman); Bohnenkamp AG (Chairman) (since April 2020)

* Employees representatives.
** Mr. Viertel already was a member of the Supervisory Board from August 1, 2010 to May 23, 2013.

Objectives for the composition of the Supervisory Board, Profile of Requirements, diversity concept and status of implementation

The Supervisory Board established objectives for its composition in October 2010 and last amended them as specified in the following in February 2018. Furthermore the Supervisory Board adopted a Profile of Requirements at its meeting on October 26, 2017, and last reviewed and confirmed it, unchanged, at its meeting on October 30, 2020.

The Supervisory Board shall be composed in such a way that its members as a whole possess the knowledge, abilities and expert experience to properly complete its tasks and the members in their entirety of the Supervisory Board and the Audit Committee must be familiar with the banking sector. In particular, the Supervisory Board members should have sufficient time to perform their mandates. The composition of the Supervisory Board should ensure the Supervisory Board's qualified control of and advice for the Management Board of an internationally operating, broadly positioned bank and should preserve the reputation of Deutsche Bank Group among the public. In this regard, in particular, attention should be placed on the integrity, personality, willingness to perform, professionalism and independence of the individuals proposed for election. The objective is for the Supervisory Board as a whole to have all of the knowledge and experience considered to be essential while taking into account the activities of Deutsche Bank Group.

The Supervisory Board, as a whole, must possess the expertise required to effectively monitor and advise the Management Board in its management of Deutsche Bank AG and Deutsche Bank Group – also with regard to the observance of the relevant bank supervisory regulations.

As set out in the Profile of Requirements each Supervisory Board member must have an understanding of the fields of expertise specified below that is appropriate for the size and complexity of Deutsche Bank AG. Experts shall have profound expertise in the individual fields.

The fields of expertise include, in particular, the fields listed below:

- Knowledge in the areas of banking, financial services, financial markets and the financial industry, including the home market and the bank's key markets outside Europe
- Knowledge of the relevant clients for the bank, the market expectations and the operational environment
- Risk management (investigation, assessment, mitigation, management and control of financial and non-financial risks, capital and liquidity management, shareholdings)
- Accounting (according to International Financial Reporting Standards (IFRS) and the German Commercial Code (HGB)) and audits of annual financial statements (financial experts: these members of the Supervisory Board must fulfill the requirements as "financial experts" as such term is defined by the implementation rules of the U.S. Securities and Exchange Commission (SEC) issued pursuant to Section 407 of the Sarbanes-Oxley Act of 2002 and by Section 100 of the German Stock Corporation Act)
- Corporate and social responsibility, including reporting
- Taxation
- Internal audit
- Compliance and internal controls
- Strategic planning, business and risk strategies as well as their implementation
- Digitalization
- Information technology (IT), IT systems and IT security
- Regulatory framework and legal requirements, in particular, knowledge of the legal systems relevant for the bank
- Knowledge of the social, political and regulatory expectations in the home market
- Selection procedure for management body members and assessment of their suitability
- Governance and corporate culture
- Human resources and staff management
- Compensation and compensation systems (compensation expert)
- Management of a large, international regulated company
- Internal organization of the bank

Furthermore, consideration is to be given to the amendments to the current version of the Business Allocation Plan for the Management Board of Deutsche Bank AG as well as to the requirements and expectations of the regulatory authorities.

In addition the Supervisory Board shall have what its shareholder representatives consider to be an adequate number of independent shareholder representatives and shall not have more than two former members of the Management Board of Deutsche Bank AG. In any event, the Supervisory Board shall be composed such that the number of independent members among the shareholder representatives will be at least six. The members of the Supervisory Board may not exercise functions on a management body of, or perform advisory duties, at major competitors. Important and not just temporary conflicts of interest with respect to a member of the Supervisory Board should lead to a termination of the mandate. Members of the

Supervisory Board may not hold more than the allowed number of supervisory board mandates according to Section 25d of the German Banking Act (KWG) or mandates in supervisory bodies of companies which have similar requirements.

There is a regular maximum age limit of 70. In well-founded, individual cases, a Supervisory Board member may be elected or appointed for a period that extends at the latest until the end of the fourth Annual General Meeting that takes place after he or she has reached the age of 70. This age limit was taken into account in the election proposals to the recent General Meetings and shall also be taken into account for the next Supervisory Board elections or subsequent appointments for Supervisory Board positions that become vacant. In July 2020, the Supervisory Board resolved that for members of the Supervisory Board to be elected or appointed in future, the length of each individual Supervisory Board membership shall not, as a rule, exceed 12 years. Otherwise, the respective Supervisory Board member shall not be considered independent.

The Supervisory Board respects diversity when proposing members for appointment to the Supervisory Board. In light of the international operations of Deutsche Bank, care should be taken that the Supervisory Board has an appropriate number of members with long-term international experience. Currently, the professional careers or private lives of six members of the Supervisory Board are centered outside Germany. Furthermore, all of the shareholder representatives on the Supervisory Board have several years of international experience from their current or former activities as management board members or CEOs or a comparable executive function of corporations or organizations with international operations. In these two ways, the Supervisory Board believes the international activities of the company are sufficiently taken into account. The objective is to retain the currently existing international profile. The resumes of the members of the Supervisory Board are published on Deutsche Bank's website (www.db.com/ir/en/supervisory-board.htm).

For the election proposals to the General Meeting, the Supervisory Board takes into account the recommendations of the Nomination Committee and the legal requirements according to which the Supervisory Board shall be composed of at least 30 % women and at least 30 % men. Special importance has already been attached to an appropriate consideration of women in the selection process since the Supervisory Board elections in 2008. In reviewing potential candidates for a new election or subsequent appointments to Supervisory Board positions that have become vacant, qualified women shall be included in the selection process and shall be appropriately considered in the election proposals. For many years now, at least 30 % of the Supervisory Board members have been women and, since 2013, 30 % of the shareholder representatives have been women.

The Supervisory Board believes that it complies with the specified concrete objectives regarding its composition and the Profile of Requirements. The members of the Supervisory Board as a whole possess the knowledge, ability and expert experience to properly complete their tasks. Diversity is appropriately taken into account. At the end of the financial year, six women (30%) and 14 men were members of the Supervisory Board. The statutory minimum quota of 30% was thus fulfilled. In comparison to the prior year, the ratio declined from 35% to 30%, as in 2020 Katherine Garrett-Cox left the Supervisory Board and Dr. Theodor Weimer was elected by the General Meeting. The age structure is diverse, ranging from 35 to 67 years of age at the end of the financial year and spanning three generations, according to the general definition of the term. The length of experience as member of the Supervisory Board of Deutsche Bank ranged from under one year to around 18 years at the end of the financial year. Two of the 20 members of the Supervisory Board joined the Supervisory Board in the 2020 financial year. In accordance with our objectives specified above, all of the shareholder representatives on the Supervisory Board have many years of international experience in various companies and functions. In addition, on January 1, 2021, Mr. Viertel became a substitute member of the Supervisory Board. In addition, on January 1, 2021, Mr. Viertel became a substitute member of the Supervisory Board. The diverse range of the members' educational and professional backgrounds includes banking, business administration, economics, law, German studies, history, political science and information technology.

The bank transparently reports on Supervisory Board diversity beyond the information presented above in this Corporate Governance Statement in the section "Management Board and Supervisory Board: Supervisory Board" as well as on the bank's website: www.db.com (Heading "Investor Relations", "Corporate Governance", "Supervisory Board").

The shareholder representatives on the Supervisory Board determined that it has what they consider to be an adequate number of members among the shareholder representatives who are independent from the Management Board and the company. These are namely: Dr. Paul Achleitner, Mayree Carroll Clark, Dr. Gerhard Eschelbeck, Sigmar Gabriel, Gerd Alexander Schütz, John Alexander Thain, Michele Trogni, Dr. Dagmar Valcárcel, Dr. Theodor Weimer and Professor Dr. Norbert Winkeljohann.

Some members of the Supervisory Board are, or were last year, in high-ranking positions at other companies that Deutsche Bank has business relations with. Business transactions with these companies are conducted under the same conditions as those between unrelated third parties. These transactions, in our opinion, do not affect the independence of the Supervisory Board members involved.

Standing Committees

The Supervisory Board has established the following eight standing committees. To the extent required, the committees coordinate their work and consult each other on an ad hoc basis. The committee chairpersons report regularly to the Supervisory Board on the work of the committees. The Report of the Supervisory Board in the Annual Report 2020 provides information on the concrete work of the committees over the preceding year.

Chairman’s Committee: It is responsible for, in particular: preparing the meetings of the Supervisory Board and handling current business between meetings of the Supervisory Board; preparing for decisions by the Supervisory Board on the appointment and dismissal of members of the Management Board, including long-term succession planning for the Management Board, while taking into account the recommendations of the Nomination Committee; concluding, amending and terminating employment and pension contracts in consideration of the plenary Supervisory Board’s sole authority to decide on the compensation of the members of the Management Board and in consideration of the recommendations of the Compensation Control Committee taking note of and, where necessary, expressing an opinion on contracts and/or amendments to contracts for a General Manager (Generalbevollmächtigter) of Deutsche Bank AG who is designated as an intended member of the Management Board; handling other contractual business with active and former members of the Management Board pursuant to Section 112 of the German Stock Corporation Act; and approving Management Board members’ mandates, honorary offices or special tasks outside of Deutsche Bank Group, while taking the recommendations of the Nomination Committee into account. The Chairman’s Committee is also responsible for: approving the hand-over of confidential internal data concerning a Management Board member in consultation with the Chairman of the Management Board and/or the Chief Risk Officer, unless they have a conflict of interests; approving contracts with Supervisory Board members pursuant to Section 114 of the German Stock Corporation Act; preparing for decisions of the Supervisory Board in the field of corporate governance, deciding in the Supervisory Board’s stead on an adjustment of the annual Declaration of Conformity to changed actual circumstances and verifying compliance with the Declaration of Conformity. Its tasks also include: taking note of and, where necessary, expressing an opinion on the Supervisory Board’s and its committees’ costs for consultations with auditors, experts, legal advisors and other external advisors; as well as preparing recommendations for decisions of the Supervisory Board on pursuing claims for damages or taking other measures against incumbent or former members of the Management Board. As and when necessary, the Chairman’s Committee draws on the expertise of the Chair of the Integrity Committee.

The current members of the Chairman’s Committee are Dr. Paul Achleitner (Chairman), Frank Bsirske, Detlef Polaschek and Professor Dr. Norbert Winkeljohann.

Nomination Committee: It is responsible for, in particular, supporting the Supervisory Board in identifying candidates to fill a position on the bank's Management Board. In doing so, the Nomination Committee takes into account the balance and diversity of the knowledge, skills and experience of all members of the Management Board, prepares a position description with a candidate profile, and states the time commitment. The Nomination Committee and/or the Supervisory Board regularly receive reports from the Management Board on the internal planning and the process from the Management Board’s perspective. Furthermore, the Nomination Committee is responsible in particular for drawing up an objective to promote the representation of the under-represented gender on the Supervisory Board as well as a strategy for achieving this and the regular assessment, to be performed at least once a year, of the structure, size, composition and performance of the Management Board and of the Supervisory Board and making recommendations regarding this to the Supervisory Board. At several meetings of the Nomination Committee and of the Supervisory Board in plenary session, the Nomination Committee and the Supervisory Board addressed the assessment of the Management Board and the Supervisory Board, which is required by the German Banking Act. The Nomination Committee supports the Supervisory Board in drawing up guidelines for the individual and collective assessment of the professional qualifications, personal reliability and time availability of the members of the Management Board and Supervisory Board (“Suitability Guideline”) as well as in monitoring the effectiveness of the Suitability Guideline. Furthermore, the Nomination Committee also supports the Supervisory Board in the regular assessment, to be performed at least once a year, of the knowledge, skills and experience of the individual members of the Management Board and Supervisory Board as well as of the respective body collectively in the assessment of the members of the Management Board and Supervisory Board in all other cases pursuant to the requirements of the Suitability Guideline; and in the review of the Management Board’s principles for selecting and appointing persons to the upper management levels as well as the recommendations made to the Management Board in this respect. The shareholder representatives on the Nomination Committee prepare the Supervisory Board’s proposals for the election or appointment of new shareholder representatives to the Supervisory Board. In this context, they take into account the Profile of Requirements for the Supervisory Board, the criteria specified by the Supervisory Board for its composition as well as the balance and diversity of the knowledge, skills and experience of all members of the Supervisory Board, prepare a position description with a candidate profile, and state the time commitment.

The current members of the Nomination Committee are Mayree Carroll Clark, (Chairperson), Dr. Paul Achleitner, Frank Bsirske, Detlef Polaschek und Professor Dr. Norbert Winkeljohann.

Audit Committee: It supports the Supervisory Board in particular in monitoring the financial reporting process, and it can submit recommendations or suggestions to the Supervisory Board on ensuring the integrity of the financial reporting process. Furthermore, the Audit Committee supports the Supervisory Board in monitoring the effectiveness of the risk management system, particularly of the internal control system and the internal audit system, the auditing of the financial statements, especially with regard to the auditor's independence and the additional services provided by the auditor, and the Management Board's prompt remediation – through suitable measures – of the deficiencies identified by the auditor and bank-internal control functions based on internal and external audits, in particular relating to weaknesses in risk controls, as well as non-compliance with policies, laws and regulatory requirements. The Committee is entitled to inspect all business documentation of the bank, including the business information stored on data carriers. The Audit Committee pre-reviews the annual and consolidated financial statements and management reports as well as the separate non-financial report and the separate consolidated non-financial report, if they were prepared. It discusses the audit reports with the auditor and prepares the decisions of the Supervisory Board on establishing the annual financial statements and the approval of the consolidated financial statements as well as the resolution proposal on the appropriation of distributable profit. The Audit Committee submits corresponding recommendations to the Supervisory Board. It also provides support to the Supervisory Board with regard to engaging any external assurances for the non-financial statement and the consolidated non-financial statement or for the separate non-financial report and separate consolidated non-financial report. It discusses important changes to the audit and accounting methods. The Audit Committee also discusses the quarterly financial statements and the report on the limited review of the quarterly financial statements with the Management Board and the auditor prior to their publication. Furthermore, the Audit Committee submits proposals to the Supervisory Board for the appointment of the auditor and prepares the proposal of the Supervisory Board to the General Meeting for the election of the auditor. The Audit Committee advises the Supervisory Board on issuing the audit mandate to the auditor elected by the General Meeting, submits proposals to the Supervisory Board for the auditor's remuneration and can specify areas of focus for the audit. It supports the Supervisory Board in monitoring the independence, qualifications and efficiency of the auditor as well as the rotation of the members of the audit team. It regularly assesses the quality of the auditing of the financial statements. Mandates for non-audit-related services given to the auditor or to companies to which the auditor is related in legal, economic or personnel terms need the prior consent of the Audit Committee (in this context, see also the Principal Accountant Fees and Services section in this Corporate Governance Statement / Corporate Governance Report). The Audit Committee issues guidelines for the employment of staff – including former staff – of the auditor by the company. It arranges to be informed regularly about the work done by Group Audit, the effectiveness of the internal audit system and in particular about its annual audit plan the focal areas of its auditing activity and on the results of its audits. The Audit Committee is responsible, in particular, for receiving and handling the quarterly, annual and ad hoc reports of Group Audit. The Management Board informs the Audit Committee about special audits, substantial complaints and other exceptional measures on the part of German and foreign bank regulatory authorities. The Committee regularly obtains reports on the receipt and handling of complaints from employees of the bank and its subsidiaries, from shareholders of Deutsche Bank AG and from third parties. In particular complaints concerning accounting, internal accounting controls, auditing and other financial reporting matters must be submitted to the Committee without undue delay. Reports concerning compliance matters and the prevention of money laundering are presented at the meetings of the Committee on a regular basis. The Chairman of the Audit Committee is entitled, in addition to the Chairman of the Supervisory Board, to obtain information directly from the Head of Compliance and the Anti-Money Laundering Officer. The Audit Committee is responsible for acknowledging communications about significant reductions in the budgets of Group Audit as well as the Compliance and Anti-Financial Crime infrastructure areas and for taking receipt of and handling the Compliance Report by the Head of Compliance as well as the Anti-Money Laundering Officer's Report, , which are issued at least once a year. Furthermore, the Committee is entitled to obtain, through its Chairman, information in connection with its tasks from the auditor, the Management Board, the Head of Group Audit and – with the prior consent of the Management Board – senior managers of the bank reporting directly to the Management Board.

The current members of the Audit Committee are Professor Dr. Norbert Winkeljohann (Chairman), Dr. Paul Achleitner, Henriette Mark, Gabriele Platscher, Detlef Polaschek, Bernd Rose, Dr. Dagmar Valcárcel and Dr. Theodor Weimer.

Risk Committee: It advises the Supervisory Board on the overall risk appetite and risk strategy, and oversees the implementation of the stated risk appetite and risk strategy by the senior management level. It discusses and oversees the strategies for capital and liquidity management as well as for all the bank's material risks (financial and non-financial), such as credit, market, liquidity, personnel as well as operational and reputational risks to ensure they are consistent with the stated risk appetite. In its assessment, the Risk Committee reflects whether the material financial products and services offered by the bank as well as the conditions in the client business are in line with the business model and risk structure, thereby taking into account the alignment between the prices assigned to and the profits gained from these products and services.

The committee assesses the bank's current risk profile based on reports from the Management Board. This includes the review of a number of possible stress scenarios and overseeing that the Management Board has in place processes to promote the adherence of Deutsche Bank AG to the applicable risk policies and regulations. The Risk Committee also monitors material aspects of the rating and valuation process.

Furthermore, the Risk Committee oversees the reporting of the Management Board regarding the current state of risk culture and reviews whether the incentives set by the compensation system take into consideration the bank's risk, capital and liquidity structure as well as the likelihood and maturity of earnings, taking into account retention risk.

The Risk Committee also performs all of the tasks assigned to it by law or regulatory authorities, which includes the handling of certain loans including the acquisition of shareholdings in other companies as defined by section 13 (1) c) of the Articles of Association of Deutsche Bank AG, which require approval by the Supervisory Board according to the German Banking Act.

The Risk Committee determines the nature, scope, format and frequency of the information which the Management Board is required to submit on strategy and risks. The Chairperson of the Risk Committee is entitled to obtain, in connection with its activities, information directly from the Management Board and the Head of Group Audit. It collaborates with other committees whose activities may have an impact on the risk strategy (e.g. Audit and Compensation Control Committees) and regularly communicates with the institution's internal control functions, in particular the risk management function.

The current members of the Risk Committee are Mayree Carroll Clark (Chairperson), Dr. Paul Achleitner, Ludwig Blomeyer-Bartenstein, Jan Duscheck, Michele Trogni, Stefan Viertel and Professor Dr. Norbert Winkeljohann.

Integrity Committee: It continually advises and monitors the Management Board with regard to whether management is committed to the economically sound, sustainable development of the company while observing the principles of sound, responsible management, fulfilling the company's social responsibilities and protecting the natural resources of the environment (environmental, social and governance (ESG) issues), and to whether the business management is aligned to these values with the objective of a holistic corporate culture. The Integrity Committee monitors the Management Board's measures that ensure the company's compliance with legal requirements, authorities' regulations and the company's own in-house policies (preventive compliance control) as well as the measures if they are breached (consequence management). It regularly reviews the bank's Code of Conduct and ethics to foster conduct on the part of company employees that is exemplary in every way, both within and outside the company, and that such conduct is not just aligned to the formal compliance with statutory requirements. It supports on request the Risk Committee in monitoring and analyzing the legal and reputational risks that are material to the bank. For this purpose, it advises the Management Board on how to generate awareness of the importance of such risks (e. g. in the bank's codes of conduct and ethics). It supports on request the preparation of the Chairman's Committee's recommendations for Supervisory Board decisions on pursuing recourse claims or taking other measures against current or former members of the Management Board and its Chairperson discusses the recommendations with the Chairman's Committee. Furthermore, the Integrity Committee supports the Supervisory Board in the monitoring of the highest risk associated litigation cases and other material cases.

The current members of the Integrity Committee are Dr. Dagmar Valcárcel (Chairperson), Dr. Paul Achleitner, Ludwig Blomeyer-Bartenstein, Sigmar Gabriel, Timo Heider and Gabriele Platscher.

Compensation Control Committee: It supports the Supervisory Board in the appropriate structuring of the compensation systems for the members of the Management Board. It also monitors the appropriate structure of the compensation systems for the Management Board members and employees and, in particular, the appropriate structure of the compensation for the Head of the compliance function, for the Anti-Money Laundering Officer and for the employees who have a material influence on the bank's overall risk profile. The Compensation Control Committee supports the Supervisory Board in monitoring the process to identify Group risk takers in accordance with Section 27 (2) sentence 1 of the Remuneration Ordinance for Institutions (InstitutsVergV) as well as the appropriate structure of the compensation systems for the company's employees. The Committee assesses the effects of the compensation systems on risk, capital and liquidity management, while ensuring that the compensation systems are aligned to the business strategy focused on the banks sustainable development, to the risk strategies derived from this and to the compensation strategies at the company and Group levels. It prepares the Supervisory Board's resolutions on the compensation of the Management Board, considering, in particular, the effects of the resolutions on the company's risks and risk management. The long-term interests of shareholders, investors and other stakeholders as well as the public interest are also taken into account. It also prepares the Supervisory Board's resolutions on setting the total amount of variable compensation for the members of the Management Board in accordance with Section 45 (2) sentence 1 No. 5a of the German Banking Act (KWG) in consideration of Section 7 of the Remuneration Ordinance for Institutions (InstitutsVergV) and on setting the appropriate compensation parameters, targets for contributions to performance, payment and deferral periods as well as the conditions for a full forfeiture or partial reduction of variable compensation. It also checks regularly, at least annually, whether the adopted specifications are still appropriate. Furthermore, it checks, as part of its support to the Supervisory Board in monitoring the appropriate structure of the compensation systems for employees, regularly, but at least annually, in particular, whether the total amount of variable compensation has been set in accordance with Section 45 (2) sentence 1 No. 5a of the German Banking Act (KWG) in consideration of Section 7 of the Remuneration Ordinance for Institutions (InstitutsVergV) and whether the specified principles to assess the compensation parameters, contributions to performance as well as the payment and deferral periods, including the conditions for a full forfeiture or partial reduction of the variable compensation, are appropriate. In addition, it supports the Supervisory Board in monitoring whether the internal controls and other relevant areas are properly involved in the structuring of the compensation systems. The Committee is authorized to obtain, via its Chairperson, information relating to the Committee tasks from the Head of Group Audit and from the heads of the organizational units responsible for structuring the compensation systems.

The current members of the Compensation Control Committee are Dr. Paul Achleitner (Chairman), Frank Bsirske, Dr. Gerhard Eschelbeck, Detlef Polaschek, Bernd Rose and Dr. Dagmar Valcárcel.

Strategy Committee: It supports the Supervisory Board in fulfilling its oversight responsibilities relating to the bank's strategy. It advises and monitors the Management Board with regard to the definition of business strategies geared to the sustainable development of the bank and the establishment of processes for planning, implementing, assessing and adjusting the business strategy. It oversees the Management Board's work on the strategic perspective, direction and development of the strategy for Deutsche Bank Group and its business divisions, the Management Board's implementation of the strategic plan and the execution progress against strategic milestones and goals, as well as the Management Board's implementation of major business transformation projects and their execution. It advises the Management Board as to whether the governance, risk appetite, financial and capital planning, liquidity and funding management, control environment and resources can support the bank's strategic objectives, and advises on divestitures and merger and acquisition strategy, including post-transaction performance tracking, as well as on the impact of changes in the competitive environment. Furthermore, the Strategy Committee advises the Management Board in preparation for the Supervisory Board meetings at which the Supervisory Board plenum addresses the company's strategy and prepares the Supervisory Board's decisions on transactions subject to its approval pursuant to Section 13 (1) b) and (1) d) of the Articles of Association.

The current members of the Strategy Committee are John Alexander Thain (Chairman), Dr. Paul Achleitner, Frank Bsirske, Mayree Carroll Clark, Timo Heider, Henriette Mark, Detlef Polaschek and Michele Trogni.

Technology, Data and Innovation Committee: It supports the Supervisory Board in fulfilling its oversight responsibilities relating to the bank's innovation, data and technology environment. It continually advises and monitors the Management Board with regard to the adequate technical and organizational resources and the definition of an adequate plan for IT systems, including their application with generally established standards to the arrangement of the IT systems and the related IT processes. This includes in particular the oversight over the Management Board's work on the IT strategy and its sustainability outlining the objectives and measures to be taken to achieve these objectives, the IT governance, the information security management, the user access management, the implementation of major IT projects and application development, IT operation, including data backup, outsourcing and other external procurement of IT services, data governance and data strategy, including their implementation, and any other material issues which may arise in connection with the IT systems and services or data quality.

The current members of the Technology, Data and Innovation Committee are Michele Trogni (Chairperson), Dr. Paul Achleitner, Jan Duscheck, Dr. Gerhard Eschelbeck, Martina Klee and Bernd Rose.

Mediation Committee: In addition to these eight standing committees, the Mediation Committee, which is required by German law, makes proposals to the Supervisory Board on the appointment or dismissal of members of the Management Board in cases where the Supervisory Board is unable to reach a two-thirds majority decision with respect to the appointment or dismissal. The Mediation Committee only meets if necessary.

The current members of the Mediation Committee are Dr. Paul Achleitner (Chairman), Frank Bsirske, Detlef Polaschek and Professor Dr. Norbert Winkeljohann.

Further details regarding the Chairman's Committee, the Nomination Committee, the Audit Committee, the Risk Committee, the Integrity Committee, the Compensation Control Committee, the Strategy Committee and the Technology, Data and Innovation Committee are regulated in separate Terms of Reference. The current versions are available on our website, along with the Terms of Reference for the Supervisory Board (see: www.db.com/ir/en/documents.htm).

Self-assessment of the work of the Supervisory Board and of its committees

In 2020, the Supervisory Board performed the self-assessment of the work of the Supervisory Board and of its committees pursuant to the recommendation in Section D.13 of the German Corporate Governance Code. Based on the statutory requirements for financial institutions pursuant to Section 25d (11) sentence 2 Nos. 3 and 4 of the German Banking Act (KWG), Deutsche Bank is required in any event to perform a self-assessment of the Supervisory Board at least annually. The Nomination Committee and Supervisory Board addressed the assessment prescribed by law at several meetings. The concrete implementation of and the schedule for the assessment were deliberated on and set out at the meetings of the Nomination Committee on July 29, 2020, and September 22, 2020. Services of an external advisor were not mandated in this context. The assessment was performed essentially on the basis of extensive questionnaires regarding the work of the Supervisory Board, of the Supervisory Board committees and of the Management Board, individual interviews conducted by members of the Nomination Committee with the members of the Management Board, and an assessment of the individual members of both the Management Board and Supervisory Board. The final discussion of the assessment took place at the Supervisory Board meeting in plenum on February 3, 2021, and the results were set out in a final report. The Supervisory Board continues to hold the opinion that the Supervisory Board and Management Board have achieved a high standard and that there are no reservations, in particular, regarding the professional qualifications, personal reliability and time availability of the members of the Management Board and of the Supervisory Board. Furthermore, as one of the outcomes of the assessment against the backdrop of the progress achieved by the bank in its strategic transformation, the Supervisory Board will address the distribution of tasks across its committees.

Share Plans

For information on our employee share programs, please refer to the additional Note 33 "Employee Benefits" to the Consolidated Financial Statements.

Reporting and transparency

Directors' share ownership

Management Board. For information on the share ownership of the Management Board, please refer to our detailed Compensation Report in the Management Report.

Supervisory Board. The members of our Supervisory Board held the following numbers of our shares and share awards under our employee share plans.

Members of the Supervisory Board	Number of shares	Number of share awards
Dr. Paul Achleitner	145,000	0
Ludwig Blomeyer-Bartenstein	3,694	3,220
Frank Bsirske	0	0
Mayree Carroll Clark	109,444	0
Jan Duscheck	0	0
Dr. Gerhard Eschelbeck	0	0
Sigmar Gabriel	0	0
Timo Heider	0	0
Martina Klee	2,493	0
Henriette Mark	1,524	0
Gabriele Platscher	1,549	10
Detlef Polaschek	655	10
Bernd Rose	0	0
Gerd Alexander Schütz	0	0
John Alexander Thain	100,000	0
Michele Trogni	15,000	0
Dr. Dagmar Valcárcel	0	0
Stefan Viertel	1,007	0
Dr. Theodor Weimer	108,000	0
Professor Dr. Norbert Winkeljohann	0	0
Total	488,366	3,240

[1] Restricted Equity Awards. Mr. Blomeyer-Bartenstein has an entitlement linked to 3,220 shares through Restricted Equity Awards as part of his variable compensation. These are due in 2021 till 2025.

The members of the Supervisory Board held 488,366 shares, amounting to less than 0,03 % of our shares as of February 19, 2021.

As listed in the "Number of share awards" column in the table, the members who are employees of Deutsche Bank hold matching awards granted under the Global Share Purchase Plan, which are scheduled to be delivered to them on November 1, 2021, as well as Restricted Equity Awards (deferred share awards), which are granted to employees with deferred variable compensation. The latter are marked separately in the table, and the further details concerning them as a compensation instrument are reported in the section "Employee Compensation Report".

As described in the "Management Report: Compensation Report: Compensation System for Supervisory Board Members", 25 % of each member's compensation for services as a member of the Supervisory Board for a given prior year is, rather than being paid in cash, converted into notional shares of Deutsche Bank AG in February of the following year. The cash value of the notional shares is paid to the member in February of the year following their departure from the Supervisory Board or the expiration of their term of office, based on the market price of the Deutsche Bank share near the payment date. The table in the section specified above shows the number of notional shares that will be credited in spring 2021 to members of the Supervisory Board as part of their 2020 compensation.

Related party transactions

For information on related party transactions please refer to Note 36 "Related Party Transactions".

Auditing and controlling

Audit Committee Financial Expert

The Supervisory Board determined that the following members of its Audit Committee are “audit committee financial experts”, as such term is defined by the implementation rules of the U.S. Securities and Exchange Commission issued pursuant to Section 407 of the Sarbanes-Oxley Act of 2002 Dr. Paul Achleitner, Dr. Dagmar Valcárcel, Dr. Theodor Weimer and Professor Dr. Norbert Winkeljohann. These audit committee financial experts are “independent” of the bank, as defined in Rule 10A-3 under the U.S. Securities Exchange Act of 1934. In accordance with the provisions of Sections 107 (4) and 100 (5) of the German Stock Corporation Act (AktG) as well as Section 25d (9) of the German Banking Act (KWG), they have the required expert knowledge in financial accounting and auditing.

Compensation Control Committee Compensation Expert

Pursuant to Section 25d (12) of the German Banking Act (KWG), at least one member of the Compensation Control Committee must have sufficient expertise and professional experience in the field of risk management and risk controlling, in particular, with regard to the mechanisms to align compensation systems to the company’s overall risk appetite and strategy and the bank’s capital base. The Supervisory Board determined that Dr. Paul Achleitner, Chairman of the Compensation Control Committee and Dr. Dagmar Valcárcel fulfill the requirements of Section 25d (12) of the German Banking Act (KWG) and therefore have the required expertise and professional experience in risk management and risk controlling.

For a description of the experience of the Supervisory Board members mentioned in the two foregoing paragraphs, please see “Management Report: Corporate Governance Statement/Corporate Governance Report: Management Board and Supervisory Board: Supervisory Board” in the Annual Report 2020.

Values and leadership principles of Deutsche Bank AG and Deutsche Bank Group

Deutsche Bank Group Code of Conduct and Code of Ethics for Senior Financial Officers

Deutsche Bank Group’s Code of Conduct sets out Deutsche Banks’s purpose, values and beliefs and minimum standards of conduct that we expect all members of our Management Board and employees to follow. These values and standards govern employee interactions with our clients, competitors, business partners, government and regulatory authorities, and shareholders, as well as with other employees. In addition, the Code forms the cornerstone of our policies, which provide guidance on compliance with applicable laws and regulations.

In accordance with Section 406 of the Sarbanes-Oxley Act of 2002, we adopted a Code of Ethics for Senior Financial Officers of Deutsche Bank AG and Deutsche Bank Group with special obligations that apply to our “senior financial officers”, which currently consist of Deutsche Bank’s Chairman of the Management Board, Chief Financial Officer, Group Controller as well as certain other senior financial officers. There were no amendments or waivers to this Code of Ethics in 2020.

The current versions of the Code of Conduct as well as the Code of Ethics for Senior Financial Officers of Deutsche Bank AG and Deutsche Bank Group are available from Deutsche Bank’s website: www.db.com/ir/en/documents.htm.

Corporate Governance at Deutsche Bank AG and Deutsche Bank Group

Deutsche Bank established a Group Governance function to define, implement and monitor the corporate governance framework of Deutsche Bank AG and Deutsche Bank Group and to perform this governance function throughout the Group. Group Governance addresses corporate governance issues in Deutsche Bank AG and Deutsche Bank Group, while focusing closely on clear organizational structures aligned to the key elements of good corporate governance.

Deutsche Bank AG and Deutsche Bank Group are committed to ensuring a corporate governance framework in accordance with international standards and statutory provisions. In support of this objective, Deutsche Bank AG and Deutsche Bank Group have instituted clear corporate governance principles.

Further details on corporate governance are published on Deutsche Bank's website (www.db.com/ir/en/corporate-governance.htm).

Principal accountant fees and services

In accordance with German law, our principal accountant is appointed at our Annual General Meeting based on a recommendation of our Supervisory Board. The Audit Committee of our Supervisory Board prepares such a recommendation. Subsequent to the principal accountant's appointment, the Audit Committee awards the contract and in its sole authority approves the terms and scope of the audit and all audit engagement fees as well as monitors the principal accountant's independence. Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft („EY") became our principal accountant for the 2020 fiscal year. KPMG AG Wirtschaftsprüfungsgesellschaft was our principal accountant for the 2019 fiscal year.

The tables set forth below contain the aggregate fees billed for 2019 fiscal year by KPMG AG Wirtschaftsprüfungsgesellschaft and billed for 2020 fiscal year by EY in each of the following categories: (1) Audit fees, which are fees for professional services for the audit of our annual financial statements or services that are normally provided by the accountant in connection with statutory and regulatory filings or engagements for those fiscal years, (2) Audit-related fees, which are fees for assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and are not reported as Audit fees, (3) Tax-related fees, which are fees for professional services rendered for tax compliance, tax consulting and tax planning, and (4) All other fees, which are fees for products and services other than Audit fees, Audit-related fees and Tax-related fees. These amounts include expenses and exclude Value Added Tax (VAT).

Fees billed by EY

Fee category in € m.	2020	2019
Audit fees	53	0
Audit-related fees	5	0
Tax-related fees	0	0
All other fees	0	0
Total fees [1]	**58**	0

Fees billed by KPMG AG

Fee category in € m.	2020	2019
Audit fees	0	60
Audit-related fees	0	13
Tax-related fees	0	4
All other fees	0	0
Total fees [1]	**0**	77

The Audit fees include fees for professional services for the audit of our annual financial statements and consolidated financial statements and do not include the 2020 audit fees for DWS and its subsidiaries that are not audited by EY. The Audit-related fees include fees for other assurance services required by law or regulations, in particular for financial service specific attestation, for quarterly reviews, for spin-off audits and for merger audits, as well as fees for voluntary assurance services, like voluntary audits for internal management purposes and the issuance of comfort letters. Our Tax-related fees include fees for services relating to the preparation and review of tax returns and related compliance assistance and advice, tax consultation and advice relating to Group tax planning strategies and initiatives and assistance with assessing compliance with tax regulations.

Under SEC regulations, the principal accountant fees are required to be presented as follows: audit fees were € 55 million in 2020 compared to € 62 million in 2019, audit-related fees were € 3 million in 2020 compared to € 11 million in 2019, tax-related fees were € 0 million in 2020 compared to € 4 million in 2019, and all other fees were € 0 million in 2020 compared to € 0 million in 2019. Fees in 2020 are paid to EY compared to fees in 2019 which were paid to KPMG.

United States law and regulations, and our own policies, generally require that all engagements of our principal accountant be pre-approved by our Audit Committee or pursuant to policies and procedures adopted by it. Our Audit Committee has adopted the following policies and procedures for consideration and approval of requests to engage our principal accountant to perform non-audit services. Engagement requests must in the first instance be submitted to the Accounting Engagement Team. If the request relates to services that would impair the independence of our principal accountant, the request must be rejected. Our Audit Committee has given its pre-approval for specified assurance, financial advisory and tax services, provided the expected fees for any such service do not exceed € 1 million. If the engagement request relates to such specified pre-approved services, it may be approved by the Accounting Engagement Team and must thereafter be reported to the Audit Committee. If the engagement request relates neither to prohibited non-audit services nor to pre-approved non-audit services, it must be forwarded to the Audit Committee for consideration. In addition, to facilitate the consideration of engagement requests between its meetings, the Audit Committee has delegated approval authority to several of its members who are "independent" as defined by the Securities and Exchange Commission and the New York Stock Exchange. Such members are required to report any approvals made by them to the Audit Committee at its next meeting.

Additionally, United States law and regulations permit the pre-approval requirement to be waived with respect to engagements for non-audit services aggregating to no more than five percent of the total amount of revenues we paid to our principal accountant, if such engagements were not recognized by us at the time of engagement and were promptly brought to the attention of our Audit Committee or a designated member thereof and approved prior to the completion of the audit. In 2019 and 2020, the percentage of the total amount of revenues we paid to our principal accountant for non-audit services that was subject to such a waiver was less than 5 % for each year.

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

4-

Supplementary Information (Unaudited)

427 Non-GAAP financial measures
435 Declaration of backing
436 Group five-year record
437 Imprint/ Publications

Non-GAAP financial measures

This document and other documents the Group has published or may publish contain non-GAAP financial measures. Non-GAAP financial measures are measures of the Group's historical or future performance, financial position or cash flows that contain adjustments that exclude or include amounts that are included or excluded, as the case may be, from the most directly comparable measure calculated and presented in accordance with IFRS in the Group's financial statements.

Return on equity ratios

The Group reports a post-tax return on average shareholders' equity and a post-tax return on average tangible shareholders' equity, each of which is a non-GAAP financial measure.

The post-tax returns on average shareholders' equity and average tangible shareholders' equity are calculated as profit (loss) attributable to Deutsche Bank shareholders after AT1 coupon as a percentage of average shareholders' equity and average tangible shareholders' equity, respectively.

Profit (loss) attributable to Deutsche Bank shareholders after AT1 coupon for the segments is a non-GAAP financial measure and is defined as profit (loss) excluding post-tax profit (loss) attributable to noncontrolling interests and after AT1 coupon, which are allocated to segments based on their allocated average tangible shareholders' equity. For the Group, it reflects the reported effective tax rate, which was 39 % for the full year 2020, (100) % for 2019 and 74 % for 2018. For the segments, the applied tax rate was 28 % for all reported periods in 2020, 2019 and 2018.

At the Group level, tangible shareholders' equity is shareholders' equity as reported in the Consolidated Balance Sheet excluding goodwill and other intangible assets. Tangible shareholders' equity for the segments is calculated by deducting goodwill and other intangible assets from shareholders' equity as allocated to the segments. Shareholders' equity and tangible shareholders' equity are presented on an average basis.

The Group believes that a presentation of average tangible shareholders' equity makes comparisons to its competitors easier, and refers to this measure in the return on equity ratios presented by the Group. However, average tangible shareholders' equity is not a measure provided for in IFRS, and the Group's ratios based on this measure should not be compared to other companies' ratios without considering differences in the calculations.

The reconciliation of the aforementioned ratios is set forth in the table below:

							2020
in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total
Profit (loss) before tax	561	3,171	(124)	544	(2,201)	(948)	1,003
Profit (loss)	404	2,283	(89)	391	(1,584)	(793)	612
Profit (loss) attributable to noncontrolling interests	0	0	0	0	0	129	129
Profit (loss) attributable to DB shareholders and additional equity components	**404**	**2,283**	**(89)**	**391**	**(1,584)**	**(922)**	**483**
Profit (loss) attributable to additional equity components	72	169	79	14	48	0	382
Profit (loss) attributable to Deutsche Bank shareholders	332	2,114	(168)	378	(1,632)	(922)	101
Average allocated shareholders' equity	9,904	22,943	11,521	4,760	6,205	(23)	55,308
Deduct: Average allocated goodwill and other intangible assets[1]	602	1,134	1,255	2,993	143	0	6,127
Average allocated tangible shareholders' equity	**9,302**	**21,809**	**10,266**	**1,767**	**6,062**	**(23)**	**49,182**
Post-tax return on average shareholders' equity	3.3 %	9.2 %	(1.5) %	7.9 %	(26.3) %	N/M	0.2 %
Post-tax return on average tangible shareholders' equity	3.6 %	9.7 %	(1.6) %	21.4 %	(26.9) %	N/M	0.2 %

[1] Goodwill and other intangible assets related to the share of DWS that is not held by Deutsche Bank are excluded since the first quarter of 2018

in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	2019 Total
Profit (loss) before tax	92	502	(279)	468	(3,170)	(247)	(2,634)
Profit (loss)	66	361	(201)	337	(2,283)	(3,546)	(5,265)
Profit (loss) attributable to noncontrolling interests	0	0	0	0	0	125	125
Profit (loss) attributable to DB shareholders and additional equity components	66	361	(201)	337	(2,283)	(3,670)	(5,390)
Profit (loss) attributable to additional equity components	60	132	62	11	63	0	328
Profit (loss) attributable to Deutsche Bank shareholders	6	229	(263)	326	(2,346)	(3,670)	(5,718)
Average allocated shareholders' equity	10,464	23,052	11,729	4,821	10,105	0	60,170
Deduct: Average allocated goodwill and other intangible assets[1]	780	1,824	1,731	3,032	160	0	7,528
Average allocated tangible shareholders' equity	9,684	21,227	9,998	1,789	9,945	0	52,643
Post-tax return on average shareholders' equity	0.1 %	1.0 %	(2.2) %	6.8 %	(23.2) %	N/M	(9.5) %
Post-tax return on average tangible shareholders' equity	0.1 %	1.1 %	(2.6) %	18.2 %	(23.6) %	N/M	(10.9) %

Prior year segmental information presented in the current structure
[1] Goodwill and other intangible assets related to the share of DWS that is not held by Deutsche Bank are excluded since the first quarter of 2018

in € m. (unless stated otherwise)	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	2018 Total
Profit (loss) before tax	1,254	958	616	368	(1,404)	(461)	1,330
Profit (loss)	903	690	443	265	(1,011)	(949)	341
Profit (loss) attributable to noncontrolling interests	0	0	0	0	0	75	75
Profit (loss) attributable to DB shareholders and additional equity components	903	690	443	265	(1,011)	(1,023)	267
Profit (loss) attributable to additional equity components	61	134	63	8	54	0	319
Profit (loss) attributable to Deutsche Bank shareholders	842	556	380	258	(1,065)	(1,023)	(52)
Average allocated shareholders' equity	10,927	22,629	12,397	4,837	11,704	115	62,610
Deduct: Average allocated goodwill and other intangible assets[1]	1,029	2,086	2,035	3,024	199	14	8,386
Average allocated tangible shareholders' equity	9,898	20,542	10,363	1,814	11,505	101	54,224
Post-tax return on average shareholders' equity	7.7 %	2.5 %	3.1 %	5.3 %	(9.1) %	N/M	(0.1) %
Post-tax return on average tangible shareholders' equity	8.5 %	2.7 %	3.7 %	14.2 %	(9.3) %	N/M	(0.1) %

Prior year segmental information presented in the current structure
[1] Goodwill and other intangible assets related to the share of DWS that is not held by Deutsche Bank are excluded since the first quarter of 2018

Core Bank

The Core Bank represents the Group excluding the Capital Release Unit (CRU).

in € m. (unless stated otherwise)	2020	2019	2018
Profit (loss) before tax	3,204	536	2,735
Profit (loss)	2,196	(2,982)	1,352
Profit (loss) attributable to noncontrolling interests	129	125	75
Profit (loss) attributable to Deutsche Bank shareholders and additional equity components	**2,068**	**(3,107)**	**1,278**
Profit (loss) attributable to additional equity components	334	266	266
Profit (loss) attributable to Deutsche Bank shareholders	1,734	(3,372)	1,012
Average allocated shareholders' equity	49,104	50,065	50,905
Deduct: Average allocated goodwill and other intangible assets	5,984	7,368	8,187
Average allocated tangible shareholders' equity	**43,119**	**42,698**	**42,718**
Post-tax return on average shareholders' equity	3.5 %	(6.7) %	2.0 %
Post-tax return on average tangible shareholders' equity	4.0 %	(7.9) %	2.4 %

Prior year segmental information presented in the current structure

in € m. (unless stated otherwise)	2020	2019	2018
Profit (loss) before tax - Group	**1,003**	**(2,634)**	**1,330**
Profit (loss) before tax - CRU	(2,201)	(3,170)	(1,404)
Profit (loss) before tax - Core Bank	**3,204**	**536**	**2,735**
Specific revenue items	(38)	(108)	(691)
Transformation charges	328	635	0
Impairment of goodwill / other intangibles	0	1,037	0
Restructuring & severance	671	649	494
Adjusted profit (loss) before tax – Core Bank	**4,165**	**2,749**	**2,537**

Prior year segmental information presented in the current structure

Transformation charges

Transformation charges are costs, included in adjusted costs, that are directly related to Deutsche Bank's transformation as a result of the strategy announced on July 7, 2019 and certain costs related to incremental or accelerated decisions driven by the changes in our expected operations due to the COVID-19 pandemic. Such charges include the transformation-related impairment of software and real estate, the accelerated software amortization and other transformation charges like onerous contract provisions or legal and consulting fees related to the strategy execution. The table represents the transformation charges by the respective cost category.

in € m.	2020	2019
Compensation and benefits	8	0
IT costs	257	977
Professional service fees	18	12
Occupancy, furniture and equipment expenses	196	137
Communication, data services, marketing	7	0
Other	4	18
Transformation charges	**490**	**1,145**

Adjusted costs

Adjusted costs is one of the key performance indicators and is a non-GAAP financial measure for which the most directly comparable IFRS financial measure is noninterest expenses. Adjusted costs is calculated by deducting (i) impairment of goodwill and other intangible assets, (ii) net litigation charges and (iii) restructuring and severance from noninterest expenses under IFRS. The Group believes that a presentation of noninterest expenses excluding the impact of these items provides a more meaningful depiction of the costs associated with our operating businesses. To show the development of our cost initiatives excluding costs that are directly related to Deutsche Bank's transformation as a result of the strategy announced on July 7, 2019, the Group also presents Adjusted costs excluding transformation charges, in which the transformation charges described above are deducted from Adjusted costs.

In addition, BNP Paribas and Deutsche Bank have signed a master transaction agreement to provide continuity of service to Deutsche Bank's Prime Finance and Electronic Equities clients. Under the agreement Deutsche Bank will continue to operate the platform until clients can be migrated to BNP Paribas, and BNP Paribas reimburses Deutsche Bank for the eligible expenses of the transferred business. To show the development of our cost initiatives excluding not only transformation charges but also these eligible reimbursable expenses, the Group also presents Adjusted costs excluding transformation charges and expenses eligible for reimbursement related to Prime Finance.

							2020
in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total consolidated
Noninterest expenses	4,218	5,413	7,539	1,527	1,947	572	21,216
Impairment of goodwill and other intangible assets	0	0	0	0	0	0	0
Litigation charges, net	99	20	83	(1)	25	(67)	158
Restructuring and severance	78	26	520	37	17	10	688
Adjusted costs	4,041	5,368	6,936	1,490	1,906	629	20,370
Transformation charges	59	84	122	5	162	58	490
Adjusted costs ex. transformation charges	3,982	5,284	6,813	1,485	1,744	571	19,880
Expenses eligible for reimbursement related to Prime Finance							360
Adjusted costs ex. transformation charges and expenses eligible for reimbursement related to Prime Finance							19,520

							2019
in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total consolidated
Noninterest expenses	4,867	6,389	8,142	1,711	3,400	566	25,076
Impairment of goodwill and other intangible assets	492	0	545	0	0	0	1,037
Litigation charges, net	(4)	135	(21)	(5)	129	238	473
Restructuring and severance	150	218	156	41	157	83	805
Adjusted costs	4,229	6,035	7,462	1,675	3,115	245	22,761
Transformation charges	160	211	190	30	510	43	1145
Adjusted costs ex. transformation charges	4,069	5,824	7,272	1,644	2,605	202	21,616
Expenses eligible for reimbursement related to Prime Finance							102
Adjusted costs ex. transformation charges and expenses eligible for reimbursement related to Prime Finance							21,514

Prior year segmental information presented in the current structure

in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total consolidated
							2018
Noninterest expenses	3,882	6,509	7,556	1,735	3,351	428	23,461
Impairment of goodwill and other intangible assets	0	0	0	0	0	0	0
Litigation charges, net	34	96	(80)	33	(47)	52	88
Restructuring and severance	45	232	112	45	69	60	563
Adjusted costs	3,802	6,181	7,524	1,657	3,329	317	22,810
Transformation charges	0	0	0	0	0	0	0
Adjusted costs ex. transformation charges	3,802	6,181	7,524	1,657	3,329	317	22,810
Expenses eligible for reimbursement related to Prime Finance							0
Adjusted costs ex. transformation charges and expenses eligible for reimbursement related to Prime Finance							22,810

Prior year segmental information presented in the current structure

Revenues excluding specific items

Revenues excluding specific items is a performance indicator that is a non-GAAP financial measure most directly comparable to the IFRS financial measure net revenues. Revenues excluding specific items is calculated by adjusting net revenues under IFRS for specific revenue items which generally fall outside the usual nature or scope of the business and are likely to distort an accurate assessment of the divisional operating performance. Excluded items are Debt Valuation Adjustment (DVA) and material transactions or events that are either one-off in nature or belong to a portfolio of connected transactions or events where the P&L impact is limited to a specific period of time. The Group believes that a presentation of net revenues excluding the impact of these items provides a more meaningful depiction of the revenues associated with our business.

in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total consolidated
							2020
Revenues	5,145	9,283	8,126	2,229	(225)	(548)	24,011
DVA	0	6	0	0	(8)	0	(2)
Sale of PB Systems to TCS	(16)	0	(88)	0	0	0	(104)
Change in valuation of an investment - FIC S&T	0	22	0	0	0	0	22
Gain on sale - Global Transaction Banking	0	0	0	0	0	0	0
Gain from property sale - Private Bank Germany	0	0	0	0	0	0	0
Gain from property sale - IPB / Sal. Oppenheim	0	0	0	0	0	0	0
Sal. Oppenheim workout - International Private Bank (IPB)	0	0	114	0	0	0	114
Update in valuation methodology – CRU	0	0	0	0	0	0	0
Total Specific revenue items	(16)	28	26	0	(8)	0	30
Revenues excluding specific items	5,161	9,255	8,100	2,229	(217)	(548)	23,981

in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total consolidated
							2019
Revenues	5,244	7,019	8,206	2,332	217	147	23,165
DVA	0	(140)	0	0	(35)	0	(175)
Sale of PB Systems to TCS	0	0	0	0	0	0	0
Change in valuation of an investment - FIC S&T	0	143	0	0	0	0	143
Gain on sale - Global Transaction Banking	0	0	0	0	0	0	0
Gain from property sale - Private Bank Germany	0	0	0	0	0	0	0
Gain from property sale - IPB / Sal. Oppenheim	0	0	0	0	0	0	0
Sal. Oppenheim workout - International Private Bank (IPB)	0	0	105	0	0	0	105
Update in valuation methodology – CRU	0	0	0	0	(81)	0	(81)
Total Specific revenue items	0	3	105	0	(116)	0	(8)
Revenues excluding specific items	5,244	7,016	8,101	2,332	332	147	23,173

Prior year segmental information presented in the current structure

in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total consolidated
							2018
Revenues	5,278	7,561	8,520	2,187	1,911	(142)	25,316
DVA	0	126	0	0	0	0	126
Sale of PB Systems to TCS	0	0	0	0	0	0	0
Change in valuation of an investment - FIC S&T	0	140	0	0	0	0	140
Gain on sale - Global Transaction Banking	57	0	0	0	0	0	57
Termination of legacy Trust Preferred Security - Private Bank Germany	0	0	0	0	0	0	0
Gain from asset sale - Private Bank Germany	0	0	156	0	0	0	156
Gain from property sale - IPB / Sal. Oppenheim	0	0	40	0	0	0	40
Sal. Oppenheim workout - International Private Bank (IPB)	0	0	172	0	0	0	172
Update in valuation methodology – CRU	0	0	0	0	0	0	0
Total Specific revenue items	57	266	368	0	0	0	691
Revenues excluding specific items	5,221	7,295	8,153	2,187	1,911	(142)	24,625

Prior year segmental information presented in the current structure

Adjusted profit (loss) before tax

Adjusted profit (loss) before tax is calculated by adjusting the profit (loss) before tax under IFRS for specific revenue items, transformation charges, impairments of goodwill and other intangibles, as well as restructuring and severance expenses. The Group believes that a presentation of profit (losses) before tax excluding the impact of the foregoing items provides a more meaningful depiction of the profitability of our operating business.

in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total consolidated
							2020
Profit (loss) before tax	561	3,171	(124)	544	(2,201)	(948)	1,003
Specific revenue items	16	(28)	(26)	0	8	0	(30)
Transformation charges	59	84	122	5	162	58	490
Impairment of goodwill / other intangibles	0	0	0	0	0	0	0
Restructuring & severance	78	26	520	37	17	10	688
Adjusted profit (loss) before tax	714	3,252	493	586	(2,014)	(880)	2,151

in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total consolidated
							2019
Profit (loss) before tax	92	502	(279)	468	(3,170)	(247)	(2,634)
Specific revenue items	0	(3)	(105)	0	116	0	8
Transformation charges	160	211	190	30	510	43	1,145
Impairment of goodwill / other intangibles	492	0	545	0	0	0	1,037
Restructuring & severance	150	218	156	41	157	83	805
Adjusted profit (loss) before tax	894	929	507	539	(2,388)	(121)	361

Prior year segmental information presented in the current structure

in € m.	Corporate Bank	Investment Bank	Private Bank	Asset Management	Capital Release Unit	Corporate & Other	Total consolidated
							2018
Profit (loss) before tax	1,254	958	616	368	(1,404)	(461)	1,330
Specific revenue items	(57)	(266)	(368)	0	0	0	(691)
Transformation charges	0	0	0	0	0	0	0
Impairment of goodwill / other intangibles	0	0	0	0	0	0	0
Restructuring & severance	45	232	112	45	69	60	563
Adjusted profit (loss) before tax	1,242	924	360	413	(1,335)	(402)	1,202

Prior year segmental information presented in the current structure

Net assets (adjusted)

Net assets (adjusted) are defined as IFRS Total assets adjusted to reflect the recognition of legal netting agreements, offsetting of cash collateral received and paid and offsetting pending settlements balances. The Group believes that a presentation of net assets (adjusted) makes comparisons to its competitors easier.

in € b. (unless stated otherwise)	2020	2019	2018
Total assets	**1,325**	1,298	1,348
Deduct: Derivatives (incl. hedging derivatives) credit line netting	266	266	253
Deduct: Derivatives cash collateral received / paid	83	74	68
Deduct: Securities Financing Transactions credit line netting	1	1	1
Deduct: Pending settlements netting	12	10	18
Net assets	**962**	946	1,010

Book value and tangible book value per basic share outstanding

Book value per basic share outstanding and tangible book value per basic share outstanding are non-GAAP financial measures that are used and relied upon by investors and industry analysts as capital adequacy metrics. Book value per basic share outstanding represents the Bank's total shareholders' equity divided by the number of basic shares outstanding at period-end. Tangible book value represents the Bank's total shareholders' equity less goodwill and other intangible assets. Tangible book value per basic share outstanding is computed by dividing tangible book value by period-end basic shares outstanding.

Tangible Book Value

in € m.				2020 increase (decrease) from 2019		2019 increase (decrease) from 2018	
(unless stated otherwise)	2020	2019	2018	in € m.	in %	in € m.	in %
Total shareholders' equity (Book value)	**54,774**	55,857	62,495	(1,083)	(2)	(6,638)	(11)
Goodwill and other intangible assets[1]	(5,997)	(6,254)	(8,372)	257	(4)	2,119	(25)
Tangible shareholders' equity (Tangible book value)	**48,777**	49,603	54,122	(827)	(2)	(4,519)	(8)

[1] Excludes Goodwill and other intangible assets attributable to partial sale of DWS.

Basic Shares Outstanding

in € m. (unless stated otherwise)	2020	2019	2018	2020 increase (decrease) from 2019 in € m.	2020 increase (decrease) from 2019 in %	2019 increase (decrease) from 2018 in € m.	2019 increase (decrease) from 2018 in %
Number of shares	**2,066.8**	2,066.8	2,066.8	0	0	0	0
Shares outstanding:							
Treasury shares	(1.3)	(0.7)	(1.3)	(0.7)	100.5	0.7	(50.1)
Vested share awards	38.6	52.4	39.8	(13.8)	(26.3)	12.6	31.7
Basic shares outstanding	**2,104.1**	2,118.5	2,105.2	(14.4)	(0.7)	13.3	0.6
Book value per basic share outstanding in €	**26.03**	26.37	29.69	(0.34)	(1.3)	(3.32)	(11.2)
Tangible book value per basic share outstanding in €	**23.18**	23.41	25.71	(0.23)	(1.0)	(2.30)	(8.9)

Regulatory fully loaded measures

Our regulatory assets, exposures, risk-weighted assets, capital and ratios thereof are calculated for regulatory purposes and are set forth throughout this document under the CRR/CRD as currently applicable.

We present in this report certain figures based on the CRR definition of own fund instruments applicable for Additional Tier 1 (AT1) capital and Tier 2 (T2) capital and figures based thereon, including Tier 1, Total Capital and Leverage Ratio) on a "fully loaded" basis. We calculate such "fully loaded" figures excluding the transitional arrangements for own fund instruments as provided in the currently applicable CRR/CRD. For CET 1 instruments we do not make use of transitional provisions.

Transitional arrangements are applicable for AT1 and T2 instruments. Capital instruments issued on or prior to December 31, 2011, that no longer qualify as AT1 or T2 capital under the fully loaded CRR/CRD as currently applicable are subject to grandfathering rules during the transitional period and are being phased out from 2013 to 2022 with their recognition capped at 30 % in 2019, 20 % in 2020 and 10 % in 2021 (in relation to the portfolio eligible for grandfathering which was still in issue on December 31, 2012). The current CRR as applicable since June 27, 2019 provides further grandfathering rules for AT1 and T2 instruments issued prior to June 27, 2019. Thereunder, AT1 and T2 instruments issued through special purpose entities are grandfathered until December 31, 2021, and AT1 and T2 instruments that do not meet certain new requirements that apply since June 27, 2019 continue to qualify until June 26, 2025. Instruments issued under UK law which do not fulfill all CRR requirements after the UK has left the European Union are also excluded from our fully loaded definition. Our CET 1 and RWA figures show no difference between CRR/CRD as currently applicable and fully loaded CRR/CRD based on our definition of "fully loaded".

For the comparative numbers as per year-end 2019 we still applied our earlier concept of fully loaded, defined as excluding the transitional arrangements for own funds instruments introduced by the CRR/CRD applicable until June 26, 2019, but reflecting the transitional arrangements introduced by the amendments to the CRR/CRD applicable from June 27, 2019 and further amendments thereafter.

We believe that these "fully loaded" calculations provide useful information to investors as they reflect our progress against the regulatory capital standards and as many of our competitors have been describing calculations on a "fully loaded" basis. As our competitors' assumptions and estimates regarding "fully loaded" calculations may vary, however, our "fully loaded" measures may not be comparable with similarly labelled measures used by our competitors.

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

[Page intentionally left blank for SEC filing purposes]

Supplemental Financial Information (Unaudited)

Industry Guide 3 Information

Amounts for 2020, 2019, 2018, 2017 and 2016 are prepared in accordance with IFRS, which is consistent with the Group's Financial Statements.

Financial condition

Average balance sheet based upon month-end balances

Average balance sheet and interest and similar income			2020			2019			2018
in € m. (unless stated otherwise)	Average balance	Interest	Average yield/rate	Average balance	Interest	Average yield/rate	Average balance	Interest	Average yield/rate
Assets:[1]									
Interest-earning deposits with banks:[4,5]									
In German offices[2]	68,237	(14)	(0.02) %	72,196	(278)	(0.39) %	101,124	(406)	(0.40) %
In Non-German offices[2]	74,415	422	0.57 %	90,280	1,981	2.19 %	107,079	2,015	1.88 %
Total interest-earning deposits with banks	**142,653**	**408**	**0.29 %**	162,476	1,702	1.05 %	208,203	1,610	0.77 %
Central bank funds sold and securities purchased under resale agreements:[4]									
In German offices	2,974	23	0.78 %	1,837	(5)	(0.25) %	975	(5)	(0.50) %
In Non-German offices	6,357	285	4.49 %	8,130	333	4.10 %	7,511	220	2.93 %
Total central bank funds sold and securities purchased under resale agreements	**9,331**	**308**	**3.30 %**	9,967	329	3.30 %	8,486	215	2.53 %
Securities borrowed:[4]									
In German offices	79	12	N/M	136	16	11.51 %	10	0	0.22 %
In Non-German offices	33	4	N/M	2,335	63	2.70 %	3,305	29	0.89 %
Total securities borrowed	**111**	**16**	**N/M**	2,471	79	3.19 %	3,315	29	0.88 %
Interest-earning financial assets at fair value through profit or loss:[4, 5, 6]									
In German offices	39,225	373	0.95 %	25,805	378	1.47 %	18,541	346	1.87 %
In Non-German offices	166,474	3,341	2.01 %	223,855	6,585	2.94 %	258,953	7,349	2.84 %
Total interest-earning financial assets at fair value through profit or loss	**205,698**	**3,714**	**1.81 %**	249,660	6,963	2.79 %	277,494	7,695	2.77 %
Financial assets at fair value through OCI:[5]									
In German offices	4,292	8	0.19 %	6,784	49	0.72 %	10,148	90	0
In Non-German offices	44,391	628	1.42 %	42,715	976	2.28 %	40,660	927	0
Total financial assets at fair value through OCI	**48,683**	**637**	**1.31 %**	49,500	1,025	2.07 %	50,808	1,017	0
Loans at amortized cost:[3,4]									
In German offices	232,312	5,241	2.26 %	222,854	5,497	2.47 %	214,858	5,721	2.66 %
In Non-German offices	205,374	6,345	3.09 %	196,620	8,263	4.20 %	180,677	7,269	4.02 %
Total loans	**437,686**	**11,586**	**2.65 %**	419,475	13,760	3.28 %	395,534	12,990	3.28 %
Total other interest-earning assets	76,096	218	0.29 %	62,815	387	0.62 %	46,829	75	0.16 %
Total interest-earning assets	**920,259**	**16,887**	**1.83 %**	956,362	24,244	2.53 %	990,670	23,632	2.39 %
Cash and due from banks[5]	21,477			21,093			21,387		
Noninterest-earning financial assets at fair value through profit or loss:									
In German offices	212,204			205,937			154,906		
In Non-German offices	164,528			161,727			192,110		
All other assets	90,771			88,078			95,660		
Allowance for credit losses	(4,681)			(4,232)			(4,368)		
Total assets	**1,404,557**			1,428,965			1,450,364		
% of assets attributable to Non-German offices	57 %			59 %			62 %		

N/M – Not meaningful

Average balance sheet and interest expense			2020			2019			2018
in € m. (unless stated otherwise)	Average balance	Interest	Average yield/rate	Average balance	Interest	Average yield/rate	Average balance	Interest	Average yield/rate
Liabilities and equity:[1]									
Interest-bearing deposits:									
In German offices:									
Time deposits	79,905	469	0.59 %	87,672	732	0.83 %	86,690	658	0.76 %
Savings deposits	84,507	358	0.42 %	87,988	435	0.49 %	86,277	417	0.48 %
Demand deposits	67,098	(134)	(0.20) %	54,763	353	0.64 %	42,630	247	0.58 %
Total in German offices	231,510	693	0.30 %	230,423	1,519	0.66 %	215,596	1,322	0.61 %
In Non-German offices:									
Time deposits	40,661	766	1.88 %	42,085	1,487	3.53 %	43,223	1,224	2.83 %
Savings deposits	1,226	22	1.76 %	657	9	1.43 %	664	7	1.11 %
Demand deposits	78,487	348	0.44 %	76,957	591	0.77 %	82,880	529	0.64 %
Total in Non-German offices	120,374	1,135	0.94 %	119,699	2,088	1.74 %	126,767	1,760	1.39 %
Total interest-bearing deposits	**351,884**	**1,828**	**0.52 %**	350,122	3,607	1.03 %	342,363	3,082	0.90 %
Central bank funds purchased and securities sold under repurchase agreements:[4]									
In German offices	2,738	39	1.43 %	289	29	9.85 %	126	16	12.38 %
In Non-German offices	2,974	129	4.35 %	5,084	335	6.58 %	13,146	347	2.64 %
Total central bank funds purchased and securities sold under repurchase agreements	**5,711**	**169**	**2.95 %**	5,374	363	6.76 %	13,271	363	2.73 %
Securities loaned:[4]									
In German offices	52	5	9.24 %	2	0	9.15 %	2	0	(0.11) %
In Non-German offices	822	(1)	(0.13) %	2,336	74	3.16 %	6,244	141	2.26 %
Total securities loaned	**874**	**4**	**0.43 %**	2,338	74	3.16 %	6,246	141	2.26 %
Interest-bearing financial liabilities at fair value through profit or loss:[5,6]									
In German offices	20,758	226	1.09 %	14,219	190	1.34 %	11,626	188	1.62 %
In Non-German offices	83,963	1,265	1.51 %	102,232	3,032	2.97 %	118,221	3,436	2.91 %
Total interest-bearing financial liabilities at fair value through profit or loss	**104,721**	**1,490**	**1.42 %**	116,451	3,222	2.77 %	129,848	3,624	2.79 %
Other short-term borrowings:[4]									
In German offices	574	8	1.41 %	560	12	2.22 %	670	7	1.03 %
In Non-German offices	3,874	51	1.31 %	11,535	150	1.30 %	16,985	131	0.77 %
Total other short-term borrowings	**4,448**	**59**	**1.32 %**	12,094	163	1.34 %	17,656	137	0.78 %
Long-term debt and trust preferred securities:[4]									
In German offices	97,060	877	0.90 %	92,883	850	0.92 %	101,903	817	0.80 %
In Non-German offices	48,435	639	1.32 %	58,582	1,246	2.13 %	58,653	1,292	2.20 %
Total long-term debt and trust preferred securities	**145,496**	**1,517**	**1.04 %**	151,465	2,096	1.38 %	160,556	2,110	1.31 %
Total other interest-bearing liabilities[4,5,6]	**72,638**	**272**	**0.37 %**	76,871	970	1.26 %	75,964	859	1.13 %
Total interest-bearing liabilities	**685,772**	**5,338**	**0.78 %**	714,716	10,495	1.47 %	745,904	10,316	1.38 %

Average balance sheet and interest expense			2020			2019			2018
in € m. (unless stated otherwise)	Average balance	Interest	Average yield/rate	Average balance	Interest	Average yield/rate	Average balance	Interest	Average yield/rate
Noninterest-bearing deposits:									
In German offices	193,022			203,378			199,705		
In Non-German offices	24,570			22,641			24,980		
Noninterest-bearing financial liabilities at fair value through profit or loss:									
In German offices	197,946			184,845			135,163		
In Non-German offices	161,446			164,734			195,094		
All other noninterest-bearing liabilities[5]	79,220			72,210			81,083		
Total shareholders' equity	55,302			60,170			62,537		
Additional equity components	5,644			4,670			4,675		
Noncontrolling interests	1,634			1,600			1,225		
Total equity	62,580			66,441			68,437		
Total liabilities and equity	1,404,557			1,428,965			1,450,364		
% of liabilities attributable to Non-German offices[1]	41 %			43 %			48 %		
Rate spread	1.06 %			1.07 %			1.00 %		
Net interest margin (Net interest income to total interest-earning assets):									
In German offices	1.06 %			0.91 %			0.91 %		
In Non-German offices	1.37 %			1.72 %			1.58 %		
Total	1.25 %			1.44 %			1.34 %		

[1] The allocation of the assets and liabilities between German and Non-German offices are based on the location of the entity which carries the respective asset or liability.
[2] Interest-earning deposits with banks include interest earning deposit with central bank and interest earning deposit with bank w/o central bank.
[3] Loans include impaired loans.
[4] Figures in interest revenue and expense positions are based on net effect of negative interest revenue and expenses. However, negative interest revenue and expenses are reported in ''others'' in interest and similar income and interest expenses, respectively, in Note 5 to the consolidated financial statement.
[5] Prior period comparatives for 2019 for interest earning financial assets at fair value through profit or loss, interest bearing financial liabilities at fair value through profit or loss, interest earning deposits with bank, cash and due from banks, total other interest bearing liabilities and all other noninterest bearing liabilties have been restated. The restatements did not affect net interest income.
[6] Prior period comparatives for 2018 for interest earning financial assets at fair value through profit or loss, interest bearing financial liabilities at fair value through profit or loss, total other interest earning assets and total other interest bearing liabilities have been restated, The restatement affected the net interest income by € 124 million.
.

Analysis of changes in interest and similar income and interest expense

in € m.	2020 over 2019 due to changes in[1] Net change	Volume	Rate	2019 over 2018 due to changes in[1] Net change	Volume	Rate
Interest and similar income:						
Interest-earning deposits with banks:						
German offices	264	14	249	127	112	15
Non-German offices	(1,558)	(299)	(1,260)	(35)	(342)	307
Total interest-earning deposits with banks	**(1,295)**	**(284)**	**(1,010)**	93	(230)	322
Central bank funds sold and securities purchased under resale agreements:						
German offices	28	(1)	29	0	(3)	3
Non-German offices	(48)	(77)	30	113	19	94
Total central bank funds sold and securities purchased under resale agreements	**(20)**	**(79)**	**58**	114	16	97
Securities borrowed:						
German offices	(4)	(8)	4	16	3	13
Non-German offices	(59)	(112)	53	34	(11)	45
Total securities borrowed	**(63)**	**(119)**	**57**	49	(8)	57
Financial assets at fair value through profit or loss:						
German offices	(5)	156	(161)	32	117	(84)
Non-German offices	(3,244)	(1,448)	(1,796)	(765)	(1,025)	260
Total financial assets at fair value through profit or loss	**(3,249)**	**(1,293)**	**(1,956)**	(732)	(908)	176
Financial assets at fair value through OCI:						
German offices	(41)	(14)	(27)	(41)	(26)	(15)
Non-German offices	(347)	37	(384)	49	47	2
Total financial assets at fair value through OCI	**(388)**	**23**	**(411)**	8	21	(13)
Loans at amortized cost:						
German offices	(256)	227	(483)	(224)	208	(432)
Non-German offices	(1,918)	354	(2,272)	993	660	333
Total loans	**(2,174)**	**581**	**(2,754)**	769	868	(99)
Other interest-earning assets	**(169)**	**69**	**(238)**	312	33	278
Total interest and similar income	**(7,357)**	**(1,102)**	**(6,255)**	604	(227)	832
Interest expense:						
Interest-bearing deposits:						
German offices	(826)	7	(833)	197	94	103
Non-German offices	(953)	12	(965)	328	(103)	431
Total interest-bearing deposits	**(1,779)**	**19**	**(1,798)**	525	(8)	533
Central bank funds purchased and securities sold under repurchase agreements:						
German offices	**11**	**54**	**(43)**	13	17	(4)
Non-German offices	**(205)**	**(113)**	**(92)**	(13)	(305)	293
Total central bank funds purchased and securities sold under repurchase agreements	**(194)**	**(59)**	**(135)**	0	(289)	289
Securities loaned:						
German offices	5	5	0	0	0	0
Non-German offices	(75)	(29)	(46)	(67)	(110)	42
Total securities loaned	**(70)**	**(24)**	**(46)**	(67)	(110)	43
Financial liabilities at fair value through profit or loss:						
German offices	36	76	(40)	2	38	(36)
Non-German offices	(1,767)	(471)	(1,297)	(403)	(473)	69
Total financial liabilities at fair value through profit or loss	**(1,732)**	**(395)**	**(1,337)**	(402)	(435)	34
Other short-term borrowings:						
German offices	(4)	0	(5)	6	(1)	7
Non-German offices	(99)	(100)	1	20	(51)	71
Total other short-term borrowings	**(104)**	**(100)**	**(4)**	25	(52)	78
Long-term debt and trust preferred securities:						
German offices	27	38	(11)	33	(76)	109
Non-German offices	(606)	(190)	(416)	(47)	(2)	(45)
Total long-term debt and trust preferred securities	**(579)**	**(152)**	**(427)**	(14)	(78)	64
Other interest-bearing liabilities	**(698)**	**(51)**	**(648)**	111	10	101
Total interest expense	**(5,156)**	**(762)**	**(4,394)**	179	(962)	1,140
Net change in net interest income	**(2,201)**	**(340)**	**(1,861)**	426	735	(309)

[1] Changes due to combination of volume and rate are allocated proportionally

Investment portfolio (debt Securities at fair value through other comprehensive income)

Fair values of the Group's investment portfolio

in € m.	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018
Debt securities:			
German government	10,245	6,243	7,705
U.S. Treasury and U.S. government agencies	9,221	7,703	13,118
U.S. local (municipal) governments	251	0	101
Other foreign governments	26,308	21,020	18,152
Corporates	2,272	3,423	5,606
Other asset-backed securities	31	36	27
Mortgage-backed securities, including obligations of U.S. federal agencies	636	457	103
Other debt securities	692	332	181
Total	**49,656**	39,214	44,993

Fair value, amortized cost and gross unrealized holding gains and losses for the Group's investment portfolio

Dec 31, 2020		Gross unrealized holding		
in € m.	Fair value	Gains	Losses	Amortized cost
Debt securities:				
German government	10,245	23	19	10,241
U.S. Treasury and U.S. government agencies	9,221	126	119	9,214
U.S. local (municipal) governments	251	14	0	237
Other foreign governments	26,308	306	14	26,016
Corporates	2,272	54	2	2,220
Other asset-backed securities	31	16	0	16
Mortgage-backed securities, including obligations of U.S. federal agencies	636	11	0	624
Other debt securities	692	11	1	682
Total	49,656	563	156	49,249

The following table presents the fair value, remaining maturities, approximate weighted-average yields (based on amortized cost) and total amortized cost by maturity distribution of the debt security components of the Group's investment portfolio as of December 31, 2020:

	Up to one year		More than one year and up to five years		More than five years and up to ten years		More than ten years		Total	
in € m.	Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield
German government	254	1.0 %	6,612	(0.2) %	2,973	(0.4) %	406	0.9 %	10,245	(0.2) %
U.S. Treasury and U.S. government agencies	1,718	0.7 %	1,700	0.6 %	5,488	1.1 %	316	1.6 %	9,221	0.9 %
U.S. local (municipal) governments	0	0.0 %	0	0.0 %	42	4.4 %	209	4.6 %	251	4.6 %
Other foreign governments	8,905	0.8 %	6,424	1.9 %	9,082	(0.0) %	1,897	0.4 %	26,308	0.7 %
Corporates	293	0.6 %	1,399	1.0 %	544	0.6 %	36	1.3 %	2,272	0.8 %
Other asset-backed securities	0	0.0 %	0	0.0 %	0	0.0 %	31	3.5 %	31	3.5 %
Mortgage-backed securities, including obligations of U.S. federal agencies	0	0.0 %	0	0.0 %	0	0.0 %	636	3.5 %	636	3.5 %
Other debt securities	193	2.1 %	432	2.9 %	67	0.8 %	0	0.0 %	692	2.5 %
Total fair value	11,363	0.8 %	16,567	0.9 %	18,196	0.3 %	3,530	1.4 %	49,656	0.7 %
Total amortized cost	11,340		16,417		18,045		3,447		49,249	

Loans outstanding

From reporting period of 2018, we are providing information following the IFRS 9 accounting standard, while reporting period 2017 and earlier details are based on the IAS 39 accounting rules and are presented in the old format. Since the accounting requirements have changed significantly, numbers are not comparable with prior 2018.

Analysis of the Group's loan portfolio by industry sector and by the borrower's country of domicile (in- or outside Germany)

in € m.	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018
German:			
Agriculture, forestry and fishing	277	297	283
Mining and quarrying	183	181	309
Manufacturing	10,879	10,954	10,604
Electricity, gas, steam and air conditioning supply	944	1,024	779
Water supply, sewerage, waste management and remediation activities	445	630	672
Construction	1,304	1,391	1,392
Wholesale and retail trade, repair of motor vehicles and motorcycles	6,457	6,427	6,404
Transport and storage	1,626	1,232	1,656
Accommodation and food service activities	879	793	637
Information and communication	1,510	1,385	1,007
Financial and insurance activities	9,601	8,437	7,245
Real estate activities	11,333	9,251	8,169
Professional, scientific and technical activities	5,176	4,783	4,704
Administrative and support service activities	3,764	2,533	3,794
Public administration and defense, compulsory social security	3,294	3,589	6,186
Education	108	107	251
Human health services and social work activities	2,723	2,654	2,710
Arts, entertainment and recreation	323	325	302
Other service activities	2,377	2,251	2,388
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	161,817	156,476	149,130
Activities of extraterritorial organizations and bodies	0	0	0
Total German	225,018	214,721	208,619
Non-German:			
Agriculture, forestry and fishing	360	379	372
Mining and quarrying	2,962	2,845	3,391
Manufacturing	17,162	19,245	20,362
Electricity, gas, steam and air conditioning supply	2,820	3,552	2,776
Water supply, sewerage, waste management and remediation activities	237	213	224
Construction	3,404	2,719	3,029
Wholesale and retail trade, repair of motor vehicles and motorcycles	15,565	16,142	15,468
Transport and storage	4,757	4,378	4,893
Accommodation and food service activities	1,634	1,840	1,457
Information and communication	4,731	5,190	4,274
Financial and insurance activities	80,620	89,996	86,641
Real estate activities	26,613	35,902	26,984
Professional, scientific and technical activities	2,770	2,647	2,316
Administrative and support service activities	5,804	4,531	4,127
Public administration and defense, compulsory social security	4,118	4,423	4,565
Education	97	220	447
Human health services and social work activities	807	977	908
Arts, entertainment and recreation	628	542	649
Other service activities	3,789	3,515	2,939
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	43,211	40,256	39,365
Activities of extraterritorial organizations and bodies	1	3	25
Total Non-German	222,089	239,514	225,212
Gross loans	447,107	454,235	433,832
(Deferred expense)/unearned income	394	340	254
Loan less (deferred expense)/unearned income	446,712	453,895	433,578

in € m.	Dec 31, 2017 [1]	Dec 31, 2016
German:		
Financial intermediation	4,654	5,048
Fund management activities	910	984
Manufacturing	9,456	8,821
Wholesale and retail trade	6,265	5,736
Households	139,196	137,078
Commercial real estate activities	7,864	7,741
Public sector	9,090	11,059
Lease financing	296	383
Other	22,072	20,579
Total German	199,804	197,430
Non-German:		
Financial intermediation	47,550	44,569
Fund management activities	17,798	25,145
Manufacturing	18,022	20,470
Wholesale and retail trade	12,986	11,008
Households	47,533	50,791
Commercial real estate activities	21,382	19,627
Public sector	4,621	4,682
Lease financing	88	178
Other	36,095	39,643
Total Non-German	206,076	216,114
Gross loans	405,879	413,544
(Deferred expense)/unearned income	259	88
Loan less (deferred expense)/unearned income	405,621	413,455

[1] Comparatives have been restated to reflect changes in industry sectors.

Loan maturities and sensitivity to changes in interest rates

Analysis of maturities of the Group's loan portfolio (excluding lease financing)

Dec 31, 2020 in € m.	Within 1 year	After one but within 5 years	After 5 years	Total
German:				
Agriculture, forestry and fishing	71	34	172	277
Mining and quarrying	10	138	34	183
Manufacturing	4,677	4,042	2,160	10,879
Electricity, gas, steam and air conditioning supply	310	266	368	944
Water supply, sewerage, waste management and remediation activities	146	151	148	445
Construction	274	221	809	1,304
Wholesale and retail trade, repair of motor vehicles and motorcycles	3,550	1,246	1,661	6,457
Transport and storage	801	489	336	1,626
Accommodation and food service activities	37	231	611	879
Information and communication	603	564	343	1,510
Financial and insurance activities	2,299	3,489	3,813	9,601
Real estate activities	1,453	2,407	7,473	11,333
Professional, scientific and technical activities	1,008	998	3,170	5,176
Administrative and support service activities	2,689	165	909	3,764
Public administration and defense, compulsory social security	1,765	1,419	109	3,294
Education	10	14	84	108
Human health services and social work activities	224	537	1,961	2,723
Arts, entertainment and recreation	53	37	233	323
Other service activities	864	604	909	2,377
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	5,167	11,984	144,666	161,817
Activities of extraterritorial organizations and bodies	0	0	0	0
Total German	26,011	29,037	169,970	225,018
Non-German:				
Agriculture, forestry and fishing	231	73	56	359
Mining and quarrying	1,768	589	604	2,961
Manufacturing	11,309	4,122	1,722	17,153
Electricity, gas, steam and air conditioning supply	865	672	1,283	2,820
Water supply, sewerage, waste management and remediation activities	50	136	50	236
Construction	1,540	1,435	428	3,402
Wholesale and retail trade, repair of motor vehicles and motorcycles	11,870	2,474	1,215	15,560
Transport and storage	1,702	2,245	775	4,722
Accommodation and food service activities	201	1,091	342	1,634
Information and communication	2,390	1,978	362	4,730
Financial and insurance activities	35,999	36,709	7,911	80,620
Real estate activities	11,194	11,385	4,033	26,612
Professional, scientific and technical activities	1,224	807	737	2,768
Administrative and support service activities	2,245	2,746	808	5,799
Public administration and defense, compulsory social security	1,369	1,374	1,375	4,118
Education	31	30	35	97
Human health services and social work activities	214	336	253	804
Arts, entertainment and recreation	84	508	35	628
Other service activities	1,547	1,694	546	3,788
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	13,295	9,292	20,623	43,210
Activities of extraterritorial organizations and bodies	0	0	1	1
Total Non-German	99,131	79,697	43,194	222,023
Gross loans	125,142	108,734	213,165	447,041
(Deferred expense)/unearned income	(17)	(124)	535	394
Loans less (deferred expense)/unearned income	125,159	108,858	212,630	446,647

Volumes of loans in loan portfolio (excluding lease financing) with residual maturities of more than one year from that date

Dec 31,2020 in € m.	After one but within 5 years	After 5 years	Total
Fixed rate loans	37,367	179,451	264,457
Floating or adjustable rate loans	71,367	33,713	182,584
Total	108,734	213,165	447,041

Risk elements

For 2020, 2019 and 2018, we provide information following the IFRS 9 accounting standard, while 2017 and 2016 numbers are based on the IAS 39 accounting rules. Since the accounting requirements have changed significantly, numbers are not comparable. Therefore 2015 - 2017 figures are shown in a separate section subsequent to the disclosures under IFRS 9. The main reasons are the broader scope of assets subject to impairment, differences in asset classification as well as in impairment calculation and definition.

The following section provides information about certain risk elements included in the amortized cost portfolio intended to address the requirements of SEC Industry Guide 3 while at the same time reflecting the classifications most relevant to how Deutsche Bank Group evaluates the credit quality of its amortized cost portfolio. All stage 3 assets, which are defined as financial assets at amortized cost where known information about possible credit problems of borrowers causes the Group's management to have serious doubts as to the ability of such borrowers to comply with the present repayment terms, are included in this disclosure of risk elements.

Loans 90 days or more past due and still accruing

Under IFRS 9, all loans 90 days or more past due are classified as credit impaired and reflected in stage 3. Interest income for credit impaired loans is recognised in line with IFRS 9.5.4.1 and B 5.4.4. The accretion of the net present value of the written down amount of the loan due to the passage of time is recognized as interest income based on the original effective interest rate of the loan.

Stage 3 financial assets at amortized cost

Breakdown of the Group's IFRS stage 3 financial assets at amortized cost by region based on the borrower's country of domicile

in € m.	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018
Germany	4,111	3,580	3,391
Western Europe (excluding Germany)	4,292	4,609	4,615
Eastern Europe	90	75	88
North America	2,183	683	574
Central and South America	381	112	155
Asia/Pacific	1,192	608	471
Africa	11	13	78
Other	123	0	43
Total[1]	**12,384**	9,681	9,415

[1] of which POCI: € 1,729 million for December 31, 2020, € 2,150 million for December 31, 2019 and € 1,963 million for December 31, 2018 respectively.

Breakdown of the Group's IFRS stage 3 financial assets at amortized cost by industry sector of the borrower

in € m.	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018
Agriculture, forestry and fishing	39	43	60
Mining and quarrying	162	142	147
Manufacturing	1,162	1,044	849
Electricity, gas, steam and air conditioning supply	117	70	77
Water supply, sewerage, waste management and remediation activities	57	64	10
Construction	440	451	426
Wholesale and retail trade, repair of motor vehicles and motorcycles	876	664	594
Transport and storage	399	249	539
Accommodation and food service activities	113	105	156
Information and communication	131	32	46
Financial and insurance activities	1,710	1,255	1,006
Real estate activities	1,117	710	782
Professional, scientific and technical activities	421	427	341
Administrative and support service activities	456	214	94
Public administration and defense, compulsory social security	229	43	81
Education	3	2	8
Human health services and social work activities	16	17	14
Arts, entertainment and recreation	9	10	14
Other service activities	395	284	343
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	4,530	3,853	3,830
Activities of extraterritorial organizations and bodies	1	1	1
Total[1]	**12,384**	9,681	9,415

[1] of which POCI: € 1,729 million for December 31, 2020, € 2,150 million for December 31, 2019 and € 1,963 million for December 31, 2018, respectively

The previous year's figures are stated as reported under IAS 39 – impaired loans.

Interest revenue of financial assets at amortized cost in stage 3

The following table shows the approximate effect on interest revenue of financial assets at amortized cost in stage 3 (excluding POCI). It shows the gross interest income that would have been recorded during the reporting period, if those assets had been current in accordance with their original terms and had been outstanding throughout the reporting period or since their origination, if Deutsche Bank Group only held them for part of the reporting period. It also shows the amount of interest income on those loans that was included in net income for the reporting period.

in € m.	2020	2019	2018
German loans:			
Gross amount of interest that would have been recorded at original rate	87	75	47
Less interest, net of reversals, recognized in interest revenue	13	16	20
Reduction of interest revenue	74	59	26
Non-German loans:			
Gross amount of interest that would have been recorded at original rate	77	77	76
Less interest, net of reversals, recognized in interest revenue	33	30	26
Reduction of interest revenue	43	47	51
Total reduction of interest revenue	117	106	77

Forborne assets at amortized costs

For economic or legal reasons we might enter into a forbearance agreement with a borrower who faces or will face financial difficulties in order to ease the contractual obligation for a limited period of time. A case-by-case approach is applied for our corporate clients considering each transaction and client-specific facts and circumstances. For consumer loans we offer forbearances for a limited period of time, in which the total or partial outstanding or future instalments are deferred to a later point in time. However, any amounts not paid, including accrued interest during this period must also be re-paid at a later point in time. Repayment options include distribution over residual tenor, a one-off payment or a tenor extension. Forbearances are restricted and depend on the economic situation of the client, our risk management strategies and local legislation. In case a forbearance agreement is entered into, an impairment measurement is conducted as described below, an impairment charge is taken if necessary and the loan is subsequently recorded as impaired.

In our management and reporting of forborne loans, we follow the EBA definition for forbearances and non-performing loans (Implementing Technical Standards (ITS) on Supervisory reporting on forbearance and non-performing exposures under article 99(4) of Regulation (EU) No 575/2013). Once the conditions mentioned in the ITS are met, we report the loan as being forborne. We remove the loan from our forbearance reporting once the discontinuance criteria in the ITS are met (i.e., the contract is considered performing, a minimum two year probation period has passed, regular payments of more than an insignificant aggregate amount of principal or interest have been made during at least half of the probation period, and none of the exposures to the debtor is more than 30 days past-due at the end of the probation period).

In 2020, forbearance measures granted as a consequence of the COVID-19 crisis have been added to the above regulations and are included in the following table, even if these measures, in accordance with EBA guidance, do in general not trigger a stage transition. COVID-19 related moratoria in contrast are not relevant for the below table. For further details please refer to the section “Legislative and non-legislative moratoria and public guarantee schemes in light of COVID-19 pandemic” in the Risk Report of the Annual Report 2020.

Breakdown of the Group’s forborne loans

in € m.	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018
Forborne loans			
German	3,735	2,243	2,295
Non-German	9,723	2,552	2,546
Total forborne loans[1]	13,459	4,796	4,841

[1] of which: TDR € 1,116 million for December 31, 2020, € 1,019 million for December 31, 2019 and € 790 million for December 31, 2018 respectively.

Forborne assets at amortized cost increased by € 8.7 billion, predominantly due to the inclusion of Forbearance measures granted as a consequence of the COVID-19 crisis.

Forborne loans slightly decreased by € 45 million or 1 % in 2019.

Risk elements (previous years figures as reported under IAS 39)

The following section provides information about certain risk elements included in the loan portfolio intended to address the requirements of SEC Industry Guide 3 while at the same time reflecting the classifications most relevant to how Deutsche Bank Group evaluates the credit quality of its loan portfolio. All potential problem loans, which are defined as loans where

known information about possible credit problems of borrowers causes the Group's management to have serious doubts as to the ability of such borrowers to comply with the present loan repayment terms, are included in this disclosure of risk elements.

Loans 90 days or more past due and still accruing

Exposure of loans carried at amortized cost which were 90 days or more past due and still accruing

in € m.	Dec 31, 2017	Dec 31, 2016
German	321	252
Non-German	174	190
Total loans 90 days or more past due and still accruing	495	442

Impaired loans

Breakdown of the Group's IFRS impaired loans by region based on the borrower's country of domicile

in € m.	Dec 31, 2017	Dec 31, 2016
Germany	2,266	2,639
Western Europe (excluding Germany)	2,892	3,709
Eastern Europe	168	179
North America	498	496
Central and South America	70	5
Asia/Pacific	292	355
Africa	49	64
Other	0	2
Total impaired loans	6,234	7,447

Breakdown of the Group's IFRS impaired loans by industry sector of the borrower

in € m.	Dec 31, 2017	Dec 31, 2016
Financial intermediation	129	133
Fund management activities	16	21
Manufacturing	685	754
Wholesale and retail trade	521	707
Households	2,388	2,661
Commercial real estate activities	376	422
Public sector	74	19
Other	2,046[1]	2,731[2]
Total impaired loans	6,234	7,447

[1] Of which: 'Transportation, storage and communication' - Total Impaired Loans € 808 million/Total Loan loss allowance € 473 million. 'Real estate; renting and business activities' - € 482 million/ € 208 million, 'Construction' - € 378 million/€ 103 million, 'Mining and quarrying' - € 169 million/ € 123 million.
[2] Of which: 'Transportation, storage and communication' - Total Impaired Loans € 1.1 billion/Total Loan loss allowance € 650 million, 'Real estate; renting and business activities' - € 489 million/€ 230 milion, 'Construction': € 309 million/ € 170 million, 'Mining and quarrying' - € 232 million/€ 103 million.

Renegotiated loans

Loans that have been renegotiated in such a way that, for economic or legal reasons related to the borrower's financial difficulties, we granted a concession to the borrower that we would not otherwise have considered are disclosed and defined as renegotiated loans and are a subset of forborne loans disclosed in the Asset Quality section of the Risk Report.

Breakdown of the Group's renegotiated loans representing our troubled debt restructurings

in € m.	Dec 31, 2017	Dec 31, 2016
Renegotiated loans considered nonimpaired		
German	717	553
Non-German	288	263
Total renegotiated loans considered nonimpaired	1,006	816
Renegotiated loans considered impaired		
German	509	661
Non-German	718	770
Total renegotiated loans considered impaired	1,227	1,430
Renegotiated loans		
German	1,226	1,213
Non-German	1,007	1,033
Total renegotiated loans	2,233	2,246

In 2017, renegotiated loans remained stable, decreasing by € 13 million or 1 %.

It should be noted that these renegotiations are not part of a special modification or restructuring program such as the Fannie Mae "Home Affordable Modification Program". Rather, new terms (for example modification of interest rates, principal amounts, interest due, maturities, etc.) were arranged depending on the requirements of the individual renegotiation.

Foreign outstandings

The following tables list only those countries for which the cross-border outstandings exceeded 0.75 % of the Group's total assets as of December 31, 2020, 2019 and 2018. Offsetting of local country claims is done for third party liabilities of the respective foreign offices that represent legal obligations of the foreign offices and for which no payment is guaranteed at locations outside of the country of the office. As of December 31, 2020, there were no outstandings that exceeded 0.75 % of total assets in any country currently facing debt restructuring or liquidity problems that the Group expects would materially impact the country's ability to service its obligations.

							Dec 31, 2020
in € m. (unless stated otherwise)	Banks and other financial institutions	Governments and Official institutions	Other[1]	Commit-ments	Net local country claim	Total	in %
United States	4,962	30,094	73,257	5,761	109,188	223,262	16.85
Great Britain	3,576	20,387	13,243	5,854	33,159	76,219	5.75
France	2,951	18,369	21,550	6,173	3,420	52,463	3.96
Italy	1,796	14,286	9,687	1,072	22,742	49,583	3.74
Luxembourg	7,979	4,732	28,323	2,867	5,535	49,436	3.73
Spain	1,796	10,308	13,090	2,920	–	28,114	2.12
Netherlands	1,137	2,814	9,246	5,567	–	18,765	1.42
Switzerland	1,596	3,885	6,294	4,898	1,070	17,743	1.34
Ireland	272	2,481	12,508	1,288	–	16,548	1.25
Belgium	1,090	5,171	3,705	1,599	–	11,565	0.87

[1] Other includes commercial and industrial, insurance and other loans.

							Dec 31, 2019
in € m. (unless stated otherwise)	Banks and other financial institutions	Governments and Official institutions	Other[1]	Commit-ments	Net local country claim	Total	in %
United States	4,276	27,261	89,587	10,671	134,877	266,673	20.55
Great Britain	2,602	17,252	14,242	5,950	35,686	75,732	5.84
Luxembourg	8,781	7,929	39,403	2,994	7,968	67,076	5.17
France	4,152	13,836	26,823	6,109	3,352	54,272	4.18
Italy	4,106	14,898	15,505	1,166	6,065	41,739	3.22
Spain	3,214	7,482	13,197	1,366	–	25,259	1.95
Ireland	787	1,570	20,329	1,418	–	24,103	1.86
Switzerland	3,142	5,541	8,441	5,204	666	22,994	1.77
Netherlands	1,690	2,638	9,928	5,469	–	19,726	1.52
Japan	511	305	9,129	332	–	10,277	0.79

[1] Other includes commercial and industrial, insurance and other loans.

							Dec 31, 2018
in € m. (unless stated otherwise)	Banks and other financial institutions	Governments and Official institutions	Other[1]	Commit-ments	Net local country claim	Total	in %
United States	9,684	22,272	146,578	12,835	129,905	321,274	23.83
Luxembourg	8,446	7,474	37,708	3,840	6,548	64,015	4.75
France	5,850	7,185	25,098	5,056	–	43,190	3.20
Italy	3,617	12,572	12,875	1,008	5,045	35,117	2.60
Great Britain	3,360	12,480	10,159	4,907	–	30,905	2.29
Spain	3,790	7,927	12,022	1,835	–	25,574	1.90
Switzerland	2,338	4,464	13,516	3,895	1,065	25,277	1.87
Netherlands	1,333	3,998	14,172	5,266	–	24,770	1.84
Ireland	227	1,373	19,290	2,623	1	23,513	1.74
Japan	956	496	12,400	232	–	14,084	1.04
Belgium	3,040	2,426	4,339	1,095	–	10,900	0.81
China	4,470	970	4,618	516	–	10,574	0.78
India	2,135	706	4,822	246	2,511	10,419	0.77
Canada	1,209	309	7,240	1,332	–	10,090	0.75

[1] Other includes commercial and industrial, insurance and other loans.

IFRS 9 allowance for credit losses against financial assets at amortized cost

Breakdown of the movements in the Group's allowance for credit losses against financial assets at amortized cost

in € m. (unless stated otherwise)	2020	2019	2018
Balance, beginning of year	4,093	4,259	4,596
Charge-offs:			
German:			
Agriculture, forestry and fishing	(1)	0	0
Mining and quarrying	(0)	0	0
Manufacturing	(47)	(38)	(55)
Electricity, gas, steam and air conditioning supply	0	(2)	0
Water supply, sewerage, waste management and remediation activities	(0)	0	0
Construction	(4)	(1)	(1)
Wholesale and retail trade, repair of motor vehicles and motorcycles	(9)	(3)	(22)
Transport and storage	(4)	(68)	(159)
Accommodation and food service activities	(1)	(0)	(0)
Information and communication	(1)	(0)	(0)
Financial and insurance activities	(8)	(1)	(12)
Real estate activities	(1)	(0)	(1)
Professional, scientific and technical activities	(4)	(0)	(0)
Administrative and support service activities	(3)	(0)	(0)
Public administration and defense, compulsory social security	(0)	0	0
Education	(0)	(0)	0
Human health services and social work activities	(1)	(0)	0
Arts, entertainment and recreation	(0)	(0)	0
Other service activities	(1)	(3)	(4)
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	(156)	(252)	(121)
Activities of extraterritorial organizations and bodies	0	0	0
German total	(241)	(370)	(375)
Non-German total	(540)	(528)	(619)
Total charge-offs	(781)	(898)	(995)
Recoveries:			
German:			
Agriculture, forestry and fishing	0	0	0
Mining and quarrying	0	0	0
Manufacturing	8	4	14
Electricity, gas, steam and air conditioning supply	0	0	0
Water supply, sewerage, waste management and remediation activities	0	0	0
Construction	0	0	1
Wholesale and retail trade, repair of motor vehicles and motorcycles	2	4	1
Transport and storage	0	6	6
Accommodation and food service activities	0	0	0
Information and communication	0	0	0
Financial and insurance activities	0	1	0
Real estate activities	2	1	3
Professional, scientific and technical activities	0	0	0
Administrative and support service activities	12	15	1
Public administration and defense, compulsory social security	0	0	0
Education	0	0	0
Human health services and social work activities	0	0	0
Arts, entertainment and recreation	0	0	0
Other service activities	0	1	9
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	20	46	65
Activities of extraterritorial organizations and bodies	0	0	0
German total	46	78	99
Non-German total	12	18	73
Total recoveries	58	96	172
Net charge-offs	(723)	(802)	(823)
Provision for loan losses	1,686	636	507
Other changes (i.e., exchange rate changes, changes in the group of consolidated companies)	(110)	0	(21)
Balance, end of year[1]	4,946	4,093	4,259
Percentage of total net charge-offs to average loans for the year	0.19 %	0.21 %	0.24 %

[1] Fluctuation rate (Allowance for Credit Losses at end of reporting period/Total Loans at Amortized Costs before deduction of Allowance for Loan Losses at end of reporting period): 1.15% for 2020, 0.94 % for 2019 (restated) and 0.73% for 2018.

Allowance for credit losses against financial assets at amortized cost subject to impairment increased by € 853 million or 21 % in 2020 mainly driven by Stage 3:

Stage 1 allowances remained roughly stable with a slight decrease of € 5 million or 1 %.

Stage 2 allowances increased by € 156 million or 32% due to the update of the macroeconomic outlook.

Stage 3 allowances increased by € 702 million or 23% driven by new defaults across business divisions and the increase against the existing POCI loan portfolio.

Allowance for credit losses against financial assets at amortized cost subject to impairment dropped by € 166 million or 4 % in 2019 mainly driven by Stage 3:

Stage 1 allowances increased by € 40 million or 8 % driven by an increase in Loans at Amortized Cost in Investment Bank and Private Bank.

Stage 2 allowances remained roughly stable with a slight decrease of € 8 million or 2 %.

Stage 3 allowances decreased by € 198 million or 6 % driven by NPL sales in Private Bank as well as write-offs in shipping in Capital Release Unit, which were partly offset by new defaults in Corporate Bank and Investment Bank.

Allowance for credit losses against financial assets at amortized cost subject to impairment dropped by € 338 million or 7% in 2018 mainly driven by Stage 3:

Stage 1 allowances increased by € 47 million or 10 % driven by additional provisions in former CIB to reflect for a weakening macro-economic outlook as well as a one-off adjustment to the calculation methodology on certain loans on which we hold insurance protection.

Stage 2 allowances remained almost stable.

Stage 3 allowances decreased by € 391 million or 11 % driven by former CIB, where charge offs partly related to de-risking activities in our shipping portfolio overcompensated additional provisions.

The following table presents an analysis of the changes in the non-German component of the allowance for credit losses against financial assets at amortized cost. As of December 31, 2020, 56% of the Group's total allowance was attributable to non-German clients, compared to 55 % at the beginning of the year.

Non-German component of the allowance for credit losses against financial assets at amortized cost

in € m.	2020	2019	2018
Balance, beginning of year	**2,237**	2,434	2,760
Provision for loan losses	1,190	420	130
Net charge-offs	(527)	(510)	(547)
Charge-offs	(540)	(528)	(619)
Recoveries	14	18	73
Other changes (i.e., exchange rate changes, changes in the group of consolidated companies)	(53)	(107)	91
Balance, end of year	**2,848**	2,237	2,434

The following table presents the components of the Group's allowance for credit losses against financial assets at amortized cost by industry of the borrower, and the percentage of its total loan portfolio accounted for by those industry classifications, on the dates specified. The breakdown between German and non-German borrowers is based on the location of the borrowers.

Allowance for credit losses against financial assets at amortized cost by industry of the borrower

in € m. (unless stated otherwise)	Dec 31, 2020		Dec 31, 2019		Dec 31, 2018	
German:						
Agriculture, forestry and fishing	3	0 %	3	0 %	4	0 %
Mining and quarrying	2	0 %	1	0 %	2	0 %
Manufacturing	195	2 %	203	2 %	127	2 %
Electricity, gas, steam and air conditioning supply	33	0 %	1	0 %	3	0 %
Water supply, sewerage, waste management and remediation activities	3	0 %	4	0 %	4	0 %
Construction	37	0 %	39	0 %	38	0 %
Wholesale and retail trade, repair of motor vehicles and motorcycles	153	1 %	122	1 %	104	1 %
Transport and storage	30	0 %	32	0 %	105	0 %
Accommodation and food service activities	6	0 %	4	0 %	3	0 %
Information and communication	80	0 %	10	0 %	11	0 %
Financial and insurance activities	62	2 %	119	2 %	27	2 %
Real estate activities	78	3 %	47	2 %	53	2 %
Professional, scientific and technical activities	23	1 %	45	1 %	24	1 %
Administrative and support service activities	21	1 %	11	1 %	10	1 %
Public administration and defense, compulsory social security	0	1 %	0	1 %	0	1 %
Education	1	0 %	1	0 %	1	0 %
Human health services and social work activities	9	1 %	7	1 %	7	1 %
Arts, entertainment and recreation	1	0 %	1	0 %	1	0 %
Other service activities	11	1 %	11	0 %	11	1 %
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	1,352	36 %	1,197	34 %	1,291	34 %
Activities of extraterritorial organizations and bodies	0	0 %	0	0 %	0	0 %
German total	**2,098**	**50 %**	1,857	47 %	1,825	48 %
Non-German:						
Non-German total	**2,848**	**50 %**	2,236	53 %	2,434	52 %
Total allowance for loan losses	**4,946**		4,093		4,259	

Allowance for loan losses (comparables as reported under IAS 39)

Breakdown of the movements in the Group's allowance for loan losses

in € m. (unless stated otherwise)	2017	2016
Balance, beginning of year	4,546	5,028
Charge-offs:		
German:		
Financial intermediation	(1)	(1)
Manufacturing	(6)	(49)
Wholesale and retail trade	(12)	(10)
Households (excluding mortgages)	(149)	(309)
Households – mortgages	(53)	(90)
Commercial real estate activities	(1)	(6)
Public sector	0	(0)
Other	(68)	(156)
German total	(291)	(621)
Non-German total	(854)	(1,330)
Total charge-offs	(1,146)	(1,951)
Recoveries:		
German:		
Financial intermediation	0	0
Manufacturing	8	6
Wholesale and retail trade	3	3
Households (excluding mortgages)	19	22
Households – mortgages	40	44
Commercial real estate activities	11	5
Public sector	0	0
Other	17	13
German total	100	94
Non-German total	27	93
Total recoveries	127	187
Net charge-offs	(1,019)	(1,764)
Provision for loan losses	552	1,347
Other changes (i.e., exchange rate changes, changes in the group of consolidated companies)	(158)	(65)
Balance, end of year[1]	3,921	4,546
Percentage of total net charge-offs to average loans for the year	0.25 %	0.43 %

[1] Fluctuation rate (Allowance for Loan Losses at end of reporting period/Total Loans before deduction of Allowance for Loan Losses at end of reporting period): 0.97 % for 2017 and 1.10 % for 2016.

The Group's allowance for loan losses as of December 31, 2017 was € 3.9 billion, 55 % of which was related to collectively assessed and 45 % to individually assessed loan losses. The reduction in the allowance for loan losses of € 625 million compared to prior year end was driven by € 1.1 billion net charge-offs, partly offset by € 552 million of additional loan loss provisions.

The decrease in our individually assessed loan portfolio mainly resulted from former CIB, driven by all portfolios including shipping. Despite the year-over-year reduction, shipping continued to be the main driver of provision for credit losses in 2017, in part related to the re-evaluation of the respective impairment method during the year as discussed in Note 1 "Significant accounting policies and critical accounting estimates" to the consolidated financial statements. A further year-over-year reduction in former PCB was driven by a release in former Postbank. The decrease in provisions for our collectively assessed loan portfolio mainly resulted from the non-recurrence of one-off items related to assets reported under former NCOU in prior year and further reflected the good portfolio quality and ongoing benign economic environment in former PCB.

The decrease in 2017 in net charge-offs of € 745 million compared to 2016 was mainly driven by non-recurrence of net charge offs related to assets reported under former NCOU in 2016.

The following table presents an analysis of the changes in the non-German component of the allowance for loan losses. As of December 31, 2017, 61 % of the Group's total allowance was attributable to non-German clients compared to 67 % as of December 31, 2016.

Non-German component of the allowance for loan losses

in € m.	2017	2016
Balance, beginning of year	3,057	3,345
Provision for loan losses	278	1,004
Net charge-offs	(828)	(1,238)
Charge-offs	(854)	(1,330)
Recoveries	27	93
Other changes (i.e., exchange rate changes, changes in the group of consolidated companies)	(114)	(54)
Balance, end of year	2,394	3,057

The following table presents the components of the Group's allowance for loan losses by industry of the borrower, and the percentage of its total loan portfolio accounted for by those industry classifications, on the dates specified. The breakdown between German and non-German borrowers is based on the location of the borrowers.

Allowance for loan losses by industry of the borrower

in € m. (unless stated otherwise)	Dec 31, 2017		Dec 31, 2016	
German:				
Individually assessed loan loss allowance:				
Financial intermediation	0	1 %	0	1 %
Manufacturing	133	2 %	139	2 %
Households (excluding mortgages)	2	4 %	11	4 %
Households – mortgages	3	30 %	5	29 %
Public sector	0	2 %	0	3 %
Wholesale and retail trade	86	2 %	74	1 %
Commercial real estate activities	59	2 %	45	2 %
Other[1]	317	6 %	289	5 %
Individually assessed loan loss allowance German total	600		563	
Collectively assessed loan loss allowance	927		926	
German total	1,527	49 %	1,489	48 %
Non-German:				
Individually assessed loan loss allowance	1,166		1,508	
Collectively assessed loan loss allowance	1,228		1,549	
Non-German total	2,394	51 %	3,057	52 %
Total allowance for loan losses	3,921	100 %	4,546	100 %
Total individually assessed loan loss allowance	1,766		2,071	
Total collectively assessed loan loss allowance	2,155		2,475	
Total allowance for loan losses	3,921		4,546	

[1] Includes mainly Transportation and Services.

Deposits

The amount of other time deposits in the amount of U.S.$ 100,000 or more in offices in Germany was € 39.9 billion as of December 31, 2020, of which € 14.5 billion had maturities of three months or less, € 8.7 billion had maturities over three months but less than six months, € 6.8 billion had maturities of over six months but less than one year and € 10.1 billion had maturities of over one year. The amount of certificates of deposits in the amount of U.S.$ 100,000 or more in offices in Germany was € 54 million as of December 31, 2020, having maturities of three months or less.

The amount of certificates of deposits and other time deposits in the amount of U.S.$ 100,000 or more issued by non-German offices was € 28.6 billion as of December 31, 2020.

Total deposits by foreign depositors in German offices were € 44.8 billion, € 43.4 billion and € 40.5 billion as of December 31, 2020, 2019 and 2018, respectively.

Return on equity and assets

	2020	2019	2018
Return on average shareholders' equity (post-tax)[1]	1.01%	(8.96)%	0.43%
Return on average total assets (post-tax)[2]	0.04%	(0.38)%	0.02%
Equity to assets ratio[3]	3.50%	4.21%	4.32%
Dividend payout ratio:[4]			
Basic earnings per share	0	N/M	N/M
Diluted earnings per share	0	N/M	N/M

N/M – Not meaningful
[1] Net income (loss) attributable to Deutsche Bank shareholders as a percentage of average shareholders' equity.
[2] Net income (loss) attributable to Deutsche Bank shareholders as a percentage of average total assets.
[3] Average shareholders' equity as a percentage of average total assets for each year.
[4] Dividends paid per share in respect of each year as a percentage of the Group's basic and diluted earnings per share for that year.

Short-term borrowings with an original maturity of one year or less

The difference between the period-end and average balances for central bank funds purchased and securities sold under repurchase agreements mainly arises from fluctuating activity with respect to fixed income securities positions within Corporate Bank and Investment Bank divisions. Intra-quarter trading volume, which increases the monthly averages relative to quarter- and year-end, predominantly comprises financing of short-term positions in highly liquid U.S. Treasuries and Agencies, which is a result of the Bank providing liquidity to the market via market-making activity and is largely driven by client demand. These U.S. Treasury and Agency positions are very low risk and have negligible impact on the firm's liquidity and capital position.

in € m. (unless stated otherwise)	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018
Central bank funds purchased and securities sold under repurchase agreements:			
Balance, end of year	2,325	3,115	4,867
Average balance[1]	5,711	5,374	13,721
Maximum balance at any month-end	14,078	10,581	21,281
Weighted-average interest rate during the year	2.95%	6.76%	2.73%
Weighted-average interest rate on year-end balance	0.41%	1.13%	1.21%
Securities loaned:			
Balance, end of year	1,698	259	3,359
Average balance[1]	874	2,338	6,246
Maximum balance at any month-end	1,697	3,620	9,036
Weighted-average interest rate during the year	0.43%	3.16%	2.26%
Weighted-average interest rate on year-end balance	(0.10)%	1.77%	1.90%
Commercial paper:			
Balance, end of year	1,748	1,585	2,752
Average balance1	1,609	2,142	4,909
Maximum balance at any month-end	1,937	2,476	6,221
Weighted-average interest rate during the year	1.12%	1.45%	0.39%
Weighted-average interest rate on year-end balance	1.10%	1.84%	0.60%
Other:			
Balance, end of year	1,804	3,633	11,406
Average balance[1]	2,839	9,952	12,747
Maximum balance at any month-end	4,340	12,720	13,907
Weighted-average interest rate during the year	1.44%	1.32%	0.93%
Weighted-average interest rate on year-end balance	1.04%	1.30%	0.59%

[1] Based upon month-end balances.

Imprint

Deutsche Bank Aktiengesellschaft
Taunusanlage 12
60262 Frankfurt am Main
Germany
Telephone: +49 69 9 10 00
deutsche.bank@db.com