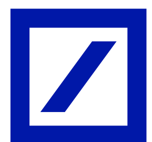
Deutsche Bank

DB USA Corporation

2020 Annual Stress Test Disclosure



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1 Overview and Requirements

DB USA Corporation ("DB USA Corp.", "we" or "our") is a U.S. bank holding company ("BHC") regulated by the Board of Governors of the Federal Reserve System ("FRB"), and is the primary U.S. intermediate holding company ("IHC") of Deutsche Bank Aktiengesellschaft ("DB AG", and together with its subsidiaries, "DB Group"). DB USA Corp. operates through its subsidiaries, including Deutsche Bank Trust Company Americas ("DBTCA"), a licensed New York State-chartered insured depository institution, as well as Deutsche Bank Securities Inc. ("DBSI"), a Delaware corporation and registered U.S. broker-dealer and investment adviser.

DB USA Corp. and its subsidiaries engage in a variety of lending, deposit taking, broker-dealer and other financial services activities. As of December 31, 2019, DB USA Corp. operated under three primary business divisions in the U.S.: the Corporate Bank (which includes the Global Transaction Banking and Commercial Banking businesses), the Investment Bank (which includes the Fixed Income & Currencies Sales & Trading business), and the Private Bank. Following its new strategy announcement on July 7, 2019, Deutsche Bank exited its Equities Sales & Trading business, while retaining a focused equity capital markets operation. Additionally, Deutsche Bank resized the capital consumption in Fixed Income, in particular Rates, and accelerated the wind-down of non-strategic assets.

Section 165(i)(2) of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act") and the related regulations promulgated thereunder by the FRB require certain BHCs and IHCs, such as DB USA Corp., to conduct stress tests, generally referred to as Dodd-Frank Act stress tests or "DFAST". Under the annual DFAST requirement pursuant to the FRB's regulations, DB USA Corp. is required to conduct and complete stress tests over a nine-quarter time horizon using a set of macroeconomic scenarios (Supervisory baseline and Supervisory severely adverse) provided by the FRB[1]. In addition to the macroeconomic scenarios, for the 2020 annual DFAST, DB USA Corp. was subject to market risk components including the global market shock ("GMS") and counterparty default scenario components to assess potential losses and capital impact in connection with its trading and counterparty activities[2]. The GMS is an instantaneous loss and a reduction in capital as of a specified point in time. These losses and related capital impact are included in projections for the first quarter of the planning horizon. The counterparty default scenario estimates the potential losses and related effects on capital associated with the instantaneous and unexpected default of the counterparty that would generate the largest losses across its derivatives and securities financing transactions, including securities lending and repurchase or reverse repurchase agreement activities.

The results of these stress tests are submitted to the FRB. For the 2020 annual DFAST, the forecast time horizon for the stress tests is the nine-quarter period beginning in the first quarter of 2020 (January 1, 2020) and continuing through the end of the first quarter of 2022 (March 31, 2022). The "as of" date for the GMS and counterparty default scenario component applicable to DB USA Corp. for the 2020 annual DFAST is October 18, 2019.

The DFAST rules require DB USA Corp. to publish a summary of our 2020 DFAST results under the Supervisory severely adverse scenario. The projections, which form the basis of the information provided

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[1] For more information with respect to the scenarios provided by the FRB, see Board of Governors of the Federal Reserve System (February 2020), "Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule - February 2020" (the "2020 FRB Scenario Release"), available at https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20200206a1.pdf.

[2] See the 2020 FRB Scenario Release, pages 5-8. As noted in the 2020 FRB Scenario Release, DB USA Corp. is subject to the global market shock ("GMS") component beginning in Comprehensive Capital Analysis and Review ("CCAR") 2019.

in this report, represent hypothetical estimates that involve an economic outcome that is more adverse than expected and, as such, these estimates do not represent DB USA Corp.'s actual expected losses, revenues, net income before taxes, or capital ratios. DFAST for DB USA Corp. was conducted in accordance with the CCAR 2020 Summary Instructions published by the FRB in March 2020 and the amended Capital Plan Rule[3] and Stress Test Rules[4], as applicable.

The results of DB USA Corp.'s annual DFAST indicate that we would expect to have ample capital throughout a hypothetical severe and protracted economic downturn to allow us to continue operations, maintain ready access to funding, remain a financial intermediary, satisfy our obligations to creditors and counterparties and meet the expectations of internal and external stakeholders.

2 Risk Types

DB USA Corp. has identified the following risks and risk drivers arising from its strategies and business activities under the Supervisory severely adverse scenario. Material risks, individually and in the aggregate, are incorporated in internally defined idiosyncratic events, in quantitative models, and non-model estimation approaches, and are projected to result in material balance sheet, income statement, or capital impacts.

2.1 Credit Risk

Credit risk arises from any transaction in which an actual, contingent or potential claim against a borrower, obligor, issuer or other counterparty exists. It captures the risk of loss due to a deterioration of a counterparty's creditworthiness, increase in DB USA Corp.'s exposure to that counterparty or deterioration or lack of enforceability of any collateral mitigating such exposures.

Risk drivers for Credit risk include, but are not limited to:

- Counterparty default risk related to loans, securities financing transactions and derivatives transactions;
- Loss severity due to a decline in collateral values or inability to utilize collateral; and
- Changes in commitment and exposure utilization.

2.2 Market Risk

Market risk is the risk of loss in the value of our inventory, as well as certain other financial assets and liabilities, due to changes in market conditions, such as changes in market prices, credit spreads, interest rates, and exchange rates across various asset classes.

Market risk in the trading book and fair value banking book is driven by the inventory DB USA Corp. holds and the impact of changes in market conditions on that inventory. DB USA Corp. holds inventory primarily for market making, capital market, investing and lending activities.

2.3 Liquidity Risk

Liquidity risk is the risk arising from the potential inability to meet all payment obligations when they come due or only being able to meet these obligations at excessive costs.

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[3] See 12 C.F.R. 225.8.

[4] See 12 C.F.R. 252 Subparts B and F.

Risk drivers for liquidity risk include, but are not limited to:

- Deposit outflows;
- Loss of other funding sources; and
- Inability to monetize assets.

With respect to liquidity risk, our primary objective is to ensure that DB USA Corp. has the ability to fulfill its payment obligations at all times and manage liquidity and funding risks. To meet this objective, we have in place a comprehensive and conservative liquidity management framework to identify, measure, monitor, and manage liquidity risk within DB USA Corp.'s defined risk appetite and limits.

DB USA Corp.'s 2020 annual DFAST process took certain liquidity risks into account through measuring funding adequacy across the nine-quarter projection horizon and projecting higher interest expense on DB USA Corp.'s funding under stress conditions.

2.4 Business Risk

Business risk is the risk assumed due to potential changes in general business conditions, such as changes in markets, client behaviors and technological developments. This can affect business results if DB USA Corp. fails to adjust quickly to changing conditions. Risk drivers for business risk include, but are not limited to:

- An economic downturn or a sudden, volatile market decline depressing (new) business activity;
- Changes in competition and the regulatory framework applicable to DB USA Corp. that result in significant business impact;
- Departure of key personnel, which in turn causes the firm to lose important client relationships; and
- Positioning decisions, including adverse impact on DB arising from a tax authority disputing a tax position taken.

2.5 Reputational Risk

Reputational risk is the risk of possible damage to DB USA Corp.'s brand and reputation, and the associated risk to earnings, capital or liquidity, arising from any association, action or inaction by DB USA Corp. and/or its affiliates, which could be perceived by stakeholders to be inappropriate, unethical or inconsistent with DB USA Corp.'s values and beliefs. Potential sources of reputational risk include, but are not limited to:

- Entering into transactions or products without substantive business or economic purpose, or with non-standard structures or terms;
- Associating with certain counterparties, industries, or sectors;
- Executing transactions with environmental or social issues; and
- Executing transactions or products perceived to be unethical, inappropriate or inconsistent with DB USA Corp.'s values and beliefs.

2.6 Non-Financial Risk

Non-financial risk and associated legal & non-legal losses are arising from "various sources, including inadequate or failed internal processes, people, and systems, or from external events, and can differ in frequency and severity" as the FRB states in Supervisory Letter SR 15-18.

This includes the risk of reputational damage, but excludes business and strategy risk.

The following ongoing, historically observed, or emerging operational risk-related loss types are covered by the Operational Loss Projection:

- Macro economically driven and non-macro economically driven expected operational losses that can be observed historically. These losses stem from systemic risk drivers and are often more predictable as these losses occur with high frequency, but typically have low severity;
- Idiosyncratic operational losses driven by firm-specific risk drivers, which may be exaggerated by economic downturn. These losses result from typically low frequency, high severity one-off, catastrophic (i.e., rare but plausible) events, which are difficult to predict quantitatively annually.

Non-financial risk may arise from mistakes, inadequate controls, or individual misconduct, and from various sources, including, but not limited to:

- Treatment of customers;
- Resiliency of technology and operations;
- Overly manual processes;
- Management of third parties;
- Information security;
- Compliance with laws, rules and regulations (including anti-financial crimes); and
- Employee lifecycle.

3 Methodology

For purposes of DFAST, DB USA Corp. uses quantitative models and non-model estimation approaches to project asset and liability balances, revenues, expenses, losses, risk weighted assets ("RWAs") and capital over the nine-quarter planning horizon. All quantitative models and non-model estimation approaches undergo a thorough review and challenge process and are validated for conceptual soundness.

3.1 Pre-Provision Net Revenue

Net interest income ("NII") is the product of projected balances and rates. Asset and liability balance projections take into consideration contractual maturity information, prepayments, new business, and non-accruals. Projected rates take into consideration contractual pricing for existing exposures and projected pricing on new business. Balances, prepayments, and non-accruals are projected using quantitative models and non-model estimation approaches, which leverage the historical relationship between modeled outcomes and drivers identified by each business segment.

Non-interest income is projected using quantitative models and non-model estimation approaches that incorporate key drivers and scenario inputs for fee income, trading gains/losses, other gains/losses, transfer pricing, and cash management.

With respect to non-interest expense, DB USA Corp. uses non-model estimation approaches that incorporate key drivers (e.g., spending strategy; historical information) and scenario inputs to project the sub-components of non-interest expense, including: salary expense, benefits expense, other personnel expenses, premises and fixed assets, communication and data services, and intercompany expenses.

3.2 Losses and Provisions

Credit Risk

DB USA Corp. projects credit losses under stress using an expected loss approach, where expected losses depend on the probability of default (“PD”), loss given default (“LGD”), and exposure at default (“EAD”). These risk parameters are projected under stress and then utilized to estimate DB USA Corp.'s potential net charge-offs (“NCOs”), Allowance for Credit Losses (“ACL”), and Provision for Credit Losses (“PCL”) over the projection horizon under the Current Expected Credit Loss (CECL) framework.

DB USA Corp. utilizes a suite of estimation approaches that reflect the characteristics and risks of each of DB USA Corp.’s sub-portfolios. The estimation approaches link variables (which may include macroeconomic and loan level variables) to the scenario-dependent projections. The macroeconomic variables considered include, but are not limited to: Gross Domestic Product, the US unemployment rate, House Price Index, and Commercial Real Estate Price Index.

With respect to credit valuation adjustment (“CVA”) exposure and counterparty default exposure, DB USA Corp. incorporated counterparty credit risk impacts into its 2020 annual DFAST results under the Supervisory severely adverse scenario through the 2020 Global Market Shock scenario component prescribed by the FRB.

Additionally, credit risk RWA is projected across the nine-quarter projection horizon, as described in Section 3.3.

Non-Financial Risk

DB USA's approach for projecting non-financial risk utilizes quantitative approaches, expert judgment, and scenario analysis to estimate losses from non-financial risk events under a variety of stressed conditions. Our methodology consists of five major components: Risk Identification, Idiosyncratic Scenario Analysis, Legal Loss Estimation, Non-Legal Loss Estimation & Material Risk Coverage.
It incorporates also business-as-usual processes for identifying non-financial risks for DB USA, using DB’s non-financial risk taxonomy. It then examines the appropriate coverage of each risk type in the overall Operational Loss Projection and is thereby used to develop the forward-looking Operational Loss Projection.

Market Risk

DB USA Corp. incorporated market risk impacts into its 2020 annual DFAST results under the Supervisory severely adverse scenario through an instantaneous global market shock. The projected impact of the global market shock scenario is considered across trading mark-to-market, issuer default loss, counterparty default losses, and credit valuation adjustment components.

The impacts of the macroeconomic scenarios are incorporated in stressed market risk RWA projections, as discussed in Section 3.3.

3.3 Changes in Capital Ratios

Capital projections utilize a framework that is based upon exposure identification and data sourcing, risk-weight classification, exposure calculation, aggregation, and report line item mapping. Using balances as of December 31, 2019, capital supply was projected based on anticipated activity over the

planning horizon and the resulting balance and pre-provision net revenue ("PPNR") projections under the Supervisory severely adverse scenario.

DB USA Corp. projects credit risk RWA using a model that forecasts stressed RWA for its portfolios in accordance with U.S. Basel III capital rules and supervisory guidance. The credit risk RWA projection approach takes into account scenario-specific macroeconomic variable projections, portfolio composition and balance sheet projections. Credit risk RWA components include counterparty credit risk for repo-style and derivative transactions, default fund contributions, equity exposures, unsettled transactions, and wholesale credit risk arising from lending activities. The projection approach applies tailored methodologies to address balance sheet positions, collateral, and off-balance sheet items.

Market risk RWA were projected using models for each market risk RWA component (i.e., value at risk, stressed value at risk, specific risk, and de minimis exposures)[5]. Specific risk is further segmented across securitized debt, non-securitized debt, and equity. Market risk RWA projections utilize macroeconomic scenario inputs and leverage models used for regulatory reporting.

3.4 Capital Actions

For purposes of DB USA Corp.'s DFAST results and as required by 12 C.F.R. 252.56(b), standardized capital action assumptions were applied as follows:

> *(1) For the first quarter of the planning horizon, the covered company must take into account its actual capital actions as of the end of that quarter; and*
>
> *(2) For each of the second through ninth quarters of the planning horizon, the covered company must include in the projections of capital:*
>
>> *(i) Common stock dividends equal to the quarterly average dollar amount of common stock dividends that the company paid in the previous year (that is, the first quarter of the planning horizon and the preceding three calendar quarters) plus common stock dividends attributable to issuances related to expensed employee compensation or in connection with a planned merger or acquisition to the extent that the merger or acquisition is reflected in the covered company's pro forma balance sheet estimates;*
>>
>> *(ii) Payments on any other instrument that is eligible for inclusion in the numerator of a regulatory capital ratio equal to the stated dividend, interest, or principal due on such instrument during the quarter;*
>>
>> *(iii) An assumption of no redemption or repurchase of any capital instrument that is eligible for inclusion in the numerator of a regulatory capital ratio; and*
>>
>> *(iv) An assumption of no issuances of common stock or preferred stock, except for issuances related to expensed employee compensation or in connection with a planned merger or acquisition to the extent that the merger or acquisition is reflected in the covered company's pro forma balance sheet estimates.*

[5] For further details on the components of the standardized measure for market risk, see 12 C.F.R. 217 Subpart F.

4 Annual DB USA Corp. Stress Test Results[6,7]

4.1 Pre-Provision Net Revenue, Provisions, Other Gains/Losses and Net Income before Taxes

Figure 4-1: DB USA Corp. Projected Nine-Quarter Cumulative PPNR, Provisions, Other Gains/Losses, and Net Income before Taxes under the Supervisory Severely Adverse Scenario

Projected PPNR, PCL, Other Gains/Losses, and Net Income before Taxes – DB USA Corp.		
$ millions	Cumulative 9-Quarters	Percent of Average Assets[8]
PPNR	(3,183)	(3.1)%
Other Revenue	—	—
Less		
Provision for Credit Losses	479	0.5%
Realized Losses/(Gains) on Securities (AFS/HTM)	—	—
Trading and Counterparty Losses	1,105	1.1%
Other Losses/(Gains)	—	—
Equals		
Net (Loss)/Income Before Taxes	(4,767)	(4.7)%

4.2 Cumulative Loan Losses

Figure 4-2: DB USA Corp. Projected Nine-Quarter Cumulative Loan Losses by Loan Type under the Supervisory Severely Adverse Scenario

Projected Loan Losses - DB USA Corp.		
$ millions	Cumulative 9-Quarters	Portfolio Loss Rates (%)[9]
Loan Losses	361.1	3.3%
First Lien Mortgages	8.3	0.4%
Second / Junior Liens and Mortgages	3.0	0.7%
CRE Loan	299.4	9.7%
C&I Loans	13.3	0.5%
Credit Cards	—	—
Other Consumer	1.1	1.3%
Other Loans	36.0	1.3%

[6] These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of expected losses, revenues, net income before taxes, or capital ratios.
[7] Numbers may not foot due to rounding.
[8] Average assets are calculated as the nine-quarter average of total assets.
[9] Portfolio loss rates are calculated as cumulative nine quarter loan losses divided by the average nine quarter loan balance. Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option and are calculated over nine quarters.

4.3 Risk Weighted Assets

Figure 4-3: DB USA Corp. Projected Risk Weighted Assets under the Supervisory Severely Adverse Scenario

$ billions	Q4 2019	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9
Risk-Weighted Assets	36.6	36.8	38.1	36.9	36.9	36.3	36.7	36.4	36.0	35.7

4.4 Capital Ratios

Figure 4-4: DB USA Corp. Capital Results under the Supervisory Severely Adverse Scenario

Capital Ratios – DB USA Corp.			
		Stressed Capital Ratios	
Capital Ratios (%)	Actual – 4Q19	Ending – 1Q22	Projected - 9Qtrs Minimum
Common Equity Tier 1 Capital Ratio	26.2	11.9	11.9
Tier 1 Capital Ratio	37.7	23.7	23.7
Total Capital Ratio	37.7	24.0	24.0
Tier 1 Leverage Ratio	9.8	6.9	6.9
Supplementary Leverage Ratio	9.1	6.4	6.4

5 Drivers of DB USA Corp. Stress Test Results

5.1 Capital Ratios

As of December 31, 2019, DB USA Corp. had Common Equity Tier 1 (“CET1”), Tier 1 capital, Total capital, Tier 1 leverage, and Supplementary leverage ratios of 26.2%, 37.7%, 37.7%, 9.8% and 9.1%, respectively.

Regulatory capital ratios are calculated and reported under U.S. Basel III-based capital rules as in effect for a given quarter.

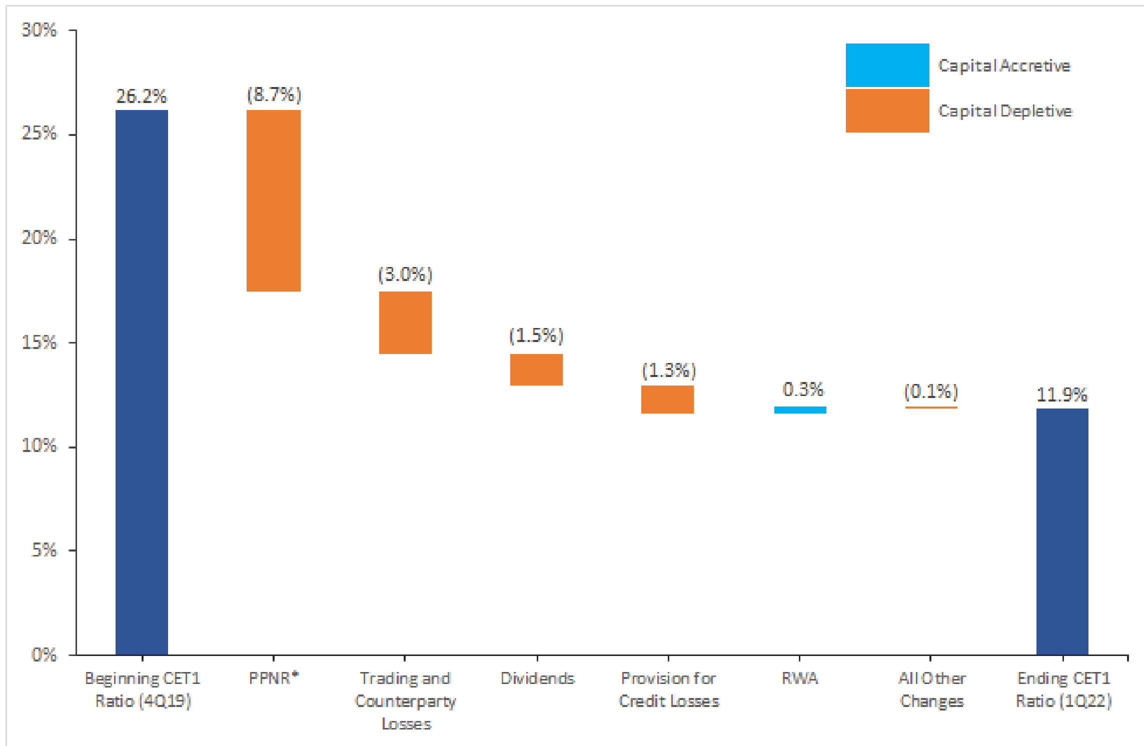
Throughout the projection horizon under the Supervisory severely adverse scenario, DB USA Corp. has capital ratios in excess of regulatory minimum CET1, Tier 1 capital, Total capital, Tier 1 leverage and Supplementary leverage ratio requirements of 4.5%, 6.0%, 8.0%, 4.0% and 3.0%, respectively. DB USA Corp. results show post-stress minimums of 11.9%, 23.7%, 24.0%, 6.9% and 6.4%, for CET1, Tier 1 capital, Total capital, Tier 1 leverage, and Supplementary leverage ratios, respectively.

The main drivers of the change in DB USA Corp.’s regulatory capital ratios over the nine quarter planning horizon in the Supervisory severely adverse scenario, as illustrated in Figure 5-1 below, consist of:

- Negative PPNR projections, driven by reduced interest income resulting from lower rates and reduced non-interest income resulting from lower fee revenue;
- Non-financial risk losses driven by idiosyncratic events and litigation expenses;
- Trading and counterparty losses;

- Payment of preferred dividends during the projection horizon;[10]
- Projected increase in PCL over the planning horizon; and
- The capital accretive impact of a decrease in RWAs at trough relative to jump-off.

Figure 5-1: Key Drivers of Annual DFAST Pro Forma CET1 Capital for DB USA Corp. under the Supervisory Severely Adverse Scenario[11]



*PPNR includes non-financial risk expenses.

[10] DB USA Corp.'s dividend projections on preferred stock reflect the application of the FRB's capital rules and required capital action assumptions, as described in Section 3.4.

[11] Numbers may not foot due to rounding.