# **DB USA Corporation**

# 2018 Mid-Cycle 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 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. DB USA Corp. operates under two primary business divisions in the U.S.: the Corporate & Investment Bank (which includes the Fixed Income & Currencies and Equities, Corporate Finance and Global Transaction Banking businesses); and the Private & Commercial Bank.

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 U.S. banking organizations, including 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, DB USA Corp. is required to conduct and complete stress testing over a nine-quarter time horizon using a set of macroeconomic scenarios (Supervisory baseline, Supervisory adverse and Supervisory severely adverse) provided by the FRB.¹ Under the mid-cycle DFAST requirements, DB USA Corp. is also required to conduct a mid-cycle stress test using a set of internally developed macroeconomic scenarios (BHC baseline, BHC adverse and BHC severely adverse) designed to stress the firm's idiosyncratic risks and vulnerabilities ("mid-cycle DFAST"). The results of these stress tests are submitted to the FRB. For the 2018 mid-cycle DFAST, the forecast time horizon for the stress test is the nine-quarter period beginning in the third quarter of 2018 (July 1, 2018) and continuing through the end of the third quarter of 2020 (September 30, 2020).

The DFAST rules require DB USA Corp. to publish a summary of its 2018 mid-cycle DFAST results under the BHC severely adverse scenario. The projections, which form the basis of the information provided 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 expected losses, revenues, net income before taxes, or capital ratios. The mid-cycle DFAST for DB USA Corp. was conducted in accordance with the amended Stress Test Rules.<sup>2</sup> The mid-cycle DFAST process is not conducted under the FRB's Capital Plan Rule<sup>3</sup> and is not part of the annual Comprehensive Capital Analysis and Review process. Accordingly, the FRB does not provide an objection or non-objection to a firm's mid-cycle DFAST results.

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

<sup>&</sup>lt;sup>1</sup> For more information with respect to the scenarios provided by the FRB, see Board of Governors of the Federal Reserve System (February 2018), "Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule - February 2018" (the "2018 FRB Scenario Release"), available at <a href="https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20180201a1.pdf">https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20180201a1.pdf</a>.

<sup>&</sup>lt;sup>2</sup> See 12 C.F.R. 252 Subpart F.

<sup>&</sup>lt;sup>3</sup> See 12 C.F.R. 225.8.

#### 1.1 Overview and Description of DB USA Corp.'s Severely Adverse Scenario

DB USA Corp.'s BHC severely adverse ("BHC SA") scenario assumes a severe recession in the U.S., a sharp global economic downturn, as well as a commensurate sell-off in risk-bearing assets. The scenario originates in the European Monetary Union ("EMU") as the rise of populist parties and movements undermines the tacit consensus on EMU economic and monetary governance. The refusal to abide by budgetary rules quickly escalates into a major stand-off between various EMU member states. A credible threat that the euro area would break-up emerges, causing a sharp rise in redenomination risk, capital flight from weaker EMU members, and financial market disruption.

The crisis in the EMU severely depresses consumption and investment spending. During the course of the scenario, Gross Domestic Product ("GDP") in the EMU contracts by up to 8.2%. A severe uncertainty shock, as well as trade and financial market linkages, cause a transmission of the crisis to the U.S. and global economy, with U.S. GDP contracting up to 6% over the scenario horizon. With the crisis manifesting first in Europe, the peak of the crisis hits the U.S. with a one-quarter delay. The U.S. unemployment rate peaks at 9.7% in Q2 2020, and residential house prices drop 21% on a national level.

The scenario assumes that U.S. monetary policy responds quickly to events. The FRB is expected to cut the federal funds target rate in three steps to a range of 0 to 25 bps. Additionally, the FRB is assumed to cut the interest rate on excess reserves ("IOER") even further to zero, thereby widening the gap between IOER and federal funds target rate from 5 bps to 25 bps. This policy is similar to what other central banks such as the European Central Bank have implemented in the past.

Other macroeconomic and market conditions assumed in DB USA Corp.'s BHC SA scenario include:

- U.S. Treasuries rally on monetary easing and safe haven flows;
- Yields on 10-Year U.S. Treasury bonds bottom out at 1.3%;
- The EUR weakens substantially as the crisis centers on the European monetary architecture, and the FX rate bottoms out at 0.95 USD per EUR;
- Risk assets are assumed to sell-off in line with the collapse in business sentiment and rising risk aversion:
- Implied market volatility (VIX) peaks at 70%;
- The S&P 500 market index drops up to 41%;
- Corporate credit spreads widen significantly, with BBB spreads peaking at 5 percentage points; and
- As a consequence of the severity of financial market disruptions, tensions arise in U.S. interbank money markets.

In addition, DB USA Corp. also incorporated an instantaneous Global Market Shock ("GMS") scenario that impacts trading mark-to-market losses (reflecting large, instantaneous price declines across securitized products and credit exposures, with relatively lower shocks across equity asset classes), as well as exposures related to counterparty default losses, issuer default losses, and stressed credit valuation adjustment ("CVA") losses. The losses arising from the GMS scenario occur in the first quarter of the projection horizon.

# 2 Risk Types

DB USA Corp. has identified the following risks and risk drivers arising from its strategies and business activities under the BHC SA scenario. Material risks, individually and in the aggregate, are incorporated in model and non-model estimation approaches, as well as internally defined idiosyncratic events, 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 and 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.

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

- Deposit outflows;
- Loss of funding sources; and
- Inability to monetize illiquid 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 liquidity management framework to identify, measure, monitor and manage liquidity risk in light of DB USA Corp.'s defined risk appetite and limits.

DB USA Corp.'s 2018 mid-cycle 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; and
- Departure of key personnel, which in turn causes the firm to lose important client relationships.

#### 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 is the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events. Non-financial risk, as referred to in this document, includes legal risk, but excludes business risk and reputational risk (see Section 2.4 and Section 2.5, respectively).

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, revenue, expenses, losses, risk weighted assets ("RWA") 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 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.

Non-interest expense is projected using 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, loss given default, and exposure at default. These risk parameters are projected under stress and then utilized to estimate DB USA Corp.'s potential net charge-offs ("NCOs"), allowance for loan and lease losses ("ALLL"), and provision for loan and lease losses ("PLLL") over the nine-quarter projection horizon.

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 U.S. unemployment rate, House Price Index, and Commercial Real Estate Price Index.

With respect to CVA exposure and counterparty default loss ("CDL") exposure, DB USA Corp. incorporated counterparty credit risk impacts into its 2018 mid-cycle DFAST results under the BHC SA scenario through an instantaneous GMS scenario.

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

#### **Non-Financial Risk**

DB USA Corp.'s approach for projecting non-financial risk losses includes three primary components: (i) forward-looking hypothetical idiosyncratic legal and non-legal events; (ii) estimates of future legal or regulatory claims for known matters; and (iii) historical losses. The non-financial risk loss projection process begins with risk identification, followed by data aggregation and processing, execution of quantitative models, development of idiosyncratic events, comparison to benchmarks, and, finally, comprehensive review and challenge.

#### **Market Risk**

DB USA Corp. incorporated market risk impacts into its 2018 mid-cycle DFAST results under the BHC SA scenario through an instantaneous GMS scenario. These impacts capture trading mark-to-market and issuer default risks in the trading and fair value banking book.

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 June 30, 2018, 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 BHC SA scenario.

DB USA Corp. projects credit risk RWA using a model that forecasts stressed RWAs for DB USA Corp. 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 funds, equity exposures, unsettled transactions, and wholesale credit risk arising from lending activities. The projection approach applies tailored methodologies to address balance sheet positions, collateral credit quality, and off balance sheet items.

Market risk RWAs 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). 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 the DFAST results set forth herein, standardized capital action assumptions were applied as required by 12 C.F.R. 252.56(b), as follows:

- (1) For the first quarter of the planning horizon, the bank holding 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 bank holding company must include in the projections of capital:

<sup>&</sup>lt;sup>4</sup> For further details on the components of the standardized measure for market risk, see 12 C.F.R. 217 Subpart F.

- 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.

# 4 Mid-Cycle DB USA Corp. Stress Test Results<sup>5</sup>

# 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, PLLL, Other Gains/Loss and Net Income before Taxes under the BHC Severely Adverse Scenario

Projected PPNR, PLLL, Other Gains/Losses and Net Income before Taxes – DB USA Corp.				
\$ millions	Cumulative 9Qtrs	Percent of Average Assets <sup>6</sup>		
PPNR	(2,679)	(2.4)%		
Other Revenue	-	-		
Less				
Provision for Loan and Lease Losses	219	0.2%		
Realized Losses/(Gains) on Securities (AFS/HTM)	-	-		
Trading and Counterparty Losses	839	0.8%		
Other Losses/(Gains)	-	-		
Equals				
Net (Loss)/Income Before Taxes	(3,737)	(3.4)%		

#### 4.2 Cumulative Loan Losses

Figure 4-2: DB USA Corp. Projected Nine-Quarter Cumulative Loan Losses by Loan Type under the BHC Severely Adverse Scenario<sup>7</sup>

Projected Loan Losses – DB USA Corp.				
\$ millions	Cumulative 9- Quarters	Portfolio Loss Rates (%) <sup>8</sup>		
oan Losses	198.3	198.3 1.4%		
First Lien Mortgages, Domestic	35.9	1.7%		
Junior Liens and HELOCs, Domestic	21.0	2.9%		
Commercial and Industrial	10.1	0.6%		
Commercial Real Estate, Domestic	78.2	3.0%		
Credit Cards	-	-		
Other Consumer	0.6	0.5%		
Other Loans	52.5	0.8%		

<sup>&</sup>lt;sup>5</sup> 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.

<sup>&</sup>lt;sup>6</sup> Average assets are calculated as the nine-quarter average of total assets.

<sup>&</sup>lt;sup>7</sup> Numbers may not foot due to rounding.

<sup>&</sup>lt;sup>8</sup> 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

Actual 2Q18 and Projected 3Q20 Risk Weighted Assets under the BHC Severely Adverse Scenario – DB USA Corp.		
e hillions	A-111-1 2042	Projected 3Q20
\$ billions	Actual 2Q18	Standardized Approach
Risk Weighted Assets	37.5	41.8

# 4.4 Capital Ratios

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

Capital Ratios – DB USA Corp.						
		Stressed Capital Ratios				
Capital Ratios (%)	Actual – 2Q18	Ending – 3Q20	Projected – 9Qtrs Minimum			
Common Equity Tier 1 Capital Ratio	20.9	9.9	9.9			
Tier 1 Capital Ratio	32.0	19.9	19.9			
Total Capital Ratio	32.1	20.0	20.0			
Tier 1 Leverage Ratio	8.3	6.3	6.3			
Supplementary Leverage Ratio	7.6	5.7	5.7			

### 5 Drivers of DB USA Corp. Stress Test Results

#### 5.1 Capital Ratios<sup>9</sup>

As of June 30, 2018, DB USA Corp. had Common Equity Tier 1 ("CET1"), Tier 1 capital, Total capital, Tier 1 leverage and Supplementary leverage ratios of 20.9%, 32.0%, 32.1%, 8.3%, and 7.6%, respectively.

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

Throughout the projection horizon under the BHC SA scenario, DB USA Corp. has capital ratios substantially in excess of 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 9.9%, 19.9%, 20.0%, 6.3% and 5.7% for CET1, Tier 1 capital, Total capital, Tier 1 leverage and Supplementary leverage ratios, respectively.

The main drivers of changes in DB USA Corp.'s regulatory capital ratios over the nine-quarter planning horizon in the BHC SA scenario consist of:

- Negative PPNR projections, driven by non-financial risk expenses, reduced interest income resulting from lower rates and reduced non-interest income resulting from lower fee revenue;
- Trading and counterparty losses based on the instantaneous GMS event;
- Payment of preferred dividends during the projection horizon;<sup>10</sup>
- Projected increase in PLLL over the planning horizon; and
- Credit risk RWA increases driven by increases in loans and other assets.

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<sup>&</sup>lt;sup>9</sup> 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. <sup>10</sup> DB USA Corp.'s dividend projections reflect the application of the FRB's capital rules and required capital action assumptions, as described in Section 3.4.

25% 20.9% (7.1%)20% 15% (2.2%)(2.2%)9.9% 2.2% (0.6%)10% (1.1%)5% 0% Beginning PPNR\* Trading and Dividends Provision for RWA All Other Ending CET1 **CET1** Ratio Counterparty Ratio (3Q20) Loan and Changes (2Q18) Losses Lease Losses

Figure 5-1: Key Drivers of Mid-Cycle DFAST Pro Forma CET1 Capital for DB USA Corp. under the BHC Severely Adverse Scenario

DB USA Corp.'s disclosures of projected results, risks, and assumptions are hypothetical pursuant to the requirements of the DFAST and related instructions. These scenarios and assumptions do not reflect DB USA Corp.'s future expectations; they involve an economic outcome that is more adverse than expected and, as such, these estimates do not represent DB USA Corp.'s expected losses, revenues, net income before taxes, or capital ratios.

<sup>\*</sup>PPNR includes impacts from non-financial expenses.