Deutsche Bank

DB USA Corporation

2019 Mid-Cycle Stress Test Disclosure

TABLE OF CONTENTS

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 June 30, 2019, DB USA Corp. operated 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. Following its new strategy announcement on July 7, 2019, Deutsche Bank will exit its Equities Sales & Trading business, while retaining a focused equity capital markets operation. Additionally, Deutsche Bank will resize the capital consumption in Fixed Income, in particular Rates, and accelerate 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 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 2019 mid-cycle DFAST, the forecast time horizon for the stress test is the nine-quarter period beginning in the third quarter of 2019 (July 1, 2019) and continuing through the end of the third quarter of 2021 (September 30, 2021).

The DFAST rules require DB USA Corp. to publish a summary of its 2019 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.[2] The mid-cycle DFAST process is not conducted under the FRB's Capital Plan Rule[3] 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.

[1] For more information with respect to the scenarios provided by the FRB, see Board of Governors of the Federal Reserve System (February 2019), "Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule - February 2019" (the "2019 FRB Scenario Release"), available at https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20180201a1.pdf.
[2] See 12 C.F.R. 252 Subpart F.
[3] See 12 C.F.R. 225.8.

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

DB USA's severely adverse scenario ("BHC SA") assumes a severe recession in the U.S., a sharp global economic downturn, and a commensurate sell-off in risk-bearing assets. The scenario originates from a sharp rise in trade protectionist sentiment across the globe. This includes the imposition of higher tariffs on goods and services, significant non-tariff barriers, as well as restrictions on cross-border investments and activities of foreign affiliates.

Under this scenario, global trade volumes are projected to contract up to 54%. This causes a shock to global aggregate demand and a sharp increase in business uncertainty, which further depresses investment and consumption spending. As a consequence, Gross Domestic Product ("GDP") in the U.S. contracts up to 6.5%, and the U.S. unemployment rate peaks at 11.3% during the scenario horizon.

The disruption of globally connected supply chains and higher prices of imported goods lead to a supply shock with moderately higher inflation, despite overall depressed aggregate demand. Higher inflation and strategic disinvestments of U.S. Treasury bonds by major U.S. trading partners contribute to a moderate sell-off in U.S. government bonds. Yields on 10-Year U.S. Treasury bonds peak at 3.2%. Additionally, equity markets sell off and credit spreads widen massively as financing conditions tighten.

In response to the recession, the FRB is expected to cut the federal funds target rate in several 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. 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:

- Yields on U.S. Treasuries rise moderately as a result of higher inflation and strategic disinvestments by major U.S. trading partners, with yields on 10-Year U.S. Treasury bonds peaking at 3.2% in Q3 2020;
- The USD exchange rate depreciates against the EUR and other currencies;
- 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 81%;
- The Dow Jones Total Market Index drops up to 59%;
- Corporate credit spreads widen significantly, with BBB spreads peaking at 5.9%; 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") 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 severely adverse scenario. Material risks, individually and in the aggregate, are incorporated in internally defined idiosyncratic events, 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.

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 and conservative 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 2019 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;
- 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 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, revenues, 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 ("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 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 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 2019 mid-cycle DFAST results under the BHC severely adverse 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 events; (ii) estimates of the potential outflows related to historical legal losses, pending litigation and regulatory enforcement actions, and unknown potential future legal claims; and (iii) an estimate for non-legal losses. The non-financial risk loss projection process begins with data aggregation and processing, followed by execution of quantitative models and development of idiosyncratic events, comparison to benchmarks, and, finally, comprehensive review and challenge.

Market Risk

DB USA Corp. incorporated market risk impacts into its 2019 mid-cycle DFAST results under the BHC severely adverse scenario through an instantaneous Global Market Shock scenario.

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, 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 BHC severely adverse scenario.

DB USA Corp. projects credit RWAs using a model that forecasts stressed RWAs for its portfolios in accordance with U.S. Basel III capital rules and supervisory guidance. The credit RWA projections take into account scenario-specific macroeconomic variable projections, portfolio composition and balance sheet projections. Credit 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 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).[4] 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:*

[4] 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[5, 6]

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, Other Gains/Losses 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[7]**
PPNR	(3,118)	(3.0%)
Other Revenue	-	-
Less		
Provision for Loan and Lease Losses	548	0.5%
Realized Losses/(Gains) on Securities (AFS/HTM)	-	-
Trading and Counterparty Losses	1,218	1.2%
Other Losses/(Gains)	-	-
Equals		
Net (Loss)/Income Before Taxes	(4,885)	(4.6%)

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

Projected Loan Losses - DB USA Corp.		
$ millions	**Cumulative 9-Quarters**	**Portfolio Loss Rates (%)[8]**
Loan Losses	390.8	3.5%
First Lien Mortgages	7.4	0.4%
Second / Junior Liens and Mortgages	3.1	0.5%
CRE Loan	317.3	11.1%
C&I Loans	13.4	0.6%
Credit Cards	-	-
Other Consumer	1.2	1.5%
Other Loans	48.4	1.4%

[5] 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.

[6] Numbers may not foot due to rounding.

[7] Average assets are calculated as the nine-quarter average of total assets.

[8] 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

$ billions	Q2 2019	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9
Risk-Weighted Assets ($)	39.3	36.3	34.3	34.4	34.8	34.8	34.8	34.8	35.2	35.3

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 – 2Q19	Ending – 3Q21	Projected - 9Qtrs Minimum
Common Equity Tier 1 Capital Ratio	23.5	11.4	11.4
Tier 1 Capital Ratio	34.2	23.3	23.3
Total Capital Ratio	34.2	23.8	23.8
Tier 1 Leverage Ratio	8.9	6.7	6.7
Supplementary Leverage Ratio	8.2	5.8	5.8

5 Drivers of DB USA Corp. Stress Test Results

5.1 Capital Ratios

As of June 30, 2019, DB USA Corp. had Common Equity Tier 1 ("CET1"), Tier 1 capital, Total capital, Tier 1 leverage, and Supplementary leverage ratios of 23.5%, 34.2%, 34.2%, 8.9% and 8.2%, respectively.

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

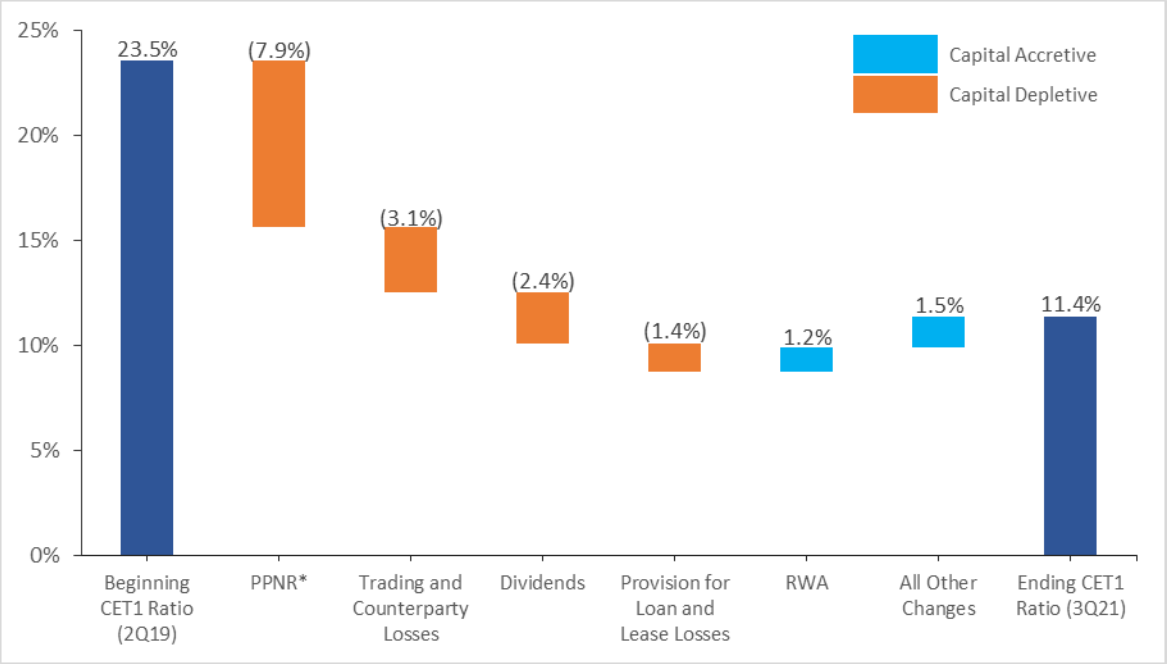
Throughout the projection horizon under the BHC severely adverse scenario, DB USA Corp. has capital ratios in excess of regulatory minimum CET1, Tier 1 capital, Total capital, Tier 1 leverage and Supplementary leverage ratio requirements of 4.5%, 6.0%, 8.0%, 4.0% and 3.0%, respectively. DB USA Corp. results show post-stress minimums of 11.4%, 23.3%, 23.8%, 6.7% and 5.8%, 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 BHC 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;[9]
- Projected increase in PLLL over the planning horizon; and
- The capital accretive impact of a decrease in RWA at trough relative to jump-off.

[9] 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.

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



*PPNR includes non-financial risk expenses.