

Deutsche Bank

Deutsche Bank Trust Corporation

2015 Mid-Cycle Stress Test Disclosure

*Passion to Perform*



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## 1 Overview and Requirements

Deutsche Bank Trust Corporation (“DBTC”, “we” or “our”) is a U.S. bank holding company (“BHC”) regulated by the Board of Governors of the Federal Reserve System (“FRB”) that primarily engages in commercial banking activities through its main depository institution subsidiary, Deutsche Bank Trust Company Americas (“DBTCA”). DBTC is a wholly-owned subsidiary of Deutsche Bank Aktiengesellschaft (“DBAG”, and together with its subsidiaries, “DB Group”).

DBTC and its subsidiaries engage in a variety of lending, deposit taking and other financial services activities. DBTC has four primary Lines of Business (“LoBs”): Global Transaction Banking (“GTB”), Asset and Wealth Management (“AWM”), Corporate Banking & Securities (“CB&S”), and Non-Core Operations Unit (“NCOU”).

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 U.S. BHCs with \$50 billion or more of total consolidated assets, such as DBTC, to conduct two stress tests each year, generally referred to as the Dodd-Frank Act stress tests or “DFAST”. Under the annual DFAST requirement, DBTC is required to conduct and complete stress tests using a set of macroeconomic scenarios (supervisory baseline, supervisory adverse and supervisory severely adverse) developed by the FRB. Under the mid-cycle DFAST requirements, DBTC is also required to conduct a mid-cycle stress tests 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 both of these stress tests are submitted to the FRB.

The DFAST rules also require DBTC to publish this summary of our 2015 Mid-Cycle DFAST results based on 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 DBTC’s expected losses, revenues, net income before taxes, or capital ratios. The Mid-Cycle DFAST process is not conducted under the FRB’s capital plan rule 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.

### 1.1 Overview and Description of DBTC’s Severely Adverse Scenario

DBTC’s BHC severely adverse (“BHC SA”) scenario is driven by a severe escalation of the current European crisis in which recovery fails to gain traction in the European Monetary Union (“EMU”) which triggers a severe global recession in Q2 2015. These negative macroeconomic circumstances spill over to the U.S., and global output lags more generally by Q3 2015, triggering a severe global economic and financial crisis. Under our BHC SA scenario the FRB is expected to set a negative interest rate on excess reserves (up to -0.5% in 2015) to stimulate lending as a consequence. The general collapse in aggregate demand and economic activity pushes down inflation and results in a severe increase in U.S. unemployment, which reaches its peak in Q4 2016. The global crisis leads to negative interest rates, increased unemployment and the S&P 500 market index dropping by 54%, starting in 2015. Commercial and residential real estate prices also generally fall in line with economic fundamentals.

More specifically, DBTC’s BHC SA scenario is characterized by a number of macro-economic and market conditions, including the following:

- Global recession triggered by an [EMU][European Union] crisis as described above;
- Sharp financial market sell-off and sustained spike in volatility;
- U.S. GDP contraction by up to 5.4% and an EU GDP contraction by up to 7.1%;
- U.S. unemployment peaking at 11.1%;
- Negative interest rates on excess reserves (IOER at -0.5% by Q3 2015);
- Sharp drop in yields and widening credit spreads as the financial sell-off triggers safe-haven flows and boosts risk aversion with a 10 year spread at 828 bps over 3 month Libor;
- Temporary negative yield on 3-month U.S. Treasury Bills;
- Moderate increase in LIBOR, reflecting some stress in the interbank money market;
- USD rallies on safe haven flows; the USD drops below parity with EUR in 2015; and
- Residential house prices decline by up to 23% and commercial real estate prices decline by up to 25% in the U.S.

Certain idiosyncratic events for credit and operational risk were also included in the BHC SA stress scenario. The scenario includes a counterparty default event on a large overnight overdraft exposure will stress the credit risks identified in the cash management and lending business of DBTCA. Two Operational Risk idiosyncratic scenarios were also included: (a) a material loss related to litigation/regulatory enforcement action and (b) a material loss due to incorrect processing of a transaction.

## 2 Risks and Vulnerabilities

DBTC has identified the following risks and risk drivers arising from its strategies and business activities. Material risks, individually and in the aggregate, are incorporated in the internally defined stress scenarios and 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 or other counterparty exists.

Risk drivers for Credit Risk include,

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

AWM mortgage loans and CB&S C&I loans continue to drive the majority of Credit Risk losses.

### 2.2 Operational Risk

Operational Risk is the risk of loss resulting from inadequate or failed internal processes, people and systems as well as from external events. This includes legal risk and excludes strategic and business risk.

Risk drivers for Operational Risk include,

- Transaction processing risks;
- Information security risks (e.g. cyber security, identity risk); and
- Technology and infrastructure disruption risks.

Many of the key drivers of reputational and compliance risks are also drivers of the Operational Risk exposure of DBTC as described below.

## 2.3 Market Risk

Market Risk, in general, arises from the uncertainty concerning changes in market prices and rates (including interest rates, foreign exchange rates, equity prices and commodity prices) and other relevant parameters. As trading assets represent less than 1% of total assets, DBTC is exposed to a limited amount of Market Risk that is predominantly driven by interest rates (including credit spreads).

## 2.4 Liquidity Risk

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

Risk drivers for Liquidity Risk (e.g., extensive deposit withdrawal and inability to fund assets; and the inability to syndicate a lending facility and fronting risk) were considered to have low materiality as 97% of DBTC's consolidated balance sheet resides in DBTCA and the assets are funded by DBTCA solely with stable deposits and equity capital.

## 2.5 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 DBTC fails to adjust quickly to changing conditions.

Risk drivers for Business Risk include,

- An economic downturn which would drive a decline of (new) business activity coupled with rising utilization / credit losses; and
- Changes in competition and the regulatory framework with significant business impact.

## 2.6 Reputational Risk

Reputational Risk is the risk that publicity concerning a transaction, counterparty or business practice will negatively impact the public's trust in DBTC (and/or its affiliates). A negative impact on the public's trust can have several dimensions – client, counterparty and employee perception, credibility with regulators and other governmental entities or investor confidence. Potential sources of Reputational Risk include, but are not limited to:

- Unsuitable products or transactions;
- Regulatory actions;
- Dealings with certain clients; and,
- Employee misconduct.

## 2.7 Compliance Risk

Compliance risk is defined as the current or prospective risk to earnings and capital arising from violations of non-compliance with laws, rules and regulations or ethical standards which can lead to fines, damages and/or the voiding of contracts and diminish an institution's reputation (as discussed above). Potential sources of Compliance Risk include, but are not limited to:

- Duties to customers risk (e.g., client suitability, fiduciary risk);
- Supervisory control risks and regulatory compliance risks.

### 3 Mid-Cycle DBTC Stress Test Results

#### 3.1 Capital Ratios

Figure 2-1: DBTC Capital Results Under the BHC Severely Adverse Scenario

Capital Ratios – DBTC			
Capital Ratios (%) <sup>1</sup>	Beginning - 1Q15	Ending – 2Q17	Projected - 9Qtrs Minimum
Tier 1 Common Capital Ratio	36.3	33.9	30.7
Common Equity Tier 1 Capital Ratio	34.4	31.2	28.4
Tier 1 Capital Ratio	34.4	31.2	28.4
Total Capital Ratio <sup>A</sup>	34.5	31.3	28.5
Tier 1 Leverage Ratio	13.0	13.4	11.8

Footnote A - Including the impact of projected allowances for unused commitments and off balance sheet assets Total Capital Ratio in Q217 would be 31.6% and projected 9Qtrs Minimum would be 28.9%.

#### 3.2 PPNR, Provisions, Other Gains/Losses and Net Income before Taxes

Figure 2-2: DBTC Projected Nine-Quarter Cumulative Pre-Provision Net Revenue (“PPNR”), Provision for Loan and Lease Losses (“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 – DBTC	
\$ millions	Cumulative 9Qtrs
PPNR <sup>B</sup>	(285)
Other Revenue	0
Less :	
Provision for Loan and Lease Losses	219
Realized Losses/(Gains) on Securities (AFS/HTM)	0
Other Losses/(Gains)	256
Equals	
Net (Loss)/Income Before Taxes	(761)

<sup>B</sup> Trading and counterparty losses are included in PPNR.

<sup>1</sup> Tier 1 Common Capital Ratio is calculated under Basel I rules (General Approach) for 1Q15 and throughout the entire projection horizon. Common Equity Tier 1 Capital Ratio, Tier 1 Capital Ratio, Total Capital Ratio and Tier 1 Leverage Ratio are calculated under U.S. Basel III (Standardized Approach) rules throughout the entire projection horizon.

### 3.3 Cumulative Loan Losses

Figure 2-3: DBTC Projected Nine-Quarter Cumulative Loan Losses by Loan Type under the BHC Severely Adverse Scenario

Projected Loan Losses – DBTC		
\$ millions <sup>a</sup>	Cumulative 9-Quarters	Portfolio Loss Rates (%) <sup>b</sup>
Loan Losses	194	0.94
First Lien Mortgages, Domestic	63	1.81
Junior Liens and HELOCs, Domestic	4	1.81
Commercial and Industrial	71	2.05
Commercial Real Estate, Domestic	3	0.16
Credit Cards	N/A	N/A
Other Consumer	0	0.15
Other Loans	53	0.46

<sup>a</sup> Losses under 1mn reflected as zero

<sup>b</sup> Portfolio loss rates are calculated as cumulative 9 Qtr loan losses divided by the average 9 Qtr loan balance.

### 3.4 Risk Weighted Assets

Figure 2-4: DBTC Projected Risk Weighted Assets

Actual 1Q15 and Projected 2Q17 Risk-Weighted Assets under the BHC Severely Adverse Scenario - DBTC			
\$ millions	Actual 1Q15	Projected 2Q17	
		General Approach	Standardized Approach
Risk Weighted Assets	21,275	19,986	21,652

## 4 Drivers of DBTC Stress Test Results

### 4.1 Capital Ratios

As of March 31, 2015, DBTC had Tier 1 common, Common Equity Tier 1 (“CET1”), Tier 1 capital, Total capital, and Tier 1 leverage ratios of 36.3%, 34.4%, 34.4%, 34.5% and 13.0%, respectively. DBTC’s capital is mainly composed of CET1 which is the highest form of loss absorbing capital.

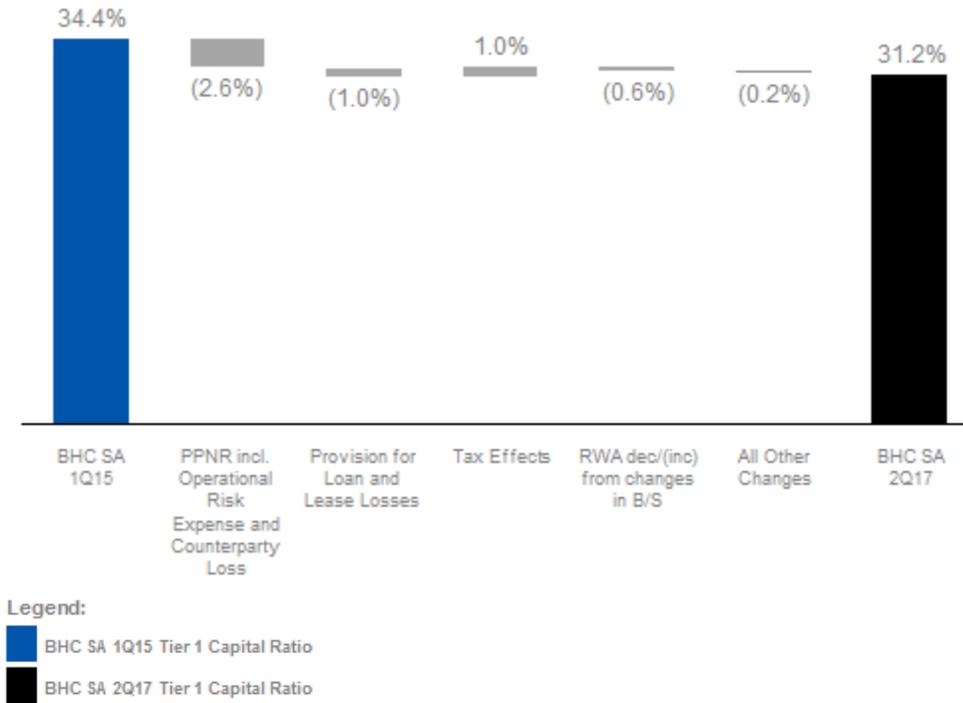
Regulatory Capital Ratios are calculated and reported under U.S. Basel III based capital rules which became effective on January 1, 2015, as applicable.

Throughout the projection horizon under the BHC SA scenario, DBTC has Capital Ratios substantially in excess of minimum Tier 1 common, CET1, Tier 1 capital, Total capital, and Tier 1 leverage ratio requirements of 5%, 4.5%, 6%, 8%, and 4%, respectively. DBTC results show post-stress minimums of 30.7%, 28.4%, 28.4%, 28.5%, and 11.8% for Tier 1 common, CET1, Tier 1 capital, Total capital, and Tier 1 leverage ratios, respectively.

The main drivers of changes in DBTC’s regulatory Capital Ratios over the nine quarter planning horizon in our BHC SA scenario consist of:

- Decreases in Tier 1 capital, Tier 1 common equity, CET1, and Total capital, mainly due to cumulative projected net losses after tax of \$759mn over the planning horizon; and,
- Overall net increased risk weighted assets (“RWAs”), mainly driven by balance sheet changes including net loan growth, reduction in cash and other assets, and a reduction in unused commercial lending commitments and letters of credit.

Key Drivers of DFAST Mid-Cycle Pro Forma Tier 1 Capital<sup>2</sup>



## 4.2 Pre-Provision Net Revenue

Under our BHC SA scenario, cumulative PPNR is negative over the planning horizon due to:

- Reduced net interest income arising from lower interest margin and loan balances
- Reduced non-interest income primarily driven by lower fee income;
- Increased losses from potentially significantly higher litigation and regulatory enforcement actions; and
- Losses from increased transaction processing risks.

## 4.3 Loan Losses

DBTC’s business strategy and risk profile have changed significantly since 2008, with an emphasis on improving the credit quality of the portfolio. This initiative has primarily been driven by tighter underwriting standards especially in Leveraged and Structured Finance (“LSF”), Residential Real

<sup>2</sup> Numbers may not foot due to rounding.

Estate and the Commercial Real Estate (“CRE”) business within CB&S. In addition, the legacy securitization portfolio has been successfully wound down and the CRE and LSF portfolios are in run-off mode, as the business transitions to other legal entities.

For the BHC SA scenario, the cumulative loan loss projection over the planning horizon totals \$194 mn with a loan loss rate of 0.94%. These loss projections are less than those projected for DBTC’s 2015 CCAR submission, which were \$285 mn and 1.28% respectively. DBTC’s business strategy of reducing exposure in the CB&S business, while increasing exposures in AWM and GTB, which both have lower loss rates, is the primary driver for the reduction in loan loss projections. .

Compared to DBTC historical losses during the most recent financial crisis, projected net charge offs (“NCOs”) were deemed conservative after factoring in the change in exposures and the improved overall credit quality of the portfolio.

## 5 Methodology

For purposes of DFAST, DBTC uses quantitative models, expert judgment methodologies and rule-based approaches, together with management adjustments compensating for sources of uncertainty, to project asset and liability balances, revenue, losses, RWA and capital over the planning horizon.

### 5.1 Pre-Provision Net Revenue

Net Interest Income (“NII”) was generally projected using earning asset and interest-bearing liability projections, earning asset spreads and interest-bearing liability pricing assumptions. NII was calculated for portfolio sub-segments with similar interest / expense characteristics (i.e., weighted average rates by product were used for interest income and interest expense calculations). In addition cost of funds is calculated based on index-based spread models, internal funding guidelines and expert judgment.

Non-interest Income was projected using quantitative models and expert judgment methodologies incorporating key drivers and assumptions around fee income, shortfall income, trading gains/losses, other gains/losses, transfer pricing, and cash management.

Non-interest Expense methodology was driven by internal policies and spending strategy. Management used historical information, internal operating variables and expert judgment to project the sub-components of Noninterest Expense: Salary Expense, Benefits Expense, Stock Based Compensation, Cash Variable Pay, Professional and Outside Services Expense, and Expenses of Premises & Fixed Assets.

<sup>4</sup> Operational Risk losses flow through PPNR (i.e., non-interest expense) and account for the majority of losses under the BHC SA scenario.

## 5.2 Losses and Provisions

### Credit Risk

Management projected quarterly expected loss rates which are applied to balance sheet projections to derive quarterly net charge-offs (“NCOs”) on credit risk-sensitive assets. The NCOs, in turn, drive the calculation of the allowance for loan and lease losses (“ALLL”) and the provision for loan and lease losses.

Projections of credit provisions were derived based on an expected loss (“EL”) concept. The key components of EL were exposure at default (“EAD”), loss given default (LGD) and probability of default (“PD”).

DBTC used a multifactor model to estimate the impact of the stress scenarios on default rates. In this model, the systematic factors corresponded to geographic regions and industries. The primary stress was applied to geographical factors based on changes to gross domestic product (“GDP”). This impacted other systematic factors in the model based on the correlation to the geographic factors.

Model results were reviewed by comparing the (model implied) stress default rates to historically observed default rates under stress conditions and/or the output of a challenger model for certain material portfolios.

The main drivers for changes in stressed LGD varied based on collateral type. For example, the reduction in real estate collateral values was based on the U.S. Housing Price Index and the CRE Price Index.

### Operational Risk

Management projected legal and non-legal related operational risk losses utilizing models, scenario analyses, and expert judgment.

Model-driven operational risk losses were based on output from a Historical Loss Approach model which segmented historical loss data into business lines/event types and projected losses based on applying predefined quantiles to a loss distribution. Results are then benchmarked against a challenger model; derived from the DB Group’s economic capital model.

Legal related losses relied on expert judgment assessment utilizing DBTC’s current litigation watch list as well as scenario analyses.

### Market Risk

Mark to Market losses/gains from trading assets and liabilities are included in NII. These projections utilized a combination of index-based and revaluation pricing approaches.

### 5.3 Changes in Capital Ratios

Capital projections utilize a framework which is based upon exposure identification and data sourcing, risk weight classification, exposure calculation, aggregation, and report line item mapping. Using balances as of 1Q15, capital supply was projected based on anticipated activity over the planning horizon and the resulting balance and PPNR projections under our BHC SA scenario.

RWAs were projected using a rule-based approach based on interpretations of the Basel I and U.S. Basel III capital rules, as applicable. Exposure attributes were used to classify exposures and determine the corresponding risk weights and Credit Conversions Factors (“CCFs”). Once the RWA classification of exposures was determined, the risk weights and CCFs were applied to actual and projected balances for all assets. All measures were calculated utilizing the standardized approach.

### 5.4 Capital Actions

The results reflect the following assumptions regarding planned capital actions consistent with those prescribed by the DFAST rule, as follows;

- Common stock dividends are assumed to be zero;
- Interest and principal payments for other capital instruments are assumed to be paid;
- No repurchases of common stock; and
- No issuance of any new capital instruments.