# Deutsche Bank Trust Corporation & Deutsche Bank Trust Company Americas

# 2015 Annual Stress Test Disclosure

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# 1 Overview and Requirements

Deutsche Bank Trust Corporation (DBTC) is a wholly-owned subsidiary of Deutsche Bank Aktiengesellschaft (DBAG). DBTC is a U.S. Bank Holding Company (BHC) regulated by the Board of Governors of the Federal Reserve System (FRB) and primarily engages in commercial banking activities through its main Federal Deposit Insurance Corporation (FDIC) insured bank subsidiary, Deutsche Bank Trust Company Americas (DBTCA). DBTCA is a licensed New York State-chartered insured depository institution regulated by the New York State Department of Financial Services (NYSDFS) and is also a transfer agent registered with the U.S. Securities and Exchange Commission (SEC).

Through its subsidiaries, DBTC engages in lending, deposit taking and other banking activities, as well as nonbanking financial activities through its nonbank subsidiaries. Business activities conducted at DBTC include asset and wealth management, trust services, cash management, and trade finance. DBTC has four primary Lines of Business (LoB): Global Transaction Banking (GTB), Asset and Wealth Management (AWM), Corporate Banking & Securities (CB&S), and Non-Core Operations Unit (NCOU).

Pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), Section 165(i)(2) and the related regulations of the FRB<sup>1</sup>, U.S. BHCs with \$50 billion or more of total consolidated assets, such as (DBTC), as well as insured depository institutions with \$10 billion or more of total consolidated assets, such as DBTCA, are required to conduct Dodd-Frank Act stress tests (DFAST). The DFAST rules require that the stress test be conducted under a set of various scenarios provided by the FRB (e.g., supervisory baseline, supervisory adverse, and supervisory severely adverse).

The DFAST rules require DBTC and DBTCA to publish a summary of the 2015 DFAST results under the supervisory severely adverse scenario. Accordingly, this report represents DBTC's and DBTCA's 2015 DFAST results under the supervisory severely adverse scenario, which is based on the scenarios and sets of key macro-economic variables provided by the FRB. Our DBTC and DBTCA DFAST were executed in accordance with the Comprehensive Capital Analysis and Review (CCAR) 2015 Summary Instructions and Guidance published by the FRB on October 17, 2014. The projections 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 and/or DBTCA's expected losses, revenues, net income before taxes, or capital ratios.

# 2 Risks and Vulnerabilities

Following the definition of DBTC's risk inventory and assessment of risk materiality, key risk drivers were identified for each identified risk type. Risk drivers are economic conditions or situational events that 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 counterparty, borrower or obligor (collectively referred to as "counterparties") exists.

Risk drivers for Credit Risk include:

<sup>&</sup>lt;sup>1</sup> See, 12 CFR Part 252, Subparts B, E, and F.

- Counterparty default risk related to loans;
- Loss severity; coupled with posted collateral; and,
- Changes in commitment and utilization; and,

#### 2.2 Operational Risk

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

Risk drivers for Operational Risk include:

- Human error (e.g., errors resulting from a manual process and/or lack of training, etc.);
- Lack of supervision and control;
- Violation of regulatory requirements and prescribed practices;
- Client suitability issues; and,
- Failure of technical systems & infrastructure.

#### 2.3 Market Risk

Market risk arises from the uncertainty of changes in market prices and rates, the correlations among them, and their levels of volatility. DBTC and DBTCA had a limited amount of market risk in the Trading Book as trading assets represent less than 1% of total assets. Given the characteristics of the trading assets, risk drivers for Market Risk, which includes increased volatility and sudden market price movements, were considered to have low materiality.

#### 2.4 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 were considered to have low materiality as 91% of DBTC's balance sheet resides in DBTCA and the assets are funded 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 technology. This can affect business results if business owners fail to adjust quickly to changing conditions.

Risk drivers for Business Risk include:

- An economic downturn, which would drive a rise in credit utilization and increased credit losses, and also reduce fee income from declining transaction banking related business volumes (payment services, corporate transactions, trust and security services); and
- A severe rating downgrade, which would result in a liquidity outflow, a rise in short-term borrowing costs, and a decrease in business volumes due to erosion of customer confidence.

#### 2.6 Reputational Risk

Reputational risk is the threat that publicity concerning a transaction, counterparty or business practice will negatively impact the public's trust. A negative impact on the public's trust can have

several dimensions – client, counterparty and employee perception, credibility with regulators and legal bodies, or investor confidence. Potential sources of reputational risk include:

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

# 3 Annual DBTC and DBTCA Stress Test Results

#### 3.1 Capital Ratios

Summary of Minimum Regulatory Capital Ratios

Capital Ratio	Minimum Threshold under Basel I (%)	Minimum Threshold under US Basel III (%)	"Well Capitalized" Threshold under US Basel III (%)
Tier 1 Common Capital Ratio	5.0	N/A	N/A
Common Equity Tier 1 Capital Ratio	N/A	4.5	6.5
Tier 1 Capital Ratio	4.0	6.0	8.0
Total Capital Ratio	8.0	8.0	10.0
Tier 1 Leverage Ratio	4.0	4.0	5.0

#### Figure 3-1: DBTC Capital Results Under the FRB Severely Adverse Scenario

Capital Ratios – DBTC				
Capital Ratios (%) <sup>2</sup>	Beginning - 3Q14 Ending – 4Q16		Projected - 9Qtrs Minimum	
Tier 1 Common Capital Ratio	36.6	36.9	33.0	
Common Equity Tier 1 Capital Ratio	N/A	27.6	25.5	
Tier 1 Capital Ratio	36.6	27.6	25.5	
Total Capital Ratio	37.0	28.0	26.2	
Tier 1 Leverage Ratio	11.9	12.2	11.4	

#### Figure 3-1-1: DBTCA Capital Results Under the FRB Severely Adverse Scenario

Capital Ratios – DBTCA			
Capital Ratios (%) <sup>3</sup>	Beginning - 3Q14	Ending – 4Q16	Projected - 9Qtrs Minimum
Tier 1 Common Capital Ratio	49.5	49.4	43.1
Common Equity Tier 1 Capital Ratio	N/A	37.1	34.4

<sup>2</sup> Tier 1 Common Capital Ratio is calculated under Basel I rules for 3Q14 and throughout the entire projection horizon. Common Equity Tier 1 Capital Ratio, Tier 1 Capital Ratio, Total Capital Ratio and Tier <sup>1</sup> Leverage Ratio are calculated under Basel I rules for 3Q14 and 4Q14 and under U.S. Basel III rules for the remainder of the projection horizon.

<sup>&</sup>lt;sup>3</sup> Tier 1 Common Capital Ratio is calculated under Basel I rules for 3Q14 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 Basel I rules for 3Q14 and 4Q14 and under U.S. Basel III rules for the remainder of the projection horizon.

Capital Ratios – DBTCA				
Capital Ratios (%) <sup>3</sup>	Beginning - 3Q14	Ending – 4Q16	Projected - 9Qtrs Minimum	
Tier 1 Capital Ratio	49.5	37.1	34.4	
Total Capital Ratio	49.7	37.6	35.2	
Tier 1 Leverage Ratio	15.8	15.8	14.9	

## 3.2 PPNR, Other Revenue and Net Income before Taxes

Figure 3-2: DBTC Projected Nine-Quarter Cumulative Pre-Provision Net Revenue (PPNR), Losses, and Net Income Under the FRB Severely Adverse Scenario

Projected PPNR, Losses and Net (Loss)/Income Before Taxes – DBTC			
\$ millions	Cumulative 9-Quarters		
PPNR	45.0		
Other Revenue	0.0		
Less :			
Provision for Loan Losses <sup>4</sup>	336		
Realized Losses/(Gains) on Securities (AFS/HTM)	0.0		
Trading and Counterparty Losses	0.0		
Other Losses/(Gains)	0.0		
Equals			
Net (Loss)/Income Before Taxes	-291.0		

#### 3.3 Cumulative Loan Losses

Figure 3-3: DBTC Projected Nine-Quarter Cumulative Loan Losses by Loan Type Under the FRB Severely Adverse Scenario

Projected Loan Losses – DBTC				
\$ millions	Cumulative 9-Quarters	Portfolio Loss Rates (%)		
Loan Losses	296	1.32		
First Lien Mortgages, Domestic	87	2.51		
Junior Liens and HELOCs, Domestic	0	0.00		
Commercial and Industrial	114	2.52		
Commercial Real Estate, Domestic	0	0.00		
Credit Cards	N/A	N/A		
Other Consumer	0	0.00		
Other Loans	95	0.80		

<sup>4</sup> Trading and counterparty losses are included in PPNR projections.

Losses are rounded to million

#### 3.4 Risk Weighted Assets

Figure 3-4: DBTC Projected Risk Weighted Assets

Actual 3Q2014 and Projected 4Q2016 Risk-Weighted Assets under the Supervisory Severely Adverse Scenario - DFAST			
	Actual 3Q2014	Projected 4Q2016	
\$ millions		General Approach	Standardized Approach
Risk Weighted Assets	19,319	18,620	25,021

# 4 Drivers of DBTC Stress Test Results

#### 4.1 Capital Ratios

As of September 30, 2014, DBTC had Tier 1 common, Tier 1 capital, Total capital, and Tier 1 leverage ratios of 36.6%, 36.6%, 37.0% and 11.9%, respectively. DBTC's capital is mainly composed of common equity which is the highest form of loss absorbing capital (qualifying as common equity tier 1 ("CET1") under U.S. Basel III).

Regulatory Capital ratios are calculated and reported under the current US Basel I regime and under US Basel III capital rules which become effective on January 1, 2015.

Throughout the projection horizon under the FRB Severely Adverse Scenario, DBTC has capital ratios substantially in excess of minimum Tier 1 common, Common Equity Tier 1, Tier 1 capital, Total capital, and Tier 1 leverage ratio requirements of 5%, 4,5%, 6%, 8%, and 4%, respectively.

The main drivers of changes in the firm's regulatory capital ratios over the planning horizon are:

- Decreases in Tier 1 capital, Tier 1 common capital, Common Equity Tier 1, and Total capital, mainly due to cumulative projected severely adverse scenario net losses after tax of \$188mn over the planning horizon; and,
- Overall increased risk weighted assets (RWAs), mainly driven by the transition impact from Basel I to US Basel III, and additionally impacted 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.

#### 4.2 PPNR, Other Revenue and Net Income before Taxes

Under the FRB Severely Adverse scenario, Pre-Provision Net Revenue (PPNR) remains marginally positive but experiences a downtrend over the planning horizon due in part to projected decline in balances and margins, combined with conservative projections of litigation related operational risk loss. Operational Risk losses flow through PPNR (i.e., Noninterest Expense) and account for the majority of losses under the FRB Severely Adverse scenarios.

#### 4.3 Projected Cumulative Loan Losses

DBTC's and DBTCA'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 Estate and Corporate Banking & Securities (CB&S) Commercial Real Estate (CRE). In addition, the entire existing securitization portfolio has been successfully wound down. The CB&S CRE and LSF portfolios have been in run-off mode.

Upon completion of projections DBTC historical losses during the most recent financial crisis were analysed and then compared to projected net charge offs (NCOs). Stressed results were deemed conservative based on the comparison to historical losses and the credit portfolio quality improvements described above.

# 5 Methodology

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

#### 5.1 Net Income including PPNR and Revenue

Net Interest Income (NII) was projected using earning asset and interest-bearing liability balance 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). Additional inputs including prepayment assumptions were sourced from the lines of business while cost of funds are calculated based on index-based spread models (e.g., iBoxx, etc), internal funding guidelines and expert judgment.

Noninterest 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.

Noninterest Expense methodology was driven by internal policies and spending strategy. The business used historical information, internal operating variables and expert judgment input from line of business 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.

#### 5.2 Losses and Provisions

#### Credit Risk

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

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 scenario 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 challenger model for certain portfolios.

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

#### **Operational Risk**

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 DBTC 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 group economic capital model.

Legal related losses relied on expert judgment assessment of DBTC's current Litigation Watchlist as well as scenario analyses.

#### Market Risk

Market risk is the risk of loss in the value of inventory and financial asset and liabilities due to changes in market conditions and/or rates. Mark to Market (MtM) losses/gains from trading assets and liabilities are included in Non-interest Income. These projections utilized a combination of indexbased, sensitivity-based and revaluation pricing approaches. Market risk drivers (i.e. interest rates), which were of a low materiality for the DBTC entity, were explicitly linked to changes in market conditions over the planning horizon.

#### 5.3 Changes in Capital Ratios

Capital projections utilize a framework around exposure identification and data sourcing, risk weight classification, exposure calculation, aggregation, and report line item mapping. Using balances as of 3Q14, capital supply was projected based on anticipated activity over the planning horizon and the resulting balance and PPNR projections under the severely adverse scenario.

RWA was projected using a rule-based approach based on interpretations of the Basel I and US Basel III Standardized rules. 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.

#### **5.4 Capital Actions**

DBTC does not plan any capital actions during the projected horizon. However, DBTCA, the main DBTC subsidiary, will continue to issue a dividend to DBTC subject to earnings, and to specific limits consistent with the FRB's Regulation H, the NYSDFS regulation under New York State Banking Law 112, as well as New York Codes, Rules, and Regulations. (i.e., net income from the past two years plus net income year-to-date, should be sufficient to fully fund the dividend distribution).