Deutsche Bank
DBTCA

Deutsche Bank Trust Company Americas (DBTCA)

2014 Dodd-Frank Act Stress Test Results

Under the Supervisory Severely Adverse Scenario

Passion to Perform

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1 Business Overview

Deutsche Bank Trust Company Americas (**"DBTCA"**), a New York banking corporation, is a wholly-owned subsidiary of Deutsche Bank Trust Corporation (**"DBTC"**), which is a wholly-owned subsidiary of Deutsche Bank Aktiengesellschaft (**"DBAG"** and, together with its subsidiaries, the **"DB Group"**). DBTCA is a licensed New York State-chartered insured depository institution regulated by the New York State Department of Financial Services (**"NYSDFS"**). DBTCA is also a member of the Federal Reserve and is a Federal Deposit Insurance Corporation (**"FDIC"**) insured bank. DBTCA is a transfer agent registered with the U.S. Securities and Exchange Commission (**"SEC"**).

DBTCA offers a wide variety of financial products and engages in the following activities:

- loan origination and other forms of credit;
- accepting deposits;
- commercial banking and financial services, including trust services;
- clearing activities;
- currency transactions;
- fiduciary transactions; and
- custody transactions.

DBTCA provides these services primarily to large corporations, financial institutions, and high net worth individuals.

Under 12 CFR Part 252, a state member bank that is a covered company subsidiary must participate in the Federal Reserve's annual Dodd-Frank Stress Testing (**"DFAST"**) program.

This report presents DBTCA's results for the 2014 Dodd-Frank Act Company-Run Stress Test under the supervisory severely adverse scenario, based on the scenarios and sets of key macro-economic variables provided by the Federal Reserve Board (**"FRB"**). Projections included in the stress test include estimates of DBTCA's results over a nine-quarter planning horizon beginning in the quarter ending December 31, 2013 and continuing through the quarter ending December 31, 2015 under this severely adverse scenario. As such, these estimates are not represented as forecasts of expected results for DBTCA.

2 Risk and Vulnerabilities

DBTCA has processes in place to comprehensively identify and assess risks material to DBTCA's activities. The following risk types represent potential vulnerabilities to highlight for DBTCA:

2.1 Credit Risk

Credit Risk arises from any transaction in which an actual, contingent, or potential claim against a counterparty, borrower or obligor exists. For DFAST, DBTCA considered the following credit risk components:

- Default Risk: The risk that companies or individuals are unable to make the required payments on debt obligations to DBTCA.
- Country Risk: The risk that DBTCA suffers a loss for exposure to any given country, due to a possible deterioration of economic conditions, political and social upheaval, nationalization and expropriation of assets, government repudiation of indebtedness, exchange controls and disruptive currency depreciation or devaluation.

DBTCA's portfolio faces material vulnerabilities which are tied to the following key macro-economic variables:

- Negative Real / Nominal Gross Domestic Product (**"GDP"**) growth and rising unemployment are key risks for a significant portion of the credit portfolio and are closely correlated with the performance of counterparties, the ability of counterparties to repay debt obligations, and value of collateral linked to loans.
- The overall portfolio is also sensitive to other factors which are indicative of an economic downturn, such as the Dow Jones Stock Market Index, Housing Price Index, and Commercial Real Estate (**"CRE"**) Price Index. These macro-economic variables have a significant impact on collateral values of the credit portfolio.

2.2 Operational Risk

Operational risk means the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, and includes legal risk. For DFAST, DBTCA considered vulnerabilities which were driven by litigation costs and other non-legal costs.

- For legal costs, operational risks arise from pending, threatened, or potential significant litigation and regulatory enforcement matters.
- For non-legal costs, operational risks arise from inadequate or failed internal processes, people and systems or from external events.

2.3 Market Risk

Market Risk arises from potential changes in the market value of DBTCA's trading and investing positions. Risk may arise from adverse changes in interest rates, credit spreads, foreign exchange rates, equity prices, commodity prices and other relevant parameters, such as market volatility and market implied default probabilities, depending on portfolio composition, including interest rate risk in the banking book.

For DBTCA, market risk in the trading book is immaterial, as the mark-to-market ("MTM") balance of trading assets and liabilities as of September 30, 2013 was only $0.1bn.

Interest rate risk in the banking book, which influences how net interest margin (**"NIM"**) would perform under different rate environments, is manifested in DBTCA's securities portfolio and in DBTCA's asset / liability re-pricing profile.

3 DFAST Results

The following information provides a summary of the results of the Company's Dodd Frank Act Stress Test.

Table 1: Projected Capital Ratios

			Stressed pro forma ratios	
	Sep 30, 2013	Dec 31, 2015		
in %	Actual	Projected	Nine quarter minimum	Regulatory minimum
Tier 1 common capital	30.3	40.7	36.1	5.0
Common equity tier 1 capital	N/A[1]	35.4	34.4	4.5
Tier 1 risk-based capital	30.3	35.4	34.4	6.0
Total risk-based capital	30.6	36.3	35.3	8.0
Tier 1 leverage	17.3	21.4	17.1	4.0

As of September 30, 2013, DBTCA had tier 1 common, tier 1 capital, total capital, and tier 1 leverage ratios of 30.3%, 30.3%, 30.6% and 17.3%, respectively. DBTCA's capital is composed of common equity which is the highest form of loss absorbing capital (and qualifies as common equity tier 1 (**"CET1"**) under U.S. Basel III). DBTCA does not hold any other form of capital.

Under the severely adverse scenario, DBTCA maintains capital ratios that significantly exceed regulatory capital minimums for all quarters during the nine-quarter planning horizon. The overall increase in DBTCA's capital ratios under stress initially appears counterintuitive; however a further understanding of DBTCA's business profile, stress sensitivities, and strategic plans explains the drivers of these results. Significant drivers of the increases in capital ratios include the execution of one-time business strategies, which improve the tier 1 capital ratio by ~470bps across the planning horizon. Additionally, across the nine quarters there is contraction in the loan portfolio (including unused commitments), which further reduces RWA. From an income perspective, as DBTCA's revenue model is largely fee-driven, cumulative nine-quarter net income remains positive under stress and accretes to capital. DBTCA also projects deposit run-off under the severely adverse scenario. However, the main effect of deposit run-off is to reduce DBTCA's sizeable excess cash position, which has minimal RWA and capital ratio impact but results in an improvement in the leverage ratio. The tier 1 leverage ratio experiences consistent growth over the planning horizon due to declining average assets.

In summary, between October 1, 2013 and December 31, 2015 DBTCA's tier 1 common capital ratio improves under the severely adverse scenario. Similarly, the tier 1 risk-based capital, total risk-based capital, and tier 1 leverage ratios improve. Overall, the impact from a reduction in RWA more than offsets the reduction in capital and results in higher regulatory capital ratios at the end of the planning horizon.

[1] The common equity tier 1 capital ratio is applicable for DBTCA beginning in 2015, as DBTCA transitions to U.S. Basel III.

Table 2: Projected Nine-Quarter Cumulative Pre-Provision Net Revenue, Losses, and Net Income

in $ millions		Dec 31, 2015 Cumulative nine quarter
Pre-provision net revenue[2]		**1,061**
Less		
Provision for loan and lease losses	565	
Realized losses on securities available for sale	3	
Trading and counterparty losses[3]	0	
Other losses	0	
Subtotal of losses	**568**	
Net income before taxes		**493**
Taxes		**244**
Net income		**249**

Pre-Provision Net Revenue ("PPNR")

Cumulative nine-quarter PPNR totals $1.1bn, and generally declines over the planning horizon after reaching a maximum in the quarter ending March 31, 2014. The decline in PPNR across the projection horizon is primarily driven by a reduction in total loans and leases, overall flattening of the Fed Funds Target Rate, and reduced non-interest income over the planning horizon.

- While total loans decline over the period, the composition of loans as a percentage of total assets increases. Additionally, the concentration of higher-yielding commercial and industrial (**"C&I"**) loans increases over the planning horizon. As a result, overall net interest income is lower, though still positive, under the severely adverse scenario due to the drop in economic activity and flattening in key interest rates, in addition to the change in loan portfolio balances.
- The primary components of non-interest income across the projection horizon include revenue from fiduciary and fund management, fees, and commissions. Non-interest income, primarily from transaction banking activities, is directly impacted by the worsening macro-economic environment under the severely adverse scenario. Declining levels of GDP results in reductions to management and trust income. Non-interest expense is relatively consistent across the projection horizon.

[2] Market losses in the banking book are included in PPNR projections.
[3] Trading and counterparty losses are included in PPNR projections.

Loan Losses

Table 3: Projected Nine-Quarter Cumulative Loan Losses by Loan Type [a]

	Dec 31, 2015	
in $ millions	Cumulative nine quarter	Cumulative portfolio loss rate (%)
First lien mortgages, domestic	83	2.5
Junior liens and home equity lines of credit, domestic	3	3.6
Commercial and industrial	201	3.4
Commercial real estate, domestic	46	2.6
Other consumer	4	1.8
All other loans	99	1.0
Projected loan losses	**436**	**2.0**

[a] Credit loss parameters were adjusted as appropriate based on historical analyses of performance, consideration of available benchmarking information, and to account conservatively for the inherent uncertainty in estimation processes

Credit losses are driven by C&I loans, all other loans and leases, first lien mortgages, and CRE loans.

- **C&I loans** account for a majority of credit risk losses due to the materiality of the portfolio, and expected loss rates which are higher than any other loan portfolio category. Drivers of loss rates include GDP declines and rising unemployment which lead to a significant increase in default rates for the leveraged loan portfolio. However, the sensitivity of probability of default (**"PD"**) and loss given default (**"LGD"**) to these macro-economic variables are mitigated by the following:
  - Asset-backed security (**"ABS"**) lending facilities are 100% collateralized by pools of consumer or corporate loans and receivables, with additional credit enhancements to cover potential losses.
  - Low risk counterparties (highly rated counterparties or guaranteed by U.S. Government agencies or private insurers).
  - Ultra High Net Worth Individual (**"HNWI"**) clients with saleable asset collateral.

- **First lien mortgages** account for a significant portion of credit losses due to moderately high expected loss rates. Drivers of loss rates are GDP and a declining House Price Index (**"HPI"**) which lead to lower recoveries. However, positive LGDs are noted even for mortgages with low loan-to-value (**"LTV"**) ratios.

- **Other loans** also account for a significant portion of credit losses. Drivers of loss include U.S. Real GDP Growth and the Dow Jones Total Stock Market Index, which lead to lower recoveries; however, expected loss rates remain lower than peer institutions due to:
  - Low expected loss for the ABS lending facilities that are largely of investment grade quality backed by receivables portfolios.
  - Low expected loss for trade loans due to the type of counterparties (highly rated counterparties or guaranteed by U.S. Government agencies or private insurers).
  - Low expected loss for the margin lending portfolio due to the value of collateral securities, as well as a comprehensive margin call / close out process to reduce loss at default.

— **CRE loans** account for the fourth highest share of credit losses due to moderately high expected loss rates. Loss rates are primarily driven by declines in the CRE Price Index and changes in GDP.

Net Income

Cumulative nine-quarter net income remains positive under stress except in one quarter of the projection horizon due to DBTCA's low-risk loan portfolio and a largely fee-driven revenue model.

4 DFAST Process and Methodology

4.1 Process

DBTCA stress testing processes, including that which is used for DFAST, support the identification and monitoring of current and emerging risks and the ongoing measurement of risks compared to DBTCA's risk appetite and capital positions. Specifically, stress testing is used to provide senior management with information to support DBTCA's decisions regarding risk taking and mitigation and for forward planning purposes. Moreover, DBTCA utilizes stress testing to support the assessment of capital adequacy and capital management.

4.2 Methodology

4.2.1 Business Balance Sheet and Income Statement (PPNR, Net Income) Projections

Business forecasts primarily relied on qualitative assessments and expert judgment when translating the impact of macro-economic variables to make on-balance sheet, off-balance sheet and revenue projections.

4.2.2 Losses

Each risk area relied on both quantitative and qualitative solutions when using macro-economic variables[4].

Credit Risk

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

PDs were derived based on internal ratings. A Markov assumption was used to derive multi-year PDs. DBTCA treated exposures to the U.S. government as "risk free" under the scenario.

DBTCA used a multi factor model to estimate the impact of the stress scenario on default rates. In this model, the systematic factors corresponded to geographic regions and industries. Additionally, an idiosyncratic component was included in the model to reflect counterparty specific risk. The primary stress was applied to geographic factors based on changes to GDP. This impacted other systematic factors in the model based on the correlation to the geographic factors.

[4] The exception being operational risk, which projected losses agnostic of macro-economic variables.

Model results were reviewed by comparing the (model implied) stressed default rates to historically observed default rates under stressed conditions. This comparison took into account the most relevant macro-economic variables for each of the key credit portfolios.

The main drivers for changes in LGD varied based on collateral type. For real estate collateral, the reduction in the collateral values was based on the U.S. HPI and the CRE Price Index. For equity collateral, value declines were estimated based on the projected decline of the Dow Jones Index. For bond and fixed income collateral, the value changes were estimated based on projected treasury yields. The probability of a successful margin call was taken into account where applicable.

Credit loss parameters were adjusted as appropriate based on historical analyses of performance, consideration of available benchmarking information, and to account conservatively for the inherent uncertainty in estimation processes.

Operational Risk

Operational risk loss projections are divided into legal settlement related projections and non-legal settlement related projections. The former is based on estimates from an internally maintained litigation watch list. The latter is projected based on a nine-quarter rolling aggregation of historical losses experienced by DBTCA since 2003. The methodology derives varied results under each stress scenario.

Market Risk

Due to the relative immateriality of DBTCA's trading book, a methodology was developed which employed benchmarks, for each asset class, to project market risk losses in the severely adverse scenario for loans and interest rate swaps over the nine-quarter planning horizon. A haircut was applied to a small position in distressed debt.

4.2.3 Capital Actions

Management included proposed dividends over the planning horizon in the DFAST results, which may be declared subject to Board of Directors and management approvals. These dividends are in accordance with what is permitted under New York State Banking Law 112. The capital base will continue to consist only of common equity. As shown in the stress test results, post-dividend capital ratios continue to be strong throughout all nine quarters.