

**HSBC North America Holdings Inc.**  
2016 Mid-Cycle Company-Run Dodd-Frank Act Stress Test Results

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### TABLE OF CONTENTS

	<b>Page</b>
1. Overview of Mid-Cycle Company-Run Dodd-Frank Act Stress Test.....	1
2. Description of the Bank Holding Company Severely Adverse scenario .....	1
3. Forecasting Methodologies Utilized for Mid-Cycle Company-Run Dodd-Frank Act Stress Testing .....	2
4. Mid-Cycle Company-Run Stress Tests Results – HSBC North America Holdings Inc.....	3

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## 2016 Mid-Cycle Company-Run Dodd-Frank Act Stress Test Results

*This document has been prepared pursuant to the disclosure requirements set out in the regulations issued by the Board of Governors of the Federal Reserve System ('Federal Reserve') under the Dodd-Frank Wall Street Reform and Consumer Protection Act ('Dodd-Frank Act') related to the mid-cycle company-run stress testing exercise.*

*References to 'HSBC' are to HSBC North America Holdings Inc. and its subsidiaries.*

*This document makes certain references that are not historical facts, including statements about HSBC's beliefs and expectations, which are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as 'may', 'will', 'should', 'would', 'could', 'appears', 'believe', 'intends', 'expects', 'estimates', 'targeted', 'plans', 'anticipates', 'goal' and similar expressions are intended to identify forward-looking statements but should not be considered as the only means through which these statements may be made. These matters or statements will relate to our future financial condition, economic forecast, results of operations, plans, objectives, performance or business developments and will involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from that which was expressed or implied by such forward-looking statements. The projections disclosed in this document should not be viewed or interpreted as forecasts of expected outcomes or capital adequacy or of the actual financial condition of HSBC. Rather, these projections are based solely on the hypothetical adverse scenarios and other specific conditions required to be assumed by HSBC for the purpose of Dodd-Frank Act stress testing as well as modeling assumptions necessary to project and assess the impact of the various adverse scenarios on HSBC's capital position. Forward-looking statements speak only as of the date of this document. HSBC makes no commitment to revise or update any forward-looking statements to reflect events or circumstances occurring or existing after the date of any forward-looking statements. Factors that could cause HSBC's actual results to differ materially from those described in forward-looking statements can be found in the Annual Report on Form 10-K for HSBC USA Inc. and HSBC Finance Corporation. Additionally, please refer to the HSBC USA Inc. Annual Report on Form 10-K for a broader description of our capital planning and risk management processes.*

# HSBC North America Holdings Inc.

## 2016 Mid-Cycle Company-Run Dodd-Frank Act Stress Test Results

### 1. Overview of Mid-Cycle Company-Run Dodd-Frank Act Stress Test

Pursuant to the Dodd-Frank Act, the Federal Reserve has issued regulations requiring Bank Holding Companies ('BHCs') with average total consolidated assets of US\$50 billion or more to conduct annual company-run stress tests ('Dodd-Frank Act stress test'). HSBC North America Holdings Inc. ('HSBC North America') is required to conduct a mid-cycle company-run stress test to assess the impact of its internally developed hypothetical macroeconomic baseline, adverse and severely adverse scenarios on its financial condition and capital adequacy over a nine-quarter planning horizon beginning, for the current exercise, in the third quarter of 2016. HSBC North America provides herein the disclosure of the results of its 2016 mid-cycle company-run stress test exercise, under its internally developed severely adverse stress scenario ('severely adverse scenario'), as required to be prepared and submitted to the Federal Reserve by October 5, 2016 under these regulations.

HSBC North America is the holding company for HSBC Holdings plc's operations in the United States. Those operations are primarily conducted through HSBC Bank USA, N.A., HSBC Finance Corporation, a holding company for certain run-off consumer finance businesses, and HSBC Markets (USA) Inc. which is the intermediate holding company of, inter alia, HSBC Securities (USA) Inc., a registered broker-dealer.

HSBC Holdings plc is one of the world's largest banking and financial services organizations. With approximately 4,400 offices in both established and emerging markets, it aims to be where growth is, connecting customers to opportunities, enabling businesses to thrive and economies to prosper, and, ultimately helping people to fulfill their hopes and realize their ambitions.

The results of HSBC North America's mid-cycle company-run Dodd-Frank Act stress test are shown below in section 4.

### 2. Description of the Bank Holding Company Severely Adverse scenario

HSBC North America is required to disclose the results of their Dodd-Frank Act stress tests under an internally developed severely adverse stress scenario. For the 2016 mid-cycle exercise, the firm's severely adverse scenario is characterized by a severe global recession, accompanied by a period of heightened corporate financial stress and negative yields for short-term U.S. treasury securities.

The severely adverse scenario assumes the U.S. economy experiences a significant contraction with U.S. Real GDP falling, peak-to-trough, 5.1 percent and unemployment rate increases to a peak of 10.2 percent in the middle of 2018. Conditions deteriorate in the U.S. real estate markets with house prices and commercial real estate prices exhibiting cumulative declines of 25.0 percent and 32.5 percent, respectively. Equity market volatility remains high, reaching 78.0 percent in the first quarter of 2017, accompanied by a peak-to-trough decline of 54.5 percent in equity prices by the third quarter in 2017.

As a result of the severe market conditions, monetary policy turns more accommodative. Short-term interest rates become negative in the first quarter of 2017 with Fed Funds falling to negative 0.4 percent by the second quarter of 2017. Fed Funds remains at negative 0.4 percent for three consecutive quarters before gradually rising to negative 0.1 percent and 0.2 percent in the first and third quarters of 2018, respectively. The 10-year treasury yield drops to 0.1 percent by the third quarter of 2016 and remains below 0.5 percent for the duration of the forecast. The high-yield debt market sells off and bond markets are tested as BBB corporate bond spreads widen, reaching a peak of 5.6 percent in the fourth quarter of 2016.

### 3. Forecasting Methodologies Utilized for Mid-Cycle Company-Run Dodd-Frank Act Stress Testing

Our stress testing methodologies focus on empirically defining the relationship between macroeconomic variables and business volumes, revenues and losses in order to estimate outcomes that may result from a specific stress scenario. We use a series of models and estimation methodologies, coupled with management judgment and overlays to modeled results to take account of HSBC North America's specific risk profile, to produce a comprehensive estimate of future business performance. Additional macroeconomic variables are projected to facilitate the forecasting of certain risk- and portfolio-specific factors. Stress testing methodologies are subject to considerable uncertainties and modeling limitations including uncertainty about the extent to which historical relationships between macroeconomic factors and business outcomes will continue to be relevant in a severely stressed economic environment. We regularly consider these uncertainties and the limitations of our estimates when evaluating stress test results. The methodologies apply accounting practices consistent with HSBC's significant accounting policies, generally accepted accounting principles (GAAP) in the U.S., and the regulatory capital rules in place at the time of the stress test.

The forecast methodologies employed by HSBC to quantify the impact of the hypothetical assumptions over the stress testing forecast period, include, but are not limited to, the following areas presented below.

#### **Pre-Provision Net Revenue**

HSBC's revenue forecast, under the BHC severely adverse scenario, reflects a detailed process in which business segment projections are developed over the nine-quarter capital planning horizon. These forecasts incorporate the impact on net interest income, as well as non-interest income and non-interest expense, of the hypothetical macroeconomic and market environment prescribed under the scenario. The scenario revenue forecast also reflects the level of resources projected to be employed by each business segment over the capital planning horizon, as well as HSBC's expectations of customer behavior and competitive dynamics.

#### **Balance Sheet**

The forecast balance sheet under each scenario reflects projected changes over the planning horizon based on the macroeconomic environment of each scenario, business growth and planned activity, changes in carrying values resulting from mark-to-market and other balance sheet impacts, including draws on unfunded commitments and the roll-off of lending and net borrowing or funding.

#### **Losses**

Stressed losses from market risk, wholesale credit risk, retail credit risk and operational risk exposures across HSBC under the firm's severely adverse scenario are measured utilizing the following methodologies:

*Market Risk:* Market risks included all mark-to-market positions and loans carried at fair value (the latter primarily in HSBC Finance Corporation). The potential impact of market movements on trading positions and mark-to-market losses for fair-value assets not held in the trading book, including loans held for sale or held for investment under the fair-value option, projected in the scenario are incorporated, as appropriate.

Our approach to projecting market risk trading losses in a stress environment is based on implied market movements under a given macroeconomic scenario and estimating their impact on positions with open market risk exposure. The trading stress test results are computed based on revaluation of the portfolio under the stressed market risk factors.

*Credit Risk:* Loans to our customers are a significant component of HSBC's total assets, and their related credit risk is among the most significant risks we manage. When estimating loan losses, probability of default, exposure at default, and loss severity, assumptions are incorporated into the loan loss estimates. Loss estimates take into consideration the

# HSBC North America Holdings Inc.

## 2016 Mid-Cycle Company-Run Dodd-Frank Act Stress Test Results

unique characteristics of our wholesale and retail loan portfolios and reflect the run-off nature of the retail loan portfolio in HSBC Finance Corporation.

A variety of models are used to project losses on loans. These models take into consideration many factors, including historical performance, the forecast economic scenarios, current credit characteristics and credit quality ratings. Where appropriate, we incorporate country-specific, state and local economic variables to reflect geographical concentrations within a given loan portfolio.

Wholesale loss estimates are made based on asset types, specifically commercial and industrial and commercial real estate portfolios. Within each of these, the portfolio is segmented further to capture key portfolio risk characteristics, such as particular industry concentrations that may react differently under various stress scenarios. Rigorous statistical techniques are used to determine and estimate relationships between probability of default and macroeconomic factors. Probability of default projections are sensitive to and consistent with scenario conditions, resulting in loss rates that are indicative of underlying economic fundamentals. Loss severity is projected using similar techniques.

Losses on retail loans are projected using statistical models that use economic attributes (such as unemployment rate and housing price levels) and portfolio credit characteristics within an expected loss framework. Reserves are forecasted using a coverage ratio based on expected losses, where the losses are stressed quarterly throughout the forecast horizon. Estimated troubled debt restructuring volumes and life of loan reserves, most significant to loans made by HSBC Finance Corporation, are stressed within this framework.

*Operational Risk:* Operational risk loss estimates are calculated using historical performance, frequency correlation models, scenario analysis and legal matter analysis. Scenario analysis and legal matter analysis contribute materially to estimate of stressed losses. Scenario analysis is performed through scenario workshops with a range of relevant stakeholders and subject-matter experts to estimate HNAH's idiosyncratic risks as identified through HSBC's internal risk identification process. The estimates are based on expert judgment and are supported by factual evidence. Legal matter analysis is performed by the legal team to estimate stressed unfavorable outcomes, including associated legal costs, for matters disclosed in the financial statements.

### **Capital Position**

The capital position of HSBC North America is forecast using the projected revenue and loss estimates described above and risk-weighted assets forecast under the firm's severely adverse scenario. Common Equity Tier 1, Tier 1, Total Capital and Tier 1 leverage ratios are then projected over the nine-quarter stress testing forecast period.

The actual capital ratios as of Q2 2016 and all projected capital ratios are calculated in accordance with the transition provisions set out in the Federal Reserve's revised capital framework implementing Basel III, and using Basel III standardized risk-weighted assets.

### **4. Mid-Cycle Company-Run Stress Tests Results – HSBC North America Holdings Inc.**

The results of our 2016 mid-cycle company-run Dodd-Frank Act stress test are shown in the tables below. For HSBC North America, the forecasts include prescribed assumptions, as required under the Dodd-Frank Act stress testing requirements, in respect of the capital actions projected over the planning horizon. These are: (i) no issuances or redemptions of regulatory capital instruments, (ii) no payment of common stock dividends based on previous year actual experience, and (iii) payments on any other regulatory capital instruments are equal to the stated dividend, interest or principal due on such instrument in any given quarter. The estimates should not be seen as forecasts of expected outcomes or capital adequacy or of the actual financial condition of HSBC North America. The forecasts for HSBC North America may not necessarily be in alignment with those of other institutions or the Federal Reserve because of differences in modeling techniques, methodologies and assumptions made.

# HSBC North America Holdings Inc.

## 2016 Mid-Cycle Company-Run Dodd-Frank Act Stress Test Results

The forecasted change in regulatory capital ratios under the firm's severely adverse scenario is attributable to both a pre-provision net loss driven by significant operational risk losses and higher loan loss provisions. Despite the projected decline in net income, we forecast regulatory capital ratios to be above all regulatory minimum ratios, as shown in Table 1.

The following tables show projected regulatory capital ratios, projected losses, revenues and net income before taxes and projected loan losses by loan type for HSBC North America under the firm's severely adverse scenario.

**Table 1: HSBC North America projected minimum regulatory capital ratios, Q2 2016 to Q3 2018, and the required regulatory minimum capital ratios for the 2016 mid-cycle company-run Dodd-Frank Act stress test**

	Required regulatory minimum capital ratios	Actual Q2 2016	Stressed capital ratios <sup>1,2</sup>	
			Q3 2018	Minimum <sup>3</sup>
Common Equity Tier 1 capital ratio	4.5%	16.6%	10.6%	10.6%
Tier 1 risk-based capital ratio	6.0%	18.5%	13.1%	12.7%
Total risk-based capital ratio	8.0%	23.6%	17.9%	17.6%
Tier 1 leverage ratio	4.0%	9.6%	7.3%	7.3%

1 All projected capital ratios are calculated in accordance with the transition provisions set out in the Federal Reserve's revised capital framework implementing Basel III and using Basel III standardized risk-weighted assets from January 2016.

2 The capital ratios are calculated using capital action assumptions prescribed under the Dodd-Frank Act stress testing requirement.

3 The minimum capital ratios represent the lowest projected ratio in the period Q3 2016 to Q3 2018 which do not necessarily occur in the same quarter.

**Table 2: HSBC North America projected losses, revenues and net loss before taxes for the nine quarters**

	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue/(loss) <sup>2</sup>	(2.98)	1.1%
<i>less</i>		
Provisions	5.39	1.9%
Realized losses/gains on securities (AFS/HTM)	0.04	0.0%
Trading and Counterparty losses <sup>3</sup>	0.00	0.0%
Other losses/gains	(1.03)	0.4%
<i>equals</i>		
Net loss before taxes	(7.38)	2.6%

1 Average assets is the nine-quarter average of total assets.

2 Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, unfavorable movements in the lower of amortized cost or fair value adjustments on the fair value of real estate receivables held for sale and other real estate owned ('OREO') costs.

3 Trading and counterparty losses include mark-to-market and credit valuation adjustments ('CVA') and losses arising from derivatives, securities lending and repurchase agreement activities.

# HSBC North America Holdings Inc.

## 2016 Mid-Cycle Company-Run Dodd-Frank Act Stress Test Results

**Table 3: HSBC North America projected loan losses, by loan type for the nine quarters**

	Billions of dollars	Portfolio loss rates (%) <sup>1</sup>
Loan Losses	3.91	4.4%
First-lien mortgages, domestic	0.58	2.3%
Junior liens and HELOCs, domestic	0.62	22.3%
Commercial and industrial <sup>2</sup>	1.72	4.6%
Commercial real estate, domestic	0.57	6.1%
Credit cards	0.15	21.5%
Other consumer <sup>3</sup>	0.02	4.0%
Other loans <sup>4</sup>	0.25	2.0%

1 Cumulative loss rates calculated over the nine-quarter planning horizon as a percentage of average loan balances (excluding loans held for sale and loans held for investment under the fair-value option).

2 Commercial and industrial loans include small and medium enterprise loans and corporate cards.

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.