2015 Comprehensive Capital Analysis and Review and Annual Company-Run Dodd-Frank Act Stress Test Results

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# 2015 CCAR and Annual Company-Run Dodd-Frank Act Stress Test Results

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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') and the Office of the Comptroller of the Currency ('OCC') under the Dodd-Frank Wall Street Reform and Consumer Protection Act ('Dodd-Frank Act') related to the annual 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 either HSBC or HSBC Bank USA, N.A. 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.

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### 1. Overview of the Comprehensive Capital Analysis and Review and Dodd-Frank Act Stress Tests

Pursuant to the Dodd-Frank Act, the Federal Reserve and the OCC have issued regulations requiring Bank Holding Companies ('BHCs') and national banks, respectively, 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') and HSBC Bank USA, N.A. ('HSBC Bank USA') are required to participate in the Dodd-Frank Act stress tests and provide herein the disclosure of their 2015 stress test exercise, as required under these regulations. In addition, BHCs, including HSBC North America, are required to conduct mid-cycle company-run stress tests. The Federal Reserve is also required to undertake an annual supervisory stress test of BHCs, as defined above.

The company-run stress test is a forward looking exercise to assess the impact of hypothetical macroeconomic baseline, adverse and severely adverse scenarios provided by the Federal Reserve and the OCC on the financial condition and capital adequacy of a BHC or bank over a nine quarter planning horizon, beginning, for the current exercise, in the fourth quarter of 2014. For HSBC North America, the Dodd-Frank Act stress test was conducted in conjunction with the Federal Reserve's annual Comprehensive Capital Analysis and Review ('CCAR'). Under CCAR, the Federal Reserve also undertakes an assessment of a BHC's capital adequacy process and HSBC North America submitted its Capital Plan in compliance with the CCAR requirements 1. BHCs, such as HSBC North America, are required to receive a 'non objection' from the Federal Reserve before executing a capital action, other than those capital distributions with respect to which the Federal Reserve has indicated in writing its non-objection.

HSBC North America and HSBC Bank USA are required to disclose the results of their Dodd-Frank Act stress tests under the Federal Reserve and OCC's severely adverse stress scenario<sup>2</sup> (the 'supervisory severely adverse scenario'). For the 2015 annual stress testing cycle, the supervisory severely adverse scenario is characterized by a substantial weakening in global economic activity, accompanied by large reductions in asset prices.

In the scenario, the U.S. corporate sector experiences increases in financial distress that are even larger than would be expected in a severe recession, together with a widening in corporate bond spreads and a decline in equity prices. The Dow Jones equity index is assumed to decline by as much as 58 percent during the projection period. In the U.S., the scenario features a deep and prolonged recession in which the unemployment rate increases four percentage points from current levels, peaking at 10 percent in the middle of 2016. In terms of both the peak level reached by the unemployment rate and its total increase, this shock is of a similar magnitude to that experienced during the most severe U.S. contractions during the past half-century. By the end of 2015, the level of real GDP is approximately 4½ percent lower than its level in the third quarter of 2014; it begins to recover thereafter. Despite this decline in real activity, higher oil prices cause the annualized rate of change in the CPI to reach 4¼ percent in the near term, before subsequently falling back. In response to this economic contraction—and despite the higher near-term path of CPI inflation—Treasury yields of all maturities are significantly lower throughout the scenario than in the baseline. Short-term interest rates remain near zero through 2017; long-term Treasury yields drop to 1 percent in the fourth quarter of 2014 and then edge up slowly over the remainder of the scenario period. Mortgage interest rates increase over the course of 2015,

<sup>&</sup>lt;sup>1</sup> See Board of Governors of the Federal Reserve System, 'Comprehensive Capital Analysis and Review 2015 Summary Instructions and Guidance', October 2014, for the CCAR and Dodd-Frank Act stress test instructions.

<sup>&</sup>lt;sup>2</sup> For the supervisory severely adverse scenario description and macroeconomic variables, see Board of Governors of the Federal Reserve System, '2015 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule', October 23, 2014, available at http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20141023a1.pdf.

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driven by widening in spreads, and housing prices, as reflected by the Core Logic HPI index, decline year-on-year by 15 percent during the middle of 2016.

It is important to note that the scenarios provided by the Federal Reserve and OCC are not forecasts, but rather hypothetical scenarios to be used to assess the strength and resilience of institutions in baseline and stressed economic and financial market environments. In addition, the stress test results summarized in this Report are not comparable to the results of other stress tests performed by HSBC North America and HSBC Bank USA due to a number of factors including the uniqueness of the scenario assumptions used to prepare each stress test, differences in market conditions and differences in the companies' financial positions and exposures at the time each stress test is performed. Differences also arise due to the evolving risk quantification methodologies and regulatory capital frameworks that may be applicable to each stress test.

Six BHCs with large trading operations were required by the Federal Reserve to include a global market shock as part of their supervisory adverse and severely adverse scenarios and to conduct a stress test of their trading books, private equity positions and counterparty exposures. In addition, eight BHCs with substantial trading or custodial operations were required to incorporate a counterparty default scenario component into their supervisory adverse and severely adverse stress scenarios. HSBC North America was not required to perform these exercises.

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, 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 more than 6,200 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 fulfil their hopes and realize their ambitions.

The results of HSBC North America and HSBC Bank USA's annual company-run Dodd-Frank Act stress test are shown below in section 3.

#### 2. Forecasting Methodologies Utilized for 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 adverse 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. These are projected consistent with the trend of variables provided by the FRB in each scenario. 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.

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The forecast methodologies employed by HSBC to quantify the impact of the hypothetical assumptions over the stress testing forecast period, included, but were not limited to, the following:

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

HSBC's revenue forecast, under the supervisory severely adverse scenario, reflected a detailed process in which business segment projections were developed over the nine-quarter capital planning horizon. These forecasts incorporated the impact on modeled 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 reflected 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, reflected projected changes over the planning horizon based on assumptions of the macroeconomic environment in the scenarios, 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

Stress losses from market risk, wholesale and retail credit risk and operational risk exposures across HSBC, under the supervisory severely adverse scenario, were 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 were incorporated, as appropriate.

Our approach to projecting market risk trading losses in a stress environment was based upon specifying macroeconomic shifts and observing and incorporating their impacts into HSBC's forecast performance. The market risk trading stress results were computed using a full revaluation methodology in which the portfolio was fully re-priced under the stress risk factor assumptions.

*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 unique characteristics of our wholesale and retail loan portfolios and reflect the runoff nature of the retail loan portfolio in HSBC Finance Corporation.

A variety of models were 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 incorporated country-specific, state and local economic variables to reflect geographical concentrations within a given loan portfolio.

Wholesale loss estimates were made based on asset types, specifically commercial & industrial and commercial real estate portfolios. Within each of these, the portfolio was segmented further to capture key portfolio risk

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characteristics, such as particular industry concentrations, that may react differently under various stress scenarios. Rigorous statistical techniques were used to determine and estimate relationships between probability of default and macro-economic 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 was projected using similar techniques.

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

Operational Risk: Operational risk loss estimates were calculated through multiple approaches, including trending of historical performance and scenario analysis to project operational losses. Scenario analysis is used as the primary methodology to estimate stressed losses. This analysis is performed through scenario workshops with a range of relevant stakeholders and subject-matter experts to identify and estimate HNAH's most important idiosyncratic risks. The estimates are based on a range of expert judgments, and are supported by factual evidence. Scenario analysis results are used across the most material Basel event types for HNAH's business profile. The forecast operational risk losses also include the estimation of litigation costs, as set out in the CCAR requirements, under the supervisory severely adverse scenario.

### **Capital Position**

The capital positions of HSBC North America and HSBC Bank USA were forecast using the projected revenue and loss estimates described above and risk-weighted assets forecast under the supervisory severely adverse scenario. Tier 1 common, common equity tier 1, tier 1, total capital and tier 1 leverage ratios were then projected over the nine-quarter stress testing forecast period.

HSBC North America was an advanced approach BHC in 'parallel run' until December 2014 when it received approval from the Federal Reserve to become a standardized approach BHC in advance of becoming the Intermediate Holding Company of the HSBC Group under the Foreign Banking Organization rules on July 1, 2016. The actual capital ratios as of Q3 2014 and all projected capital ratios, other than the tier 1 common ratio, were 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 2015. In accordance with the Federal Reserve's regulations, the tier 1 common ratio was calculated under the Basel I-based capital rules.

### 3. Company-Run Stress Tests – HSBC North America Holdings Inc.

The results of our 2015 annual Dodd-Frank Act stress test are shown 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: (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 the quarter. The estimates should not be seen as forecasts of expected outcomes or capital adequacy or of the actual financial condition of either HSBC North America or HSBC

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Bank USA. 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.

The changes in forecast regulatory capital ratios are driven by a pre-provision net loss, due to a forecast which includes a decrease in net interest income, an increase in operational risk losses, and an increase in loan losses. Despite the projected decline in net income, we forecast a tier 1 common ratio well above the 5% benchmark minimum ratio established under the Federal Reserve's capital plan rule. As shown in Table 1, the other minimum regulatory capital ratios are forecast to be above all regulatory minimum ratios.

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 supervisory severely adverse scenario.

<u>Table 1:</u> HSBC North America projected minimum regulatory capital ratios and tier 1 common ratio, Q4 2014 to Q4 2016, and the required regulatory minimum capital ratios for CCAR 2015

Actual Q3 2014 and projected capital	l ratios through Q4 2016 unde Required regulatory minimun capital ratios		Actual	verely adverse scenario  Stressed capital ratios <sup>2</sup>	
	2014	2015-2016 <sup>6</sup>	Q3 2014 <sup>1</sup>	Q4 2016	Minimum <sup>3,4</sup>
Tier 1 common ratio <sup>5</sup>	5.0%	5.0%	14.0%	7.3%	7.3%
Common equity tier 1 capital ratio	4.0%	4.5%	16.3%	8.6%	8.6%
Tier 1 risk-based capital ratio	5.5%	6.0%	17.3%	9.8%	9.8%
Total risk-based capital ratio	8.0%	8.0%	26.1%	14.7%	14.6%
Tier 1 leverage ratio	4.0%	4.0%	9.4%	6.0%	6.0%

- 1 HSBC North America was an advanced approach BHC, in 'parallel run' until December 2014 when it received approval from the Federal Reserve to become a standardized approach BHC in advance of becoming, from July 1, 2016, the Intermediate Holding Company of the HSBC Group under the Foreign Banking Organization rules. The actual capital ratios as of Q3 2014 were therefore calculated in accordance with the transition provisions set out in the Federal Reserve's revised capital framework implementing Basel III.
- 2 All projected capital ratios, other than the tier 1 common ratio, 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 2015.
- 3 The capital ratios are calculated using capital action assumptions prescribed under the Dodd-Frank Act stress testing requirements.
- 4 The minimum capital ratios represent the lowest projected ratio in the period Q4 2014 to Q4 2016 which do not necessarily occur in the same quarter.
- 5 The tier 1 common ratio is calculated under the definitions of tier 1 capital and total risk-weighted assets under Basel I-based capital rules.
- From 2016, a capital conservation buffer of 0.625 percent will be added to the minimum ratios above (excluding the tier 1 common and tier 1 leverage ratios).

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

Projected losses, revenues, and net loss through Q4 2016					
	Billions of dollars	Percent of average assets <sup>1</sup>			
Pre-provision net loss <sup>2</sup>	(2.86)	(1.0%)			
less					
Provisions	8.97				
Realized losses/gains on securities (AFS/HTM)	0.10				
Trading and Counterparty losses <sup>3</sup>	-				
Other losses/gains <sup>4</sup>	0.58				
equals					
Net loss before taxes	(12.51)	(4.3%)			

- 1 Average assets is the nine-quarter average of total assets.
- 2 Pre-provision net loss 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 the counterparty default scenario component applied to derivatives, securities lending and repurchase agreement activities. HSBC North America was not subject to the global market shock component or counterparty default scenario component of the stress test.
- 4 Other losses/gains includes projected change in fair value of loans held for sale and loans held for investment measured under the fair-value option, and goodwill impairment losses.

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

Projected loan losses, by type of loans, Q4 2014 - Q4 2016					
	Billions of dollars	Portfolio loss rates (%) <sup>1</sup>			
Loan Losses					
First-lien mortgages, domestic	2.93	8.6%			
Junior liens and HELOCs, domestic	0.99	25.6%			
Commercial and industrial <sup>2</sup>	1.81	5.5%			
Commercial real estate, domestic	0.62	6.5%			
Credit cards	0.13	18.5%			
Other consumer <sup>3</sup>	0.02	4.1%			
Other loans <sup>4</sup>	0.33	2.6%			

<sup>1</sup> 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).

<sup>2</sup> Commercial and industrial loans include small and medium enterprise loans and corporate cards.

<sup>3</sup> Other consumer loans include student loans and automobile loans.

<sup>4</sup> Other loans include international real estate loans.

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### 4. Company-Run Stress Tests – HSBC Bank USA, N.A.

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 Bank USA under the supervisory severely adverse scenario.

**Table 4:** HSBC Bank USA projected minimum regulatory capital ratios and tier 1 common ratio, Q4 2014 to Q4 2016, and the required regulatory minimum capital ratios for CCAR 2015

Actual Q3 2014 and projected capital	l ratios through Q4 2016 under the Required regulatory minimum capital ratios		Actual	Stressed capital ratios <sup>1</sup>	
	2014	2015-2016 <sup>4</sup>	Q3 2014 <sup>1</sup>	Q4 2016	Minimum <sup>3</sup>
Tier 1 common ratio <sup>2</sup>	5.0%	5.0%	13.4%	10.6%	9.9%
Common equity tier 1 capital ratio	4.0%	4.5%	13.6%	10.6%	10.1%
Tier 1 risk-based capital ratio	5.5%	6.0%	13.6%	12.1%	11.5%
Total risk-based capital ratio	8.0%	8.0%	18.0%	15.2%	14.9%
Tier 1 leverage ratio	4.0%	4.0%	10.1%	10.3%	9.7%

- 1 All projected capital ratios, other than the tier 1 common ratio, 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 2015.
- 2 The tier 1 common ratio is calculated under the definitions of tier 1 capital and total risk-weighted assets under Basel I-based capital rules.
- 3 The minimum capital ratios represent the lowest projected ratio in the period Q4 2014 to Q4 2016 which do not necessarily occur in the same quarter.
- 4 From 2016, a capital conservation buffer of 0.625 percent will be added to the minimum ratios above (excluding the tier 1 common and tier 1 leverage ratios).

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**Table 5:** HSBC Bank USA projected losses, revenues and net loss before taxes for the nine quarters

Projected losses, revenues, and net loss through Q4 2016					
	Billions of dollars	Percent of average assets <sup>1</sup>			
Pre-provision net loss <sup>2</sup>	(0.43)	(0.2%)			
less					
Provisions	4.00				
Realized losses/gains on securities (AFS/HTM)	0.10				
Trading and Counterparty losses <sup>3</sup>	-				
Other losses/gains <sup>4</sup>	0.63				
equals					
Net loss before taxes	(5.16)	(3.0%)			

- 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, and OREO costs.
- Trading and counterparty losses include mark-to-market and credit valuation adjustments ('CVA') and losses arising from the counterparty default scenario component applied to derivatives, securities lending and repurchase agreement activities. HSBC Bank USA was not subject to the global market shock component or counterparty default scenario component of the stress test.
- 4 Other losses/gains includes projected change in fair value of loans held for sale and loans held for investment measured under the fair-value option, and goodwill impairment losses.

**Table 6:** HSBC Bank USA projected loan losses, by loan type for the nine quarters

Projected loan losses, by type of loans, Q4 2014 - Q4 2016					
	Billions of dollars	Portfolio loss rates (%) <sup>1</sup>			
Loan Losses					
First-lien mortgages, domestic	0.23	1.4%			
Junior liens and HELOCs, domestic	0.15	9.6%			
Commercial and industrial <sup>2</sup>	1.81	5.5%			
Commercial real estate, domestic	0.62	6.5%			
Credit cards	0.13	18.5%			
Other consumer <sup>3</sup>	0.02	4.2%			
Other loans <sup>4</sup>	0.33	2.9%			

<sup>1</sup> 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).

<sup>2</sup> Commercial and industrial loans include small and medium enterprise loans and corporate cards.

<sup>3</sup> Other consumer loans include student loans and automobile loans.

<sup>4</sup> Other loans include international real estate loans.

