

**HSBC North America Holdings Inc.**  
2018 Comprehensive Capital Analysis and Review and  
Annual Company-Run Dodd-Frank Act Stress Test Results

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# HSBC North America Holdings Inc.

## 2018 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. 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. 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.

### 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 2018 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 first quarter of 2018. 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').<sup>1</sup> 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 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 3,900 offices in both established and emerging markets, it aims to be where the 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 and HSBC Bank USA's annual company-run Dodd-Frank Act stress test are shown below in Sections 4 and 5, respectively.

### 2. Description of the Supervisory Severely Adverse Scenario

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 (the 'supervisory severely adverse scenario').<sup>2</sup> For the 2018 annual stress testing exercise, the supervisory severely adverse scenario is characterized by a severe global recession that is accompanied by a global aversion to long-term fixed-income assets. As a result, long-term rates do not fall and yield curves steepen. In turn, these developments lead to a broad-based and deep correction in asset prices—including in the corporate bond and real estate markets.

In this scenario, the level of U.S. real GDP begins to decline in the first quarter of 2018 and reaches a trough in the third quarter of 2019 that is 7½ percent below the pre-recession peak. The unemployment rate increases almost 6

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<sup>1</sup> See Board of Governors of the Federal Reserve System, 'Comprehensive Capital Analysis and Review 2018 Summary Instructions and Guidance', February 2018, for the CCAR and Dodd-Frank Act stress test instructions.

<sup>2</sup> For the supervisory severely adverse scenario description and macroeconomic variables, see Board of Governors of the Federal Reserve System, '2018 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule', February 2018, available at <https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20180201a1.pdf>

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percentage points, to 10 percent, by the third quarter of 2019. Headline consumer price inflation falls below 1 percent at an annual rate in the second quarter of 2018 and rises to about 1½ percent at an annual rate by the end of the scenario.

As a result of the severe decline in real activity, short-term Treasury rates fall and remain near zero through the end of the scenario period. However, investor aversion to long-term fixed-income assets keeps 10-year Treasury yields unchanged through the scenario period. Financial conditions in corporate and real estate lending markets are stressed severely. The spread between yields on investment-grade corporate bonds and yields on long-term Treasury securities widens to 5¾ percentage points by the start of 2019, while the spread between mortgage rates and 10-year Treasury yields widens to about 3½ percentage points over the same time period.

Asset prices drop sharply in this scenario. Equity prices fall 65 percent by early 2019, accompanied by a surge in equity market volatility. The VIX moves above 60 percent in the first half of 2018. Real estate prices also experience large declines, with house prices and commercial real estate prices falling 30 percent and 40 percent, respectively, by the third quarter of 2019.

The international component of this scenario features a sharp global downturn, with severe recessions in the euro area, the United Kingdom, and Japan and a shallow and brief recession in developing Asia. As a result of the sharp contraction in economic activity, all foreign economies included in the scenario experience a decline in consumer prices, with Japan experiencing a more significant deflation that persists through the end of the scenario period. The U.S. dollar appreciates against the euro, the pound sterling, and the currencies of developing Asia but depreciates modestly against the yen because of flight-to-safety capital flows.

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. Eight BHCs with substantial trading or custodial operations were also 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 for this 2018 exercise.

Beginning in CCAR 2019, an additional six firms with significant trading activities, including HSBC North America, will be subject to the global market shock component in their adverse and severely adverse scenarios. For the 2018 CCAR exercise, these six firms are subject to a prescribed market risk component in the supervisory adverse and severely adverse scenarios as described in next section.

### 3. 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 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.

#### **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 movements and other balance sheet impacts, including draws on unfunded commitments and the roll-off of lending and net borrowing or funding.

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

HSBC's net interest income, non-interest income, and non-interest expense forecasts under the supervisory severely adverse scenario reflect a detailed process in which business segment projections are developed over the nine-quarter capital planning horizon. The revenue forecast is aligned with the balance sheet projections by each business segment over the capital planning horizon, as well as HSBC's expectations of customer behavior and competitive dynamics.

#### **Losses**

Stress losses from wholesale and retail credit, market risk and operational risk are calculated using the following methodologies:

*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.

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 segmented 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

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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 or loan-level credit characteristics within an expected loss framework.

*Market risk and counterparty credit risk:* Market risk includes all trading mark-to-market positions and loans carried at fair value. 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) are incorporated as appropriate. Counterparty credit risk is the risk that a counterparty to a transaction could default or deteriorate in creditworthiness before the final settlement of a transaction's cash flows.

As noted above, for the 2018 CCAR submission, HSBC North America was required by the Federal Reserve to include an additional scenario component in the adverse and severely adverse supervisory scenarios. Specifically, HSBC North America was required to reflect trading and counterparty losses in the supervisory scenarios using loss rates prescribed by the FRB. These losses were taken in the first quarter of the planning horizon and were treated as an add-on component to the nine quarter loss projections.

*Operational Risk:* Operational risk results from inadequate or failed internal processes, people and systems or from external events, including legal risk. Operational risk is relevant to every aspect of the business and covers a wide spectrum of risks. We use both quantitative approaches and scenario analysis, including an assessment of material legal matters, to estimate operational losses.

Quantitative approaches leverage statistical models, such as regression analysis, to forecast losses based on the firm's internal loss history. Scenario analysis uses expert judgment and internal and external reference data to produce a forward-looking loss estimate for operational risk events identified through our internal risk identification process. Legal matters disclosed in the financial statements are assessed by internal counsel.

### **Capital Position**

The projected capital levels and capital ratios for HSBC North America and HSBC Bank USA under the supervisory severely adverse scenario are forecasted using the estimates of revenues, losses, risk-weighted assets, and average assets. Common equity tier 1, tier 1, total capital, tier 1 leverage, and supplementary leverage ratios are then projected over the nine-quarter stress testing forecast period.

The actual capital ratios as of Q4 2017 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.

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

The results of our 2018 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. The initial quarter of the planning horizon reflects actual capital actions HSBC North America has taken. For the remaining quarters of the planning horizon, the following assumptions are included: (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.

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

**Table 1: HSBC North America projected minimum regulatory capital ratios, Q1 2018 to Q1 2020, and the required regulatory minimum capital ratios for CCAR 2018**

|                                    | Required regulatory minimum capital ratios | Actual Q4 2017 | Stressed capital ratios <sup>1,2</sup> |                      |
|------------------------------------|--|----------------|--|----------------------|
|                                    |  |                | Q1 2020                                | Minimum <sup>3</sup> |
| Common Equity Tier 1 capital ratio | 4.5%                                       | 15.5%          | 7.6%                                   | 7.6%                 |
| Tier 1 risk-based capital ratio    | 6.0%                                       | 18.3%          | 10.5%                                  | 10.5%                |
| Total risk-based capital ratio     | 8.0%                                       | 22.8%          | 15.4%                                  | 15.4%                |
| Tier 1 leverage ratio              | 4.0%                                       | 8.9%           | 5.4%                                   | 5.4%                 |
| Supplementary leverage ratio       | 3.0%                                       | n/a            | 4.2%                                   | 4.2%                 |

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 rules.

3 The minimum capital ratios represent the lowest projected ratio in the period Q1 2018 to Q1 2020, which do not necessarily occur in the same quarter.



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**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>   | (2.66)              | 1.0%                                   |
| <i>less</i>                                     |                     |  |
| Provisions                                      | 3.81                | 1.5%                                   |
| Realized losses/(gains) on securities (AFS/HTM) | 0.03                | 0.0%                                   |
| Trading and counterparty losses <sup>3</sup>    | 1.19                | 0.5%                                   |
| Other losses/(gains)                            | 0.00                | 0.0%                                   |
| <i>equals</i>                                   |                     |  |
| <b>Net loss before taxes</b>                    | <b>(7.70)</b>       | <b>2.9%</b>                            |

1 Average assets are calculated as 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 HSBC North America is subject to interim market risk components in the supervisory adverse and severely adverse scenarios to assess the potential losses and capital impact in connection with the firm's trading and counterparty activity.

**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                            | 2.88                | 4.3%                                  |
| First-lien mortgages, domestic         | 0.09                | 0.5%                                  |
| Junior liens and HELOCs, domestic      | 0.05                | 4.5%                                  |
| Commercial and industrial <sup>2</sup> | 1.50                | 5.5%                                  |
| Commercial real estate, domestic       | 0.81                | 7.6%                                  |
| Credit cards                           | 0.14                | 15.8%                                 |
| Other consumer <sup>3</sup>            | 0.02                | 5.3%                                  |
| Other loans <sup>4</sup>               | 0.28                | 2.9%                                  |

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.

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

The following tables show projected regulatory capital ratios, projected losses, revenues, 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, Q1 2018 to Q1 2020, and the required regulatory minimum capital ratios for CCAR 2018**

|                                    | Required regulatory minimum capital ratios | Actual Q4 2017 | Stressed capital ratios <sup>1,2</sup> |                      |
|------------------------------------|--|----------------|--|----------------------|
|                                    |  |                | Q1 2020                                | Minimum <sup>3</sup> |
| Common Equity Tier 1 capital ratio | 4.5%                                       | 16.7%          | 12.2%                                  | 11.0%                |
| Tier 1 risk-based capital ratio    | 6.0%                                       | 18.8%          | 14.3%                                  | 13.0%                |
| Total risk-based capital ratio     | 8.0%                                       | 22.1%          | 17.6%                                  | 16.3%                |
| Tier 1 leverage ratio              | 4.0%                                       | 11.7%          | 9.9%                                   | 9.5%                 |
| Supplementary leverage ratio       | 3.0%                                       | n/a            | 7.4%                                   | 7.0%                 |

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 rules.

3 The minimum capital ratios represent the lowest projected ratio in the period Q1 2018 to Q1 2020, which do not necessarily occur in the same quarter.

**Table 5: HSBC Bank USA 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>   | (0.40)              | 0.2%                                   |
| <i>less</i>                                     |                     |  |
| Provisions                                      | 3.81                | 2.2%                                   |
| Realized losses/(gains) on securities (AFS/HTM) | 0.03                | 0.0%                                   |
| Trading and counterparty losses <sup>3</sup>    | 0.69                | 0.4%                                   |
| Other losses/(gains)                            | 0.00                | 0.0%                                   |
| <i>equals</i>                                   |                     |  |
| Net loss before taxes                           | (4.93)              | 2.9%                                   |

1 Average assets are calculated as 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 HSBC North America is subject to interim market risk components in the supervisory adverse and severely adverse scenarios to assess the potential losses and capital impact in connection with the firm's trading and counterparty activity.

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

|  | Billions of dollars | Portfolio loss rates (%) <sup>1</sup> |
|--|---------------------|---------------------------------------|
| Loan Losses                            | 2.88                | 4.3%                                  |
| First-lien mortgages, domestic         | 0.09                | 0.5%                                  |
| Junior liens and HELOCs, domestic      | 0.05                | 4.5%                                  |
| Commercial and industrial <sup>2</sup> | 1.50                | 5.5%                                  |
| Commercial real estate, domestic       | 0.81                | 7.6%                                  |
| Credit cards                           | 0.14                | 15.8%                                 |
| Other consumer <sup>3</sup>            | 0.02                | 5.3%                                  |
| Other loans <sup>4</sup>               | 0.28                | 2.9%                                  |

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.