

Bank of America  
2016 Dodd-Frank Act Annual Stress Test Results  
Supervisory Severely Adverse Scenario  
June 23, 2016



Bank of America Merrill Lynch U.S. Bank of America  
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# Important Presentation Information

The 2016 Dodd-Frank Act Annual Stress Test Results Disclosure (the “Stress Test Results”) included herein has not been prepared under generally accepted accounting principles (“GAAP”). The Stress Test Results present certain projected financial measures for Bank of America Corporation (“Bank of America”, “BAC”, or “the Company”) and Bank of America, National Association (“BANA”) under the hypothetical economic and market scenario and assumptions described herein. The Stress Test Results are not forecasts of actual financial results for BAC and BANA. Investors in securities issued by Bank of America or BANA should not rely on the Stress Test Results as being indicative of expected future results.

Bank of America’s financial information, prepared under GAAP, is available in reports filed with the Securities and Exchange Commission, including its Annual Report on Form 10-K for the year ended December 31, 2015.

Amounts presented are rounded to the nearest significant digit, as indicated or stated. Immaterial differences arising from the effect of rounding are not adjusted.

The stress testing of financial institutions conducted by the Board of Governors of the Federal Reserve System (“FRB”) is based on models and methodologies developed or employed by the FRB. The FRB does not disclose all details of its models and methodologies. Therefore, Bank of America may not be able to explain certain variances between the FRB’s projections and Bank of America’s Stress Test Results included herein.

# Assumptions

- This document provides internal projections for BAC and BANA under the stressed macroeconomic and market conditions in the Supervisory Severely Adverse scenario as prescribed by the FRB and the Office of the Comptroller of the Currency (“OCC”) at <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20160128a2.pdf>.
- The Supervisory Severely Adverse scenario is characterized by a deep recession in the U.S. and a significant decline in global economic activity, and assumes the following key macroeconomic variables:
  - Maximum quarterly (annualized) rate of real gross domestic product (“RGDP”) decline of 7.5%
  - Peak unemployment rate of 10.0%
  - Maximum home price index (“HPI”) decline of 25.0%
  - Maximum equity market decline of 50.7%
  - Trough U.S. 10-year Treasury yield of 0.2%
  - Trough U.S. 3-Month Treasury rate of -0.5%
- Severe instantaneous global market shocks are also applied to the trading book, private equity positions and counterparty exposures.
- Results presented herein include capital actions as specified under the Dodd-Frank Wall Street Reform and Consumer Protection Act (“DFA”) stress testing rules. Specified capital action assumptions are itemized on page 20.
- Results comply with methodologies and instructions provided by the FRB for the 2016 Comprehensive Capital Analysis and Review and Dodd-Frank Act Stress Test.
- Results presented are estimates and may not reflect the actual impacts to Bank of America if such a hypothetical scenario were to occur. Importantly, in certain instances, methodologies required by the FRB and OCC differ from Bank of America’s internal practices; therefore, results may not reflect actions Bank of America would likely employ under such stressed conditions.
- The stress test is applied to on- and off-balance sheet exposures as of December 31, 2015. Instantaneous global market shocks are applied as of January 4, 2016 as prescribed by the FRB.
- Capital, risk-weighted assets and capital ratios are calculated under the Basel 3 Standardized (“B3S”) approach. Values for Basel 3 are calculated in accordance with the transitional arrangements provided in the Basel 3 final rule.
- Income statement categories in this document conform to the FRB’s definition of Pre-Provision Net Revenue (“PPNR”), and classifications of revenue and expense items may differ from reporting under Bank of America’s public financial disclosures and preparation of financial statements under GAAP.

The background of the slide features a large, stylized, light beige 'B' logo, which is the primary branding element for Bank of America. The logo is composed of several thick, overlapping diagonal lines that form the shape of the letter. The text 'Bank of America Corporation' is positioned in the upper left quadrant of the slide, overlaid on the 'B' logo.

Bank of America Corporation

# Supervisory Severely Adverse – BAC Results

- A \$53.5B cumulative pre-tax loss is projected over the specified nine-quarter horizon under the Supervisory Severely Adverse scenario.
- Significant items include loan and lease losses (\$31.2B), incremental build in allowance for loan and lease losses through provision expense (\$10.0B), trading and counterparty losses (\$21.9B), goodwill impairments (\$7.6B, which is capital neutral) and other losses (\$5.1B), partially offset by \$22.5B of PPNR.
- The hypothetical pre-tax losses in the scenario generate deferred tax assets (representing future deductions) that are generally disallowed for regulatory capital.
- Risk-weighted assets decline primarily driven by a reduction in credit risk-weighted assets resulting from reduced loan demand consistent with the severely adverse macroeconomic conditions of the scenario.
- Under B3S, the estimated lowest stress ratios over the nine-quarter horizon for Common Equity Tier 1 Capital, Tier 1 Capital, Total Capital and Tier 1 Leverage are 6.7%, 8.4%, 11.5% and 5.7%, respectively.
- BAC maintains capital above required regulatory minimum ratios in the Supervisory Severely Adverse scenario. The required regulatory minimum ratios for Common Equity Tier 1 Capital, Tier 1 Capital, Total Capital and Tier 1 Leverage are 4.5%, 6.0%, 8.0% and 4.0%, respectively.

# Supervisory Severely Adverse – BAC Capital, Risk-Weighted Assets and Balance Sheet

Capital Ratios <sup>1</sup>	Actual Ratios at 12/31/15	Hypothetical Stressed Ratios at 3/31/18	Hypothetical Stressed Minimum Ratios <sup>2</sup>
Common Equity Tier 1 Capital Ratio	11.6%	6.7%	6.7%
Tier 1 Capital Ratio	12.9%	8.4%	8.4%
Total Capital Ratio	15.7%	11.5%	11.5%
Tier 1 Leverage Ratio	8.6%	5.7%	5.7%

Capital/Risk-Weighted Assets \$ in billions	Actual Balances at 12/31/15	Balances at 3/31/18	Balances at Common Equity Tier 1 Capital Ratio Minimum
Common Equity Tier 1 Capital	\$163.0	\$91.9	\$91.9
Basel 3 Risk-Weighted Assets	1,403.3	1,367.6	1,367.6

Balance Sheet <sup>3</sup> \$ in billions	Actual Balances at 12/31/15	Balances at 3/31/18	Balances at Common Equity Tier 1 Capital Ratio Minimum
Total Assets	\$2,147.4	\$2,123.6	\$2,123.6
Deposits	1,200.0	1,296.2	1,296.2

**Note:** Hypothetical stressed results presented are BAC's internal projections for the scenario using the rules and conditions set forth by the FRB with capital actions for BAC as required under DFA stress testing rules. See "Capital Actions" on page 20.

<sup>1</sup> Capital, risk-weighted assets and capital ratios are calculated under the Basel 3 Standardized approach. Values for Basel 3 are calculated in accordance with the transitional arrangements provided in the Basel 3 final rule.

<sup>2</sup> Minimum hypothetical ratio during the specified nine-quarter horizon.

<sup>3</sup> Projected balances for total assets and deposits are as reported in the FR Y-14A Summary Template for BAC.

# Supervisory Severely Adverse – BAC Income Statement and Loan and Lease Losses

Net Income Before Taxes \$ in billions	Cumulative Hypothetical Results Over 9 Quarters	% of Average Assets <sup>4</sup>
Pre-Provision Net Revenue <sup>1</sup>	\$22.5	1.1%
Less:		
Provision for Loan and Lease Losses	41.2	
Realized Losses on Securities (AFS/HTM)	0.3	
Trading and Counterparty Losses <sup>2</sup>	21.9	
Goodwill Impairment	7.6	
Other Losses <sup>3</sup>	5.1	
Net Income Before Taxes	<u>(\$53.5)</u>	-2.5%

Loan and Lease Losses \$ in billions	Cumulative Hypothetical Results Over 9 Quarters	Portfolio Loss Rates Over 9 Quarters <sup>6</sup>
Estimated Loan Losses <sup>5</sup>	\$31.2	3.6%
First Lien Mortgages, Domestic	3.1	1.7%
Junior Liens and HELOCs, Domestic	4.2	6.3%
Commercial and Industrial	6.9	3.3%
Commercial Real Estate	2.5	3.3%
Credit Cards	11.0	12.0%
Other Consumer	1.6	2.2%
Other Loans	2.0	1.3%

**Note:** Hypothetical stressed results presented are BAC's internal projections for the scenario using the rules and conditions set forth by the FRB.

<sup>1</sup> PPNR includes losses from operational risk events, mortgage put-back expenses, legal expenses and OREO costs. PPNR in this disclosure does not include projected changes in the fair value of loans held for sale and loans held for investment measured under the fair-value option.

<sup>2</sup> Trading and counterparty includes mark-to-market losses, changes in credit valuation adjustments and incremental default losses.

<sup>3</sup> Other losses include projected change in the fair value of loans held for sale and loans held for investment measured under the fair-value option.

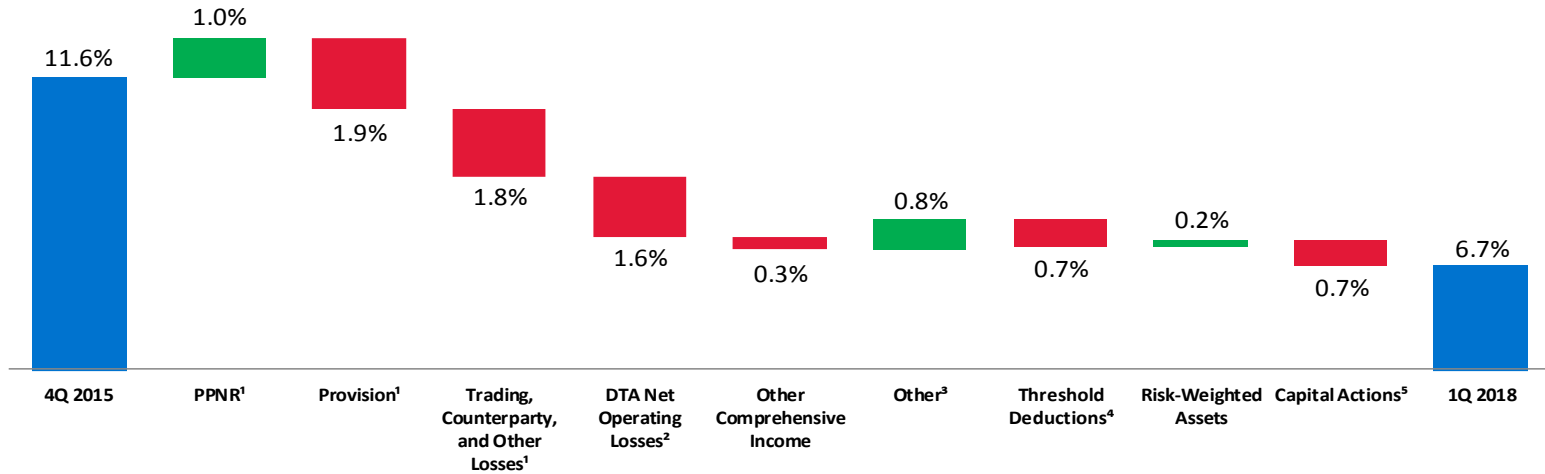
<sup>4</sup> Calculated by dividing nine-quarter cumulative revenue or earnings by the average of the quarter ending balances over the specified nine-quarter horizon.

<sup>5</sup> Commercial and industrial loans include small and medium enterprise loans and corporate cards. Other loans include international real estate loans.

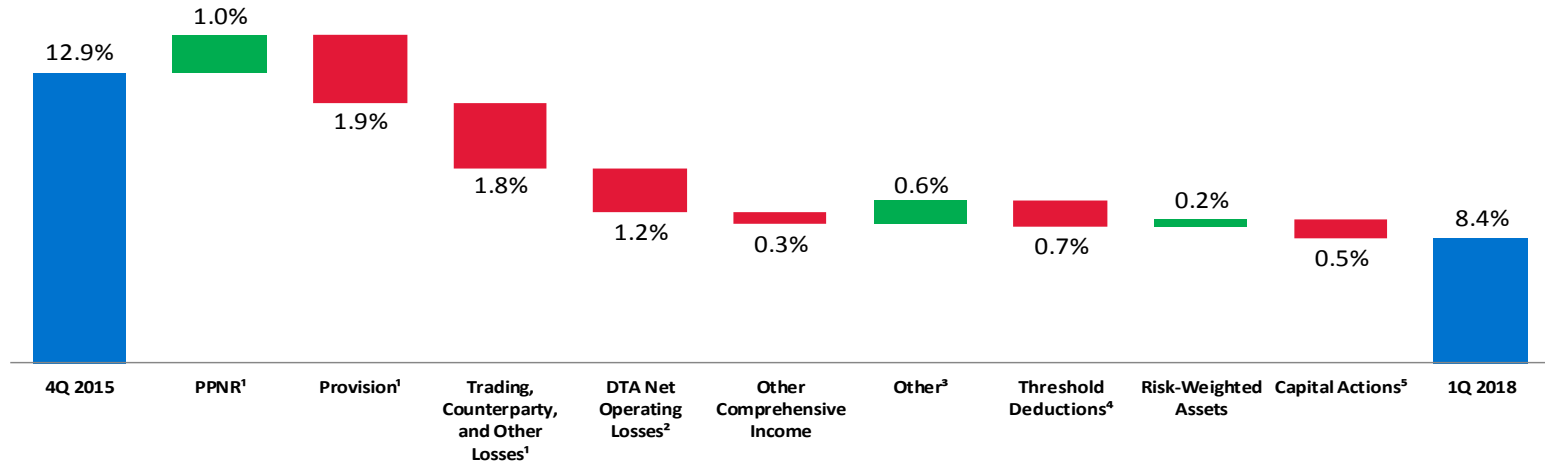
<sup>6</sup> Calculated by dividing the nine-quarter cumulative loan and lease losses by the average of the accrual loan and lease balances for each portfolio over the same time period.

# Supervisory Severely Adverse – BAC Regulatory Capital Ratio Drivers

## Common Equity Tier 1 Capital Ratio



## Tier 1 Capital Ratio



<sup>1</sup> Items presented above reflected net of tax, as applicable.

<sup>2</sup> DTA Net Operating Losses represent additional tax loss and credit carryforward balances that relate to losses experienced in the scenario. These assets are disallowed for regulatory capital.

<sup>3</sup> Other includes adjustments to capital for items such as: (i) goodwill, (ii) intangibles, (iii) fair value option, (iv) stock-based compensation and other miscellaneous adjustments as applicable for the respective ratio.

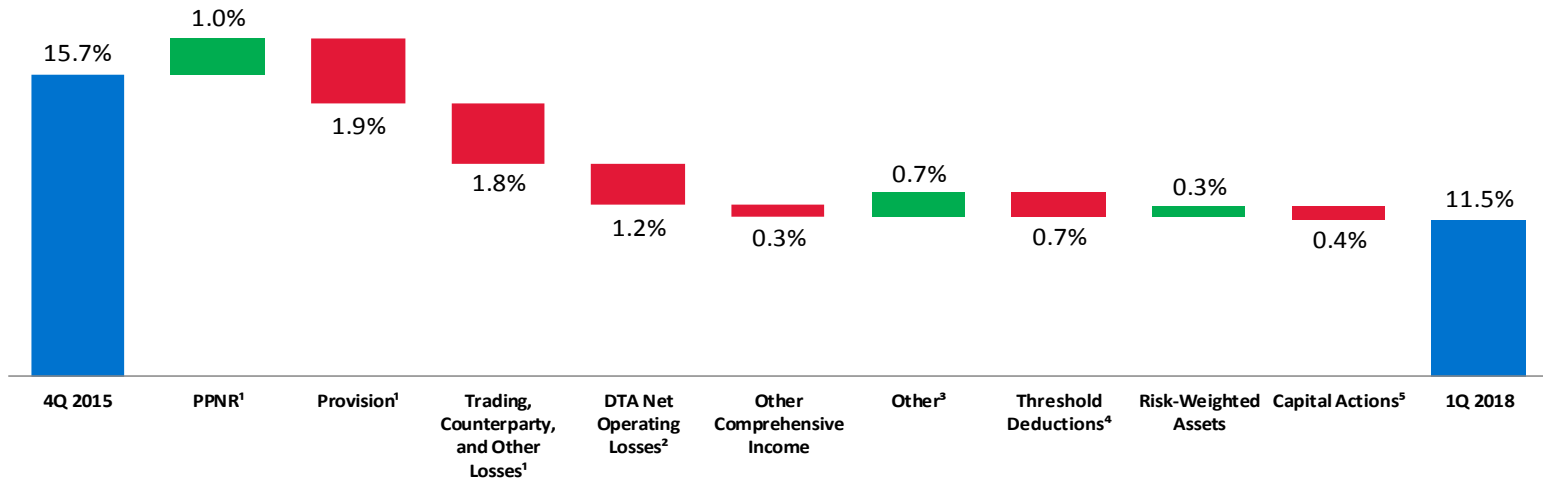
<sup>4</sup> Threshold Deductions primarily represent the portion of non-net operating loss DTAs that is disallowed for regulatory capital. These assets represent future deductions related to losses and expenses that are in the financial results but that are not yet deductible for tax purposes.

<sup>5</sup> Capital actions reflective of DFA rules as detailed on page 20.

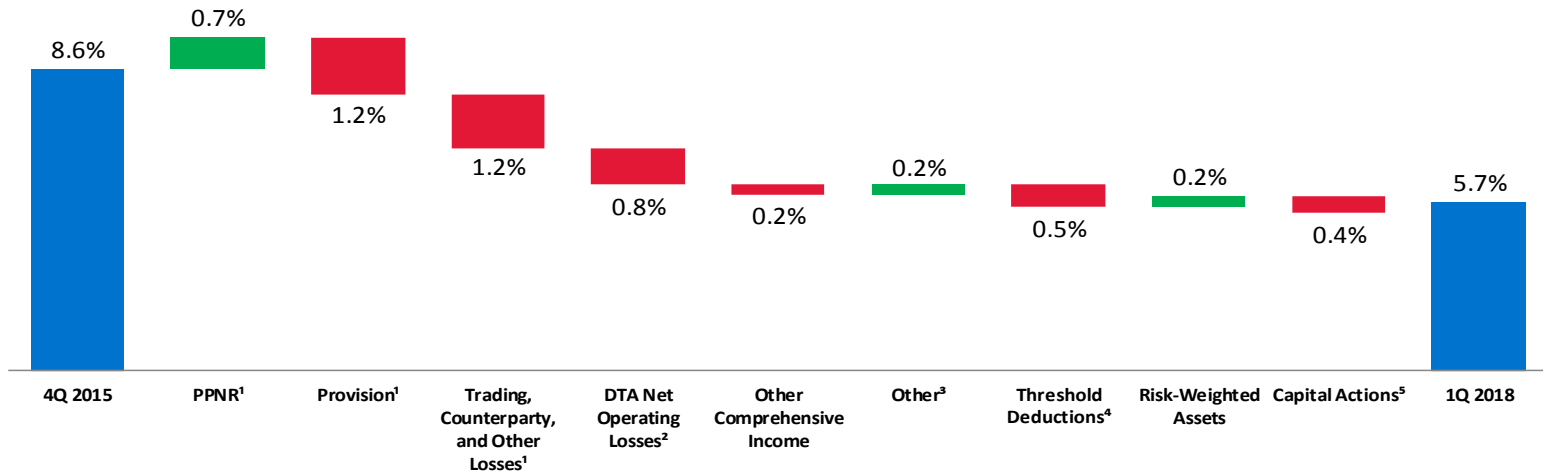


# Supervisory Severely Adverse – BAC Regulatory Capital Ratio Drivers

## Total Capital Ratio



## Tier 1 Leverage Ratio



<sup>1</sup> Items presented above reflected net of tax, as applicable.

<sup>2</sup> DTA Net Operating Losses represent additional tax loss and credit carryforward balances that relate to losses experienced in the scenario. These assets are disallowed for regulatory capital.

<sup>3</sup> Other includes adjustments to capital for items such as: (i) goodwill, (ii) intangibles, (iii) fair value option, (iv) stock-based compensation and other miscellaneous adjustments as applicable for the respective ratio.

<sup>4</sup> Threshold Deductions primarily represent the portion of non-net operating loss DTAs that is disallowed for regulatory capital. These assets represent future deductions related to losses and expenses that are in the financial results but that are not yet deductible for tax purposes.

<sup>5</sup> Capital actions reflective of DFA rules as detailed on page 20.

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Bank of America, National Association

# Supervisory Severely Adverse – BANA Results

- A \$3.6B cumulative pre-tax loss is projected over the specified nine-quarter horizon under the Supervisory Severely Adverse scenario.
- Significant items include loan and lease losses (\$30.8B), incremental build in allowance for loan and lease losses through provision expense (\$9.8B), trading and counterparty losses (\$7.1B) and other losses (\$4.8B), partially offset by \$49.1B of PPNR.
- Risk-weighted assets decline primarily driven by a reduction in credit risk-weighted assets resulting from reduced loan demand consistent with the severely adverse macroeconomic conditions of the scenario.
- Under B3S, the estimated lowest stress ratios over the nine-quarter horizon for Common Equity Tier 1 Capital, Tier 1 Capital, Total Capital and Tier 1 Leverage are 11.5%, 11.5%, 12.8% and 8.6%, respectively.

# Supervisory Severely Adverse – BANA Capital, Risk-Weighted Assets and Balance Sheet

Capital Ratios <sup>1</sup>	Actual Ratios at 12/31/15	Hypothetical Stressed Ratios at 3/31/18	Hypothetical Stressed Minimum Ratios <sup>2</sup>
Common Equity Tier 1 Capital Ratio	12.2%	12.2%	11.5%
Tier 1 Capital Ratio	12.2%	12.2%	11.5%
Total Capital Ratio	13.5%	13.6%	12.8%
Tier 1 Leverage Ratio	9.2%	9.0%	8.6%

Capital/Risk-Weighted Assets \$ in billions	Actual Balances at 12/31/15	Balances at 3/31/18	Balances at Common Equity Tier 1 Capital Ratio Minimum
Common Equity Tier 1 Capital	\$144.9	\$140.6	\$139.2
Basel 3 Risk-Weighted Assets	1,183.0	1,150.9	1,215.2

Balance Sheet <sup>3</sup> \$ in billions	Actual Balances at 12/31/15	Balances at 3/31/18	Balances at Common Equity Tier 1 Capital Ratio Minimum
Total Assets	\$1,639.3	\$1,632.9	\$1,642.7
Deposits	1,291.2	1,322.6	1,292.6

**Note:** Hypothetical stressed results presented are BAC's internal projections for the scenario using the rules and conditions set forth by the FRB and OCC.

<sup>1</sup> Capital, risk-weighted assets and capital ratios are calculated under the Basel 3 Standardized approach. Values for Basel 3 are calculated in accordance with the transitional arrangements provided in the Basel 3 final rule.

<sup>2</sup> Minimum hypothetical ratio during the specified nine-quarter horizon.

<sup>3</sup> Projected balances for total assets and deposits are as reported in the DFAST-14A Summary Template for BANA.

# Supervisory Severely Adverse – BANA Income Statement and Loan and Lease Losses

Net Income Before Taxes \$ in billions	Cumulative Hypothetical Results Over 9 Quarters	% of Average Assets <sup>4</sup>
Pre-Provision Net Revenue <sup>1</sup>	\$49.1	3.0%
Less:		
Provision for Loan and Lease Losses	40.7	
Realized Losses on Securities (AFS/HTM)	0.2	
Trading and Counterparty Losses <sup>2</sup>	7.1	
Goodwill Impairment	-	
Other Losses <sup>3</sup>	4.8	
Net Income Before Taxes	(\$3.6)	-0.2%

Loan and Lease Losses \$ in billions	Cumulative Hypothetical Results Over 9 Quarters	Portfolio Loss Rates Over 9 Quarters <sup>6</sup>
Estimated Loan Losses <sup>5</sup>	\$30.8	3.8%
First Lien Mortgages, Domestic	2.8	1.6%
Junior Liens and HELOCs, Domestic	4.2	6.3%
Commercial and Industrial	6.9	3.3%
Commercial Real Estate	2.4	3.3%
Credit Cards	11.0	12.0%
Other Consumer	1.6	2.2%
Other Loans	2.0	1.5%

**Note:** Hypothetical stressed results presented are BAC's internal projections for the scenario using the rules and conditions set forth by the FRB and OCC.

<sup>1</sup> PPNR includes losses from operational risk events, mortgage put-back expenses, legal expenses and OREO costs. PPNR in this disclosure does not include projected changes in the fair value of loans held for sale and loans held for investment measured under the fair-value option.

<sup>2</sup> Trading and counterparty includes mark-to-market losses, changes in credit valuation adjustments and incremental default losses.

<sup>3</sup> Other losses include projected change in the fair value of loans held for sale and loans held for investment measured under the fair-value option.

<sup>4</sup> Calculated by dividing nine-quarter cumulative revenue or earnings by the average of the quarter ending balances over the specified nine-quarter horizon.

<sup>5</sup> Commercial and industrial loans include small and medium enterprise loans and corporate cards. Other loans include international real estate loans.

<sup>6</sup> Calculated by dividing the nine-quarter cumulative loan and lease losses by the average of the accrual loan and lease balances for each portfolio over the same time period.



# Stress Test Methodologies

# Credit Risk Methodologies

## Credit Risk

The risk of loss arising from a borrower's or counterparty's future inability or failure to repay its contractual obligations is analyzed by product in the stress testing process. Each product is assessed for charge-offs and allowance using the relevant loan product loss forecasting tools over the specified horizon. Quantitatively driven results are analyzed and qualitative adjustments are made related to historical experience, portfolio characteristics and subject matter expertise. Credit risk and losses related to borrower default are projected in the income statement through provision for loan and lease losses.

### Commercial Asset Quality

- The commercial portfolio includes commercial credit exposure across products including Commercial and Industrial (“C&I”) and Commercial Real Estate (“CRE”).
- Stress testing uses the same general approach and inputs as the baseline forecast. The C&I approach captures losses through stressed obligor ratings, increased defaults, and elevated loss given default; the CRE approach captures losses through deterioration in the underlying CRE collateral and collateral value.
- The level of stress is determined by incorporating a variety of macroeconomic variables, including, but not limited to, RGDP, equity market prices, corporate bond spreads, unemployment rates, HPI and the commercial real estate price index (“CREPI”).

### Consumer Asset Quality

- The main consumer portfolios include Card Services (U.S. Card, U.K. Card and Business Card) and Home Loans (First Mortgage, Home Equity).
- The loss forecasting process for Card Services uses probability of default and loss given default models. Key model drivers include unemployment rates and unemployment claims.
- The loss forecasting process for Home Loans includes the use of a loan level logistic regression models. Key model drivers include loan level characteristics such as loan-to-value ratio, plus macroeconomic assumptions such as HPI and unemployment rates.

# Market and Counterparty Risk Methodologies

## Market and Counterparty Risk

The risk of adverse impacts to asset values and associated counterparty receivables is incorporated through the application of market disruption assumptions applied to trading portfolios, private equity positions and counterparty exposures. Hypothetical losses are calculated by applying the Supervisory Severely Adverse global market shocks to the relevant on- and off-balance sheet positions in these portfolios.

### Instantaneous Shocks / Trading and Counterparty Losses

- Market risk stress testing estimates and reports the impact to earnings under the prescribed instantaneous market disruption shocks.
- Shocks across the portfolio risk factors (including interest rates, currencies, equities, commodities and credit) are applied to company-wide trading and private equity and counterparty exposures as of January 4, 2016.
- Additional default risk beyond the market risk shocks in the trading portfolio is considered through an issuer incremental default risk (“IDR”) calculation.
- Stress testing of the counterparty risk exposure is designed to assess the losses from the counterparty portfolio of changes in both market and credit risk conditions. The impact is measured by the change in mark-to-market value of the credit valuation adjustment after applying the stress scenario shocks. Additionally, at the consolidated level and for the BANA legal entity, the resulting impact of a default of a large counterparty post the application of these shocks is included.
- The trading and counterparty scenario P&L impact is included in the first quarter of the forecast period without recovery assumed in the remaining quarters.



# Interest Rate Risk Methodologies

## Interest Rate Risk

Interest rate risk represents the most significant market risk exposure to the core balance sheet and is measured as the exposure of the Company's earnings and capital to movements in interest rates. Client-facing activities, primarily lending and deposit-taking, create interest rate sensitive positions on the balance sheet.

## Net Interest Income

- The Company's core net interest income trajectory is reflected in the scenario as it relates to the interest income from loans, debt securities and other interest-earning assets in addition to the interest expense related to deposits, borrowings and other interest-bearing liabilities. This incorporates balance sheet assumptions such as loan and deposit growth and pricing, changes in funding mix, product re-pricing and maturity characteristics.
- The scenario captures the potential interest rate stresses to the balance sheet, net interest income and other activities that are sensitive to changes in interest rate levels and yield curves. For example, the scenario incorporates changes to interest rates that are applied across exposures and business activities, resulting in impacts to prepayments on mortgage-related assets and net interest income, among other items.

## Capital

- In addition to net interest income, the other comprehensive income impact to the Asset-Liability Management available for sale ("AFS") securities portfolio and the valuation impact to the mortgage servicing rights portfolio are considered when evaluating interest rate risk. These items and the impact to the Company's DTA can affect the Company's capital ratios under Basel 3.

# Operational Risk Methodologies

## Operational Risk

The risk of loss resulting from inadequate or failed internal processes, people, systems or external events including external fraud is considered in each stress test. These risks are independently assessed for our businesses and operational loss event categories both for legal (e.g., litigation) and non-legal operational risks.

### Non-legal Operational Loss

- Non-legal losses are included in the projections for each business and result in a reduction in PPNR. Three approaches are used – statistical regression models, fallback methodology (projections from first principles and simple historical averages) and scenario analysis – to arrive at stress losses under various scenarios.
- Non-legal losses are expected to increase across most of the businesses in stress scenarios given pressure on execution and potential business disruption. Fraud is also expected to increase in most businesses.

### Litigation Expense

- Incremental litigation expense is analyzed across the company in aggregate and on a case-by-case basis for significant matters. It is included as an increase to projected operational risk losses in the stress scenario, reflected as a reduction in PPNR.

# Other Methodologies

## Pre-Provision Net Revenue

- Net interest income is determined by forecasting asset and liability balances and the related interest income and expense over the specified nine-quarter horizon using the macroeconomic variables.
- Noninterest income and noninterest expense are determined on a business-by-business basis over the specified nine-quarter horizon using the macroeconomic variables that are relevant to each business. Stress losses related to operational risk events, including mortgage representation and warranties and legal costs, are included within PPNR.
- Personnel expense calculations using the FRB-prescribed methodology for the scenario do not incorporate personnel expense reductions in conjunction with the market and counterparty disruptions.

## Provision for Loan and Lease Losses

- Charge-off projections are derived from the loss forecasting processes described under Credit Risk Methodologies. Loss forecasting models utilize the macroeconomic variables that are relevant and predictive for each portfolio (e.g., unemployment rates, RGDP, HPI, CREPI, Baa-30 yr).
- The allowance for loan and lease losses, and related reserve build or release, is projected for each quarter over the specified nine-quarter horizon by assessing the adequacy of the reserve under the macroeconomic conditions in the scenario.
- Stress test projections for charge-offs and allowance for loan and lease losses incorporate many of the same forecasting models and processes that BAC utilizes for ongoing risk management and financial forecasting.

# Other Methodologies (continued)

## Losses

- AFS and held to maturity (“HTM”) securities are assessed for other than temporary impairment which may result in realized losses over the specified nine-quarter horizon under the macroeconomic assumptions in the scenario.
- Goodwill impairment is assessed by reporting unit using the hypothetical stressed income statement results.
- Other losses excluding goodwill are primarily related to loans held under the fair value option and loans held for sale where projections are based on the macroeconomic assumptions in the scenario without reference to the global market shock.

## Capital Actions

For stressed projections under the Dodd-Frank Act stress test rules, a BHC must use the following assumptions regarding its capital actions over the planning horizon for the supervisory baseline scenario, the supervisory adverse scenario, and the supervisory severely adverse scenario:

- For the initial quarter of the planning horizon, the BHC must take into account its actual capital actions taken throughout the quarter.
- For each of the second through ninth quarters of the planning horizon, the BHC must include in the projections of capital
  - common stock dividends equal to the quarterly average dollar amount of common stock dividends that the company paid in the previous year (that is, the initial quarter of the planning horizon and the preceding three calendar quarters) plus common stock dividends attributable to issuances related to expensed employee compensation or in connection with a planned merger or acquisition to the extent that the merger or acquisition is reflected in the BHC’s pro forma balance sheet estimates;
  - payments on any other instrument that is eligible for inclusion in the numerator of a regulatory capital ratio equal to the stated dividend, interest, or principal due on such instrument during the quarter;
  - an assumption of no redemption or repurchase of any capital instrument that is eligible for inclusion in the numerator of a regulatory capital ratio; and
  - an assumption of no issuances of common stock or preferred stock, except for issuances related to expensed employee compensation or in connection with a planned merger or acquisition to the extent that the merger or acquisition is reflected in the BHC’s pro forma balance sheet estimates.

**Bank of America**



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