



# Dodd-Frank Act Stress Test 2016: Supervisory Stress Test Methodology and Results

June 2016

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM





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# Preface

The Federal Reserve promotes a safe, sound, and stable banking and financial system that supports the growth and stability of the U.S. economy through its supervision of bank holding companies (BHCs), savings and loan holding companies, state member banks, and nonbank financial institutions that the Financial Stability Oversight Council (FSOC) has determined shall be supervised by the Board of Governors of the Federal Reserve System.<sup>1</sup>

The Federal Reserve has established frameworks and programs for the supervision of its largest and most complex financial institutions to fulfill its supervisory objectives and to reorient its supervisory program in response to the lessons learned from the financial crisis. As part of these supervisory frameworks and programs, the Federal Reserve annually assesses whether BHCs with \$50 billion or more in total consolidated assets have effective capital planning processes and sufficient capital to absorb losses during stressful conditions while meeting obligations to creditors and counterparties and continuing to serve as credit intermediaries. This annual assessment includes two related programs:

- **The Comprehensive Capital Analysis and Review (CCAR)** evaluates a BHC's capital adequacy, capi-

tal planning process, and planned capital distributions, such as any dividend payments and common stock repurchases. As part of CCAR, the Federal Reserve evaluates whether BHCs have sufficient capital to continue operations throughout times of economic and financial market stress and whether they have robust, forward-looking capital-planning processes that account for their unique risks. The Federal Reserve may object to a BHC's capital plan on quantitative or qualitative grounds. If the Federal Reserve objects to a BHC's capital plan, the BHC may not make any capital distribution unless the Federal Reserve indicates in writing that it does not object to the distribution.

- **Dodd-Frank Act supervisory stress testing** is a forward-looking quantitative evaluation of the impact of stressful economic and financial market conditions on BHC capital. This program serves to inform the Federal Reserve, the financial companies, and the general public of how institutions' capital ratios might change under a hypothetical set of economic conditions developed by the Federal Reserve.<sup>2</sup> The supervisory stress test, after incorporating firms' planned capital actions, is also used for quantitative assessment in CCAR.

<sup>1</sup> Information on the Federal Reserve's regulation and supervision function, including more detail on stress testing and capital planning assessment, is available on the Federal Reserve website at [www.federalreserve.gov/bankinforeg/default.htm](http://www.federalreserve.gov/bankinforeg/default.htm).

<sup>2</sup> In addition to an annual supervisory stress test conducted by the Federal Reserve, each BHC is required to conduct annual company-run stress tests under the same supervisory scenarios and conduct a mid-cycle stress test under company-developed scenarios.



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# Executive Summary

The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) requires the Federal Reserve to conduct an annual stress test of BHCs with \$50 billion or more in total consolidated assets and any nonbank financial company that the FSOC has determined shall be supervised by the Board.<sup>3</sup> The Board first adopted rules implementing this requirement in October 2012 and most recently modified these rules in December 2015.<sup>4</sup>

For this year's stress test cycle (DFAST 2016), which began January 1, 2016, the Federal Reserve conducted supervisory stress tests of 33 BHCs.

This report provides

- [background](#) on Dodd-Frank Act stress testing;
- details of the [adverse and severely adverse supervisory scenarios](#) used in DFAST 2016;
- an overview of the analytical [framework and methods](#) used to generate the Federal Reserve's projections, highlighting notable changes from last year's program; and
- the [results](#) of the supervisory stress tests under adverse and severely adverse scenarios for the BHCs that participated in the DFAST 2016 program, presented both in the aggregate and for individual institutions.

The adverse and severely adverse supervisory scenarios used in DFAST 2016 feature U.S. and global recessions. In particular, the 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 adverse scenario is characterized by weakening economic activity across all countries or country blocs included in the scenario, accompanied by a period of deflation in the United States and in the other countries and country blocs.

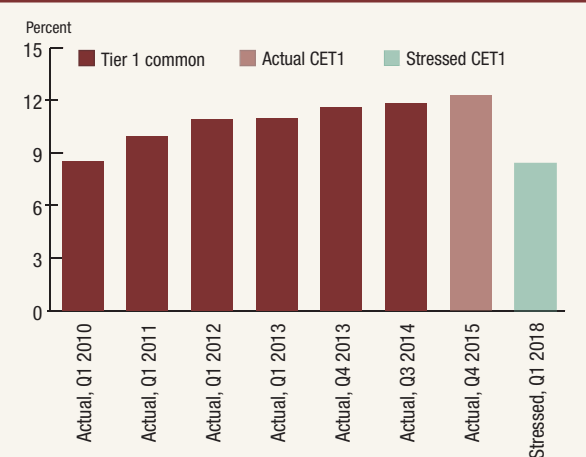
<sup>3</sup> 12 USC 5365(i)(1).

<sup>4</sup> See 12 CFR part 252, subpart E.

In conducting its supervisory stress tests, the Federal Reserve calculated its projections of a BHC's balance sheet, risk-weighted assets (RWAs), net income, and resulting regulatory capital ratios under these scenarios using data on BHCs' financial conditions and risk characteristics provided by the BHCs and a set of models developed or selected by the Federal Reserve. As compared to DFAST 2015, the Federal Reserve enhanced some of the supervisory models to improve model stability and incorporate greater precision in the calculation of capital. These changes are highlighted in [box 1](#). Changes in supervisory stress test results from the prior year reflect a combination of changes in supervisory scenarios, BHCs' financial conditions and risk characteristics, and enhancements to supervisory models. A description of the effect of scenarios, new data, and model changes on the stress test results is included in [box 2](#). Specific descriptions of the supervisory models and related assumptions can be found in [appendix B](#).

The results of the DFAST 2016 projections suggest that, in the aggregate, the 33 BHCs would experience

**Figure 1. Historical and stressed tier 1 common ratio and common equity tier 1 ratio**



Source: FR Y-9C, FR Y-14A, and supervisory estimates under the severely adverse scenario.

substantial losses under both the adverse and the severely adverse scenarios.

Over the nine quarters of the planning horizon, aggregate losses at the 33 BHCs under the severely adverse scenario are projected to be \$526 billion. This includes losses across loan portfolios, losses from credit impairment on securities held in the BHCs' investment portfolios, trading and counterparty credit losses from a global market shock, and other losses. Projected aggregate net revenue before provisions for loan and lease losses (pre-provision net revenue, or PPNR) is \$384 billion, and net income before taxes is projected to be -\$195 billion.

As illustrated in [figure 1](#), in the severely adverse scenario, the aggregate Common Equity Tier 1 (CET1)

capital ratio would fall from an actual 12.3 percent in the fourth quarter of 2015 to a post-stress level of 8.4 percent in the first quarter of 2018.

In the adverse scenario, aggregate projected losses, PPNR, and net income before taxes are \$324 billion, \$475 billion, and \$142 billion, respectively. The aggregate CET1 capital ratio under the adverse scenario would fall 173 basis points to its minimum over the planning horizon of 10.5 percent in the first quarter of 2018.

Details of the results are provided in the [Supervisory Stress Test Results](#) section of this report.

# Background on Dodd-Frank Act Stress Testing

In the wake of the financial crisis, Congress enacted the Dodd-Frank Act,<sup>5</sup> which, among other provisions, requires the Federal Reserve to conduct an annual stress test of BHCs with total consolidated assets of \$50 billion or more as well as nonbank financial companies designated by the FSOC for supervision by the Board (supervisory stress test).<sup>6</sup>

The Dodd-Frank Act also requires each of these “covered” companies to conduct its own stress tests, and report its results to the Federal Reserve, twice a year (company-run stress test).<sup>7</sup> The Federal Reserve first adopted rules implementing these requirements

in October 2012 and most recently modified these rules in December 2015.<sup>8</sup>

In conducting the supervisory stress tests, the Federal Reserve projects balance sheets, RWAs, net income, and resulting post-stress capital levels and regulatory capital ratios over a nine-quarter “planning horizon,” generally using a set of capital action assumptions prescribed in the Dodd-Frank Act stress test rules (see Capital Action Assumptions and Regulatory Capital Ratios). The projections are based on three macroeconomic scenarios required by the Dodd-Frank Act (baseline, adverse, and severely adverse) and developed annually by the Federal Reserve.<sup>9</sup>

For the “annual” company-run stress test, the BHCs use the same planning horizon, capital action assumptions, and scenarios<sup>10</sup> as those used in the supervisory stress test.<sup>11</sup> The use of common capital action assumptions and scenarios enhances the comparability of the supervisory and company-run results. The results of the company-run stress test must be submitted to the Federal Reserve. In addition, covered companies must also conduct a “mid-cycle” test and report the results to the Federal Reserve.

<sup>5</sup> Pub. L. No. 111-203, 124 Stat. 1376 (2010).

<sup>6</sup> See 12 USC 5365(i)(1). The 33 BHCs that participated in the 2016 Dodd-Frank Act supervisory stress test are Ally Financial Inc.; American Express Company; BancWest Corporation; Bank of America Corporation; The Bank of New York Mellon Corporation; BB&T Corporation; BBVA Compass Bancshares, Inc.; BMO Financial Corp.; Capital One Financial Corporation; Citigroup, Inc.; Citizens Financial Group, Inc.; Comerica Incorporated; Deutsche Bank Trust Corporation; Discover Financial Services; Fifth Third Bancorp; The Goldman Sachs Group, Inc.; HSBC North America Holdings Inc.; Huntington Bancshares Inc.; JPMorgan Chase & Co.; Keycorp; M&T Bank Corporation; Morgan Stanley; MUFG Americas Holdings Corporation; Northern Trust Corp.; The PNC Financial Services Group, Inc.; Regions Financial Corporation; Santander Holdings USA, Inc.; State Street Corporation; SunTrust Banks, Inc.; U.S. Bancorp; TD Group US Holdings LLC; Wells Fargo & Company; and Zions Bancorporation. Certain BHCs with \$50 billion in assets are not subject to the supervisory stress test this year. CIT Group Inc. is not participating in supervisory or BHC-run Dodd-Frank Act stress testing but is required to submit a capital plan under the capital plan rule for review by the Federal Reserve. CIT Group Inc. will be subject to Dodd-Frank stress testing beginning January 1, 2017. See 12 CFR 225.8(c); 12 CFR 252.43(b).

The legal name of BancWest Corporation was First Hawaiian, Inc., at the time that the DFAST Supervisory Stress Test Methodology and Results was published. However, the entity is referred to as BancWest Corporation throughout the document, as it will revert to being called BancWest Corporation on July 1, 2016.

<sup>7</sup> Under the Dodd-Frank Act, all financial companies with more than \$10 billion in total consolidated assets that are supervised by a primary federal financial regulatory agency are required to conduct an annual company-run stress test. However, only the covered companies are subject to the additional mid-cycle stress test and the supervisory stress test. See 12 USC 5365(i)(2).

<sup>8</sup> 12 CFR part 252, subparts E and F; see 77 Fed. Reg. 62,378; Capital Plan and Stress Test Rules, 79 Fed. Reg. 64,026 (October 27, 2014), [www.gpo.gov/fdsys/pkg/FR-2014-10-27/pdf/2014-25170.pdf](http://www.gpo.gov/fdsys/pkg/FR-2014-10-27/pdf/2014-25170.pdf); Application of the Revised Capital Framework to the Capital Plan and Stress Test Rules, 79 Fed. Reg. 13,498 (March 11, 2014), [www.gpo.gov/fdsys/pkg/FR-2014-03-11/pdf/2014-05053.pdf](http://www.gpo.gov/fdsys/pkg/FR-2014-03-11/pdf/2014-05053.pdf); Capital Plan and Stress Test Rules, 79 Fed. Reg. 64,026 (October 27, 2014), [www.gpo.gov/fdsys/pkg/FR-2014-10-27/pdf/2014-25170.pdf](http://www.gpo.gov/fdsys/pkg/FR-2014-10-27/pdf/2014-25170.pdf); and Amendments to the Capital Plan and Stress Test Rules, 80 Fed. Reg. 75,419 (December 2, 2015), [www.gpo.gov/fdsys/pkg/FR-2015-12-02/pdf/2015-30471.pdf](http://www.gpo.gov/fdsys/pkg/FR-2015-12-02/pdf/2015-30471.pdf).

<sup>9</sup> The Board has issued a policy statement regarding its process for designing the scenarios. See Policy Statement on the Scenario Design Framework for Stress Testing, 78 Fed. Reg. 71,435 (November 29, 2013), [www.gpo.gov/fdsys/pkg/FR-2013-11-29/pdf/2013-27009.pdf](http://www.gpo.gov/fdsys/pkg/FR-2013-11-29/pdf/2013-27009.pdf) (12 CFR part 252, appendix A).

<sup>10</sup> Under the stress test rules, the Federal Reserve was required to provide the scenarios to companies no later than February 15, 2016, for DFAST 2016. See 12 CFR 252.54(b)(1).

<sup>11</sup> See 12 CFR 252.54.

Together, the Dodd-Frank Act supervisory stress tests and the company-run stress tests are intended to provide company management and boards of directors, the public, and supervisors with forward-looking information to help gauge the potential effect of stressful conditions on the ability of these large banking organizations to absorb losses, while meeting obligations to creditors and other counterparties,

and continuing to serve as credit intermediaries. The Dodd-Frank Act requires each BHC to disclose a summary of its company-run stress test results and also requires the Federal Reserve to disclose a summary of its supervisory stress test results.<sup>12</sup>

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<sup>12</sup> 12 USC 5365(i)(1)(B)(v) and 5365(i)(2)(C)(iv).

# Supervisory Scenarios

On January 28, 2016, the Federal Reserve released the three supervisory scenarios: baseline, adverse, and severely adverse.<sup>13</sup> This section describes the adverse and severely adverse scenarios that were used for the projections contained in this report. These scenarios were developed using the approach described in the Board's Policy Statement on the Scenario Design Framework for Stress Testing.<sup>14</sup> The adverse and severely adverse scenarios are not forecasts, but rather hypothetical scenarios designed to assess the strength of banking organizations and their resilience to an unfavorable economic environment.

Supervisory scenarios include trajectories for 28 variables. These include 16 variables that capture economic activity, asset prices, and interest rates in the U.S. economy and financial markets and three variables (real gross domestic product (GDP) growth, inflation, and the U.S./foreign currency exchange rate) in each of the four countries/country blocs.

Similar to last year, the Federal Reserve applied a global market shock to the trading portfolio of six BHCs with large trading and private equity exposures and a counterparty default scenario component to eight BHCs with substantial trading, processing, or custodial operations (see [Global Market Shock and Counterparty Default Components](#)).

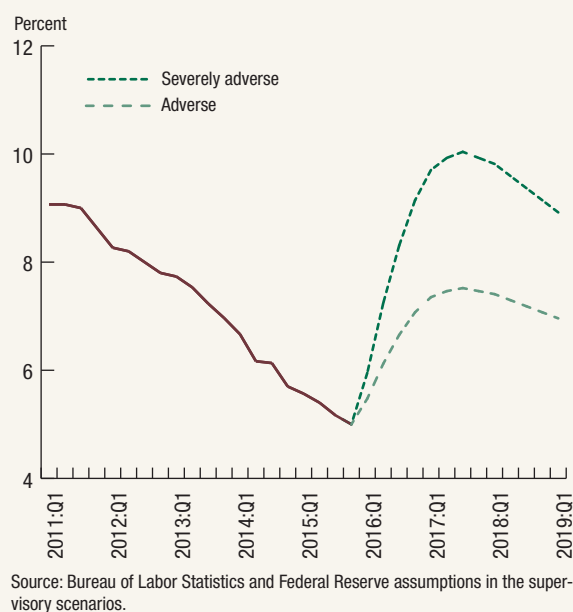
## Severely Adverse Scenario

Figures 2 through 7 illustrate the hypothetical trajectories for some of the key variables describing U.S. economic activity and asset prices under the severely adverse scenario.

<sup>13</sup> See Board of Governors of the Federal Reserve System (2016), "2016 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule" (Washington, DC: Board of Governors, January 28), <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20160128a2.pdf> for additional information and for the details of the supervisory scenarios.

<sup>14</sup> 12 CFR part 252, appendix A.

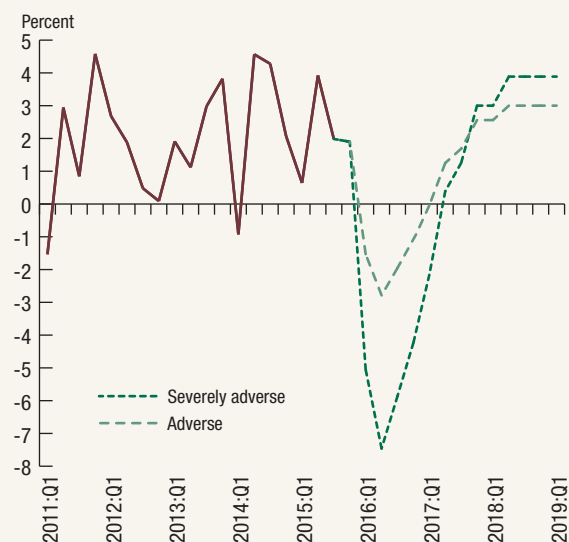
**Figure 2. Unemployment rate in the severely adverse and adverse scenarios, 2011:Q1-2019:Q1**



The 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. In this scenario, the level of U.S. real GDP begins to decline in the first quarter of 2016 and reaches a trough in the first quarter of 2017 that is 6.25 percent below the pre-recession peak. The unemployment rate increases by 5 percentage points, to 10 percent, by the middle of 2017, and headline consumer price inflation rises from about 0.25 percent at an annual rate in the first quarter of 2016 to about 1.25 percent at an annual rate by the end of the recession.

Asset prices drop sharply in the scenario, consistent with the developments described above. Equity prices fall approximately 50 percent through the end of 2016, accompanied by a surge in equity market volatility, which approaches the levels attained in 2008. House prices and commercial real estate prices also

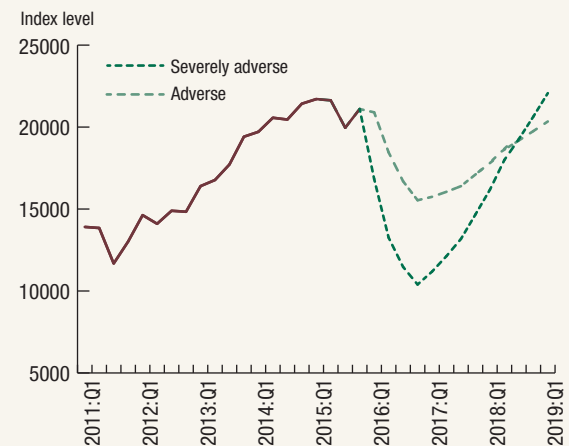
**Figure 3. Real GDP growth rate in the severely adverse and adverse scenarios, 2011:Q1-2019:Q1**



Source: Bureau of Economic Analysis and Federal Reserve assumptions in the supervisory scenarios.

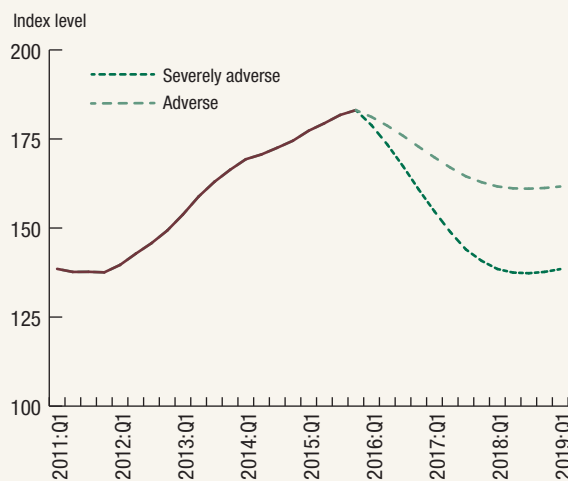
experience considerable declines, with house prices dropping 25 percent through the third quarter of 2018 and commercial real estate prices falling 30 percent through the second quarter of 2018. Corporate financial conditions are stressed severely, reflecting mounting credit losses, heightened investor risk aversion, and strained market liquidity conditions; the spread between yields on investment-grade corporate

**Figure 4. Dow Jones Total Stock Market Index, end of quarter in the severely adverse and adverse scenarios, 2011:Q1-2019:Q1**



Source: Dow Jones and Federal Reserve assumptions in the supervisory scenarios.

**Figure 5. National House Price Index in the severely adverse and adverse scenarios, 2011:Q1-2019:Q1**

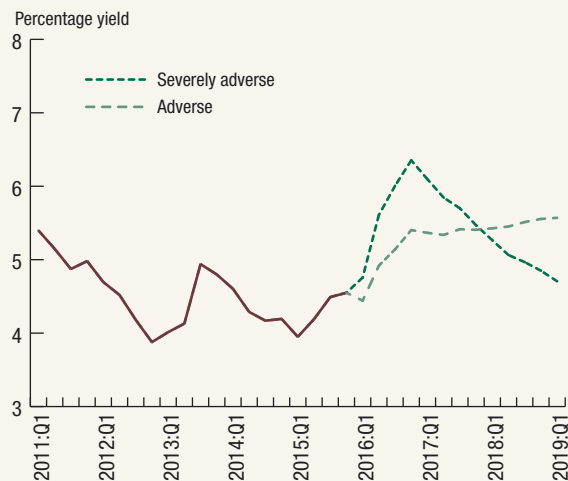


Source: CoreLogic (seasonally adjusted by Federal Reserve) and Federal Reserve assumptions in the supervisory scenarios.

bonds and yields on long-term Treasury securities increases to 5.75 percent by the end of 2016.

As a result of the severe decline in real activity and subdued inflation, short-term Treasury rates fall to negative 0.50 percent by mid-2016 and remain at that level through the end of the scenario. For the purposes of this scenario, it is assumed that the adjustment to negative short-term interest rates proceeds with no additional financial market disruptions. The

**Figure 6. U.S. BBB corporate yield, quarterly average in the severely adverse and adverse scenarios, 2011:Q1-2019:Q1**



Source: Merrill Lynch (adjusted by Federal Reserve using a Nelson-Siegel smoothed yield curve model) and Federal Reserve assumptions in the supervisory scenarios.

10-year Treasury yield drops to about 0.25 percent in the first quarter of 2016, rising gradually thereafter to reach about 0.75 percent by the end of the recession in early 2017 and about 1.75 percent by the first quarter of 2019.

The international component of this scenario features severe recessions in the euro area, the United Kingdom, and Japan, and a mild recession in developing Asia. As a result of acute economic weakness, all foreign economies included in the scenario experience a pronounced decline in consumer prices. Reflecting flight-to-safety capital flows during weak economic conditions, the U.S. dollar is assumed to appreciate against the euro, the pound sterling, and the currencies of developing Asia. The dollar is assumed to depreciate modestly against the yen, also in line with flight-to-safety capital flows.

Compared to last year's scenario, this year's severely adverse scenario features a more severe downturn in the U.S. economy. The more severe downturn in activity assumed in the scenario reflects the Federal Reserve's scenario design framework for stress testing, which includes countercyclical elements. Under this framework, the unemployment rate in the severely adverse scenario will reach a peak of at least 10 percent, which leads to a progressively greater increase in the unemployment rate when its starting level falls below 6 percent. In line with the more severe U.S. recession, this year's severely adverse scenario also features a path of negative short-term U.S.

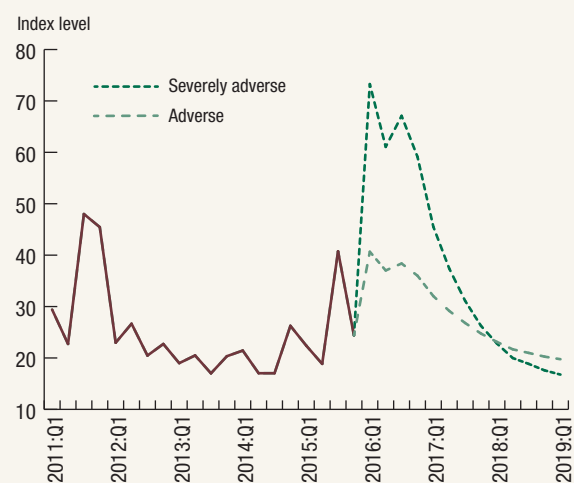
Treasury rates. In turn, lower Treasury rates moderate the drop in asset prices and the increase in market volatility, compared to last year's scenario. Furthermore, this year's scenario does not feature the pronounced increase in inflation that was featured in last year's scenario.

## Adverse Scenario

Figures 2 through 7 illustrate the hypothetical trajectories for some of the key variables describing U.S. economic activity and asset prices under the adverse scenario.

The adverse scenario is characterized by weakening economic activity across all countries or country blocs included in the scenario. The economic downturn is accompanied by a period of deflation in the United States and in the other countries and country blocs. The adverse scenario features a moderate U.S. recession that begins in the first quarter of 2016. Real GDP in the United States falls 1.75 percent from the pre-recession peak in the fourth quarter of 2015 to the recession trough in the first quarter of 2017, while the unemployment rate rises steadily, peaking at 7.50 percent in the middle of 2017. The U.S. recession is accompanied by a mild deflationary period with consumer prices falling about 0.50 percent over the four quarters of 2016. Reflecting weak economic conditions and deflationary pressures, short-term interest rates in the United States remain near zero over the projection period. The 10-year Treasury yield declines to 1.25 percent in early 2016 before rising gradually thereafter to 3 percent in the first quarter of 2019.

**Figure 7. U.S. Market Volatility Index (VIX) in the severely adverse and adverse scenarios, 2011:Q1-2019:Q1**



Source: Chicago Board Options Exchange (converted to quarterly by Federal Reserve using the maximum quarterly close-of-day value) and Federal Reserve assumptions in the supervisory scenarios.

Financial conditions tighten for corporations and households during the recession, with spreads between investment-grade corporate bond yields and 10-year Treasury yields and spreads between mortgage rates and 10-year Treasury yields widening through the end of 2016. Asset prices decline in the adverse scenario. Equity prices fall approximately 25 percent through the fourth quarter of 2016, accompanied by a moderate rise in equity market volatility. Aggregate house prices and commercial real estate prices experience moderate declines; commercial real estate prices fall 12 percent through the third quarter of 2017 and house prices fall 12 percent through the third quarter of 2018. Following the end of the recession in the United States, real activity picks up slowly at first and then gains speed; real U.S. GDP growth rises from 1.25 percent at an annual rate

in the second quarter of 2017 to 3 percent at an annual rate by the middle of 2018. The unemployment rate declines modestly to about 7 percent by the end of the scenario period. Consumer prices begin to rise slowly in the first quarter of 2017 and inflation remains subdued through the end of the scenario window. Consumer price inflation reaches 1.75 percent at an annual rate in the first quarter of 2019.

Outside of the United States, the adverse scenario features moderate recessions in the euro area, the United Kingdom, and Japan, as well as below-trend growth in developing Asia. Weakness in global demand results in deflation across all of the foreign economies under consideration as well as a broad-based decline in commodity prices. Headline consumer prices decline modestly through the end of 2016 in the euro area and the United Kingdom and decline through the middle of 2017 in developing Asia. Japan experiences a sharper and more prolonged deflationary period with prices falling through the second quarter of 2018. The U.S. dollar appreciates relative to the currencies of the countries and country blocs under consideration, reflecting flight-to-safety capital flows; the dollar appreciates most strongly against the euro and the currencies of developing Asia.

The main difference relative to the 2015 adverse scenario is that this year's adverse scenario features a decline in the consumer price index (CPI)—i.e., deflation—in the United States. Deflation in the euro area and Japan was featured as a component of the 2015 adverse scenario, but that scenario also featured a considerable rise in headline U.S. inflation. In this year's adverse scenario, U.S. deflation implies substantially different paths of U.S. Treasury yields relative to the paths in last year's scenario. In this year's scenario, the yield curve is lower and initially flatter than under baseline assumptions but then steepens over the scenario period. In last year's scenario, by contrast, the yield curve was higher and flatter than under baseline assumptions.

## Global Market Shock and Counterparty Default Components

The Federal Reserve applied a global market shock to the trading portfolio of six BHCs with large trading and private equity exposures.<sup>15</sup> In addition, the

<sup>15</sup> The six BHCs subject to the global market shock are Bank of America Corporation; Citigroup Inc.; The Goldman Sachs

Federal Reserve applied a counterparty default component, which assumes the default of a BHC's largest counterparty under the global market shock, to the same six BHCs and two other BHCs with substantial trading, processing, or custodial operations.<sup>16</sup> These components are an add-on to the macroeconomic conditions and financial market environment specified in the adverse and severely adverse scenarios.

The global market shock is a set of one-time, hypothetical shocks to a broad range of financial market risk factors. Generally, these shocks involve large and sudden changes in asset prices, interest rates, and spreads, reflecting general market dislocation and heightened uncertainty.<sup>17</sup> The Federal Reserve published the global market shock for the adverse and severely adverse scenarios on February 4, 2016; the as-of date for the global market shock and the counterparty default is January 4, 2016.

The severely adverse scenario's global market shock is designed around three main elements: a sudden sharp increase in general risk premiums and credit risk; significant market illiquidity; and the distress of one or more large entities that rapidly sell a variety of assets into an already fragile market. Liquidity deterioration is most severe in those asset markets that are typically less liquid, such as corporate debt and private equity markets, and is less pronounced in those markets that are typically more liquid, such as publicly traded equity and U.S. Treasury markets. Markets facing a significant deterioration in liquidity experience conditions that are generally comparable to the peak-to-trough changes in asset valuations during the 2007–09 period. The severity of deterioration reflects the market conditions that could occur in the event of a significant pullback in market liquidity in which market participants are less able to engage in market transactions that could offset and moderate the price dislocations. Declines in markets less affected by the deterioration in liquidity condi-

Group, Inc.; JPMorgan Chase & Co.; Morgan Stanley; and Wells Fargo & Co. See 12 CFR 252.54(b)(2).

<sup>16</sup> The eight BHCs subject to the counterparty default component are Bank of America Corporation; The Bank of New York Mellon Corporation; Citigroup Inc.; The Goldman Sachs Group, Inc.; JPMorgan Chase & Co.; Morgan Stanley; State Street Corporation; and Wells Fargo & Co. See 12 CFR 252.54(b)(2).

<sup>17</sup> See CCAR 2016: Severely Adverse Market Shocks at [www.federalreserve.gov/bankinfo/CCAR-2016-Severely-Adverse-Market-Shocks.xlsx](http://www.federalreserve.gov/bankinfo/CCAR-2016-Severely-Adverse-Market-Shocks.xlsx), and CCAR 2016: Adverse Market Shocks at [www.federalreserve.gov/bankinfo/CCAR-2016-Adverse-Market-Shocks.xlsx](http://www.federalreserve.gov/bankinfo/CCAR-2016-Adverse-Market-Shocks.xlsx).



tions are generally comparable to those experienced in the second half of 2008.

Worsening liquidity also leads prices of related assets that would ordinarily be expected to move together to diverge markedly. In particular, the valuation of certain cash market securities and their derivative counterparts—so-called basis spreads—fail to move together because the normal market mechanics that would ordinarily result in small pricing differentials are impeded by a lack of market liquidity. Notably, option-adjusted spreads on agency mortgage-backed securities (MBS) increase significantly. Illiquidity-driven dislocations between the cash and to-be-announced (TBA) forward markets result in larger increases in the option-adjusted spreads on securities than in the TBA market. Similarly, relationships between the prices of other financial assets that would normally be expected to move together come under pressure and are weakened.

Globally, government bond yield curves undergo marked shifts in level and shape due to market participants' increased risk aversion. The flight-to-quality and lack of liquidity in affected markets pushes risk-free rates down across the term structure in the United States, with some short-term rates dropping below zero. The yield curves for government bonds flatten or invert across Europe and Asia while volatility increases across the term structure. The potential for a prolonged and more acute recession in Europe drives up sovereign credit spreads in the euro zone periphery in a manner generally consistent with the experience of 2011. Emerging market countries with deteriorating economic and fiscal accounts would also experience a sharp increase in sovereign spreads.

The major differences relative to the 2015 severely adverse scenario include (1) a larger widening in credit spreads for municipal, sovereign, and advanced economies' corporate products; (2) generally, greater declines in the value of private equity investments, recently issued securitized products, and non-agency residential MBS; (3) a more severe widening in basis spreads between closely related assets such as agency

MBS and TBA forwards as well as corporate bonds and credit default swaps; and (4) a general decline in U.S. Treasury rates, resulting in negative short-term rates, while short-term government rates in Europe rise to positive or slightly negative levels, and Asian government rates across the term structure flatten or invert. These differences are intended to reflect the result of a more significant drop in liquidity than was assumed in the 2015 severely adverse scenario.

The global market shock component for the adverse scenario simulates an extended low-growth environment and muted market volatility across most asset classes and term structures. Domestic interest rates move lower, particularly for longer-maturity securities with lower volatility. Due to reduced demand, global commodity prices decline moderately. MBS and credit spreads widen moderately. Internationally, yield curves move lower and flatten, while sovereign credit spreads widen moderately. Select currency markets also experience small flight-to-quality moves. Equity markets experience a mild correction with a measured increase in volatility.

The major difference relative to the 2015 adverse scenario is the addition of elements that are distinct from and not mechanically linked to the severely adverse scenario. In particular, the 2016 adverse scenario includes (1) more muted changes in price, spread, and volatility levels across most markets; and (2) a general decline in U.S. Treasury rates, with short-term government rates rising in most other countries and regions while long-term rates decline.

The 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. These BHCs were required to estimate and report the potential losses and related effects on capital associated with the instantaneous and unexpected default of the counterparty that would generate the largest losses across their derivatives and securities financing activities, including securities lending, and repurchase or reverse repurchase agreement activities.



# Supervisory Stress Test Framework and Model Methodology

## Analytical Framework

The Federal Reserve estimated the effect of the supervisory scenarios on the regulatory capital ratios of the 33 BHCs participating in DFAST 2016 by projecting the balance sheet, RWAs, net income, and resulting capital for each BHC over a nine-quarter planning horizon, which for DFAST 2016 begins in the first quarter of 2016 and ends in the first quarter of 2018. Projected net income, adjusted for the effect of taxes, is combined with capital action assumptions to project changes in equity capital. The approach followed take into account U.S. generally accepted accounting principles (GAAP) and regulatory capital rules.<sup>18</sup> Figure 8 illustrates the framework used to calculate changes in net income and regulatory capital.

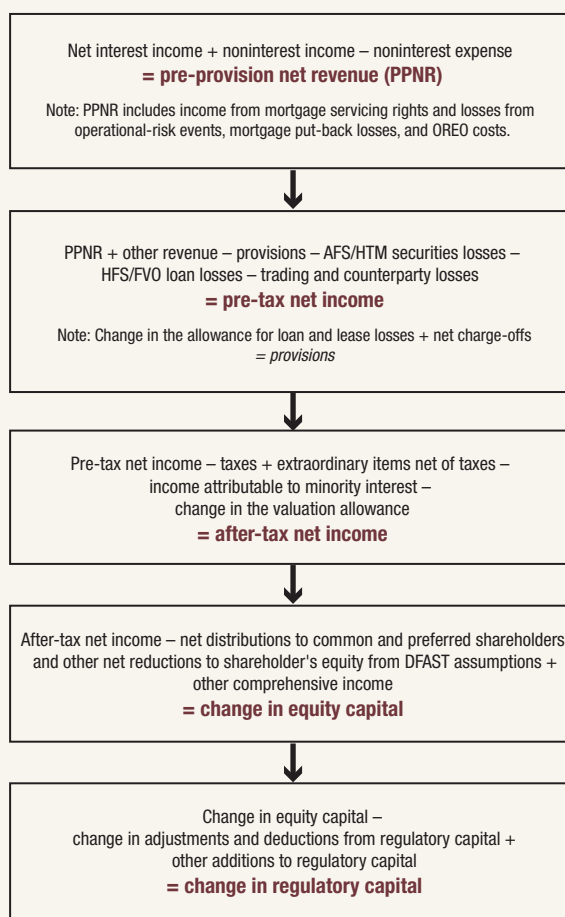
Projected net income for the 33 BHCs is generated from projections of revenue, expenses, and various types of losses and provisions that flow into pre-tax net income, including

- PPNR;
- loan losses and changes in the allowance for loan and lease losses (ALLL);
- losses on loans held for sale or for investment and measured under the fair-value option;
- other-than-temporary impairment (OTTI) losses on investment securities in the available-for-sale (AFS) and held-to-maturity (HTM) portfolios;
- losses on exposures resulting from a global market shock for BHCs with large trading and private equity exposures; and
- losses from the default of the largest counterparty of BHCs with substantial trading, processing, or custodial operations.

The projection of PPNR includes net interest income plus noninterest income minus noninterest expense.

<sup>18</sup> 12 CFR part 217.

**Figure 8. Projecting net income and regulatory capital**



Consistent with U.S. GAAP, the projection of PPNR incorporates projected losses generated by operational-risk events such as fraud, computer system or other operating disruptions, and litigation-related costs; mortgage repurchase related losses; and expenses related to the disposition of foreclosed properties (other real estate owned (OREO) expenses).

Provisions for loan and lease losses equal projected loan losses for the quarter plus the amount needed

for the ending ALLL to be at an appropriate level to account for projected future loan losses. The amount of provisions over and above loan losses may be negative—representing a drawdown of the ALLL (an ALLL release, increasing net income)—or positive—representing a need to build the ALLL (an additional provision, decreasing net income).

Because the loss projections follow U.S. GAAP and regulatory guidelines, they incorporate any differences in the way these guidelines recognize income and losses based on where assets are held on the BHCs' balance sheets. As a result, losses projected for similar or identical assets held in different portfolios can sometimes differ. For example, losses on loans held in the accrual portfolio equal credit losses due to failure to pay obligations (cash flow losses resulting in net charge-offs). For similar loans that are held for sale or held for investment and classified as fair value loans, projected losses represent the change in fair value of the underlying assets in the supervisory scenario.

Following this approach, changes in the fair value of AFS securities and OTTI losses on securities are separately projected over the nine-quarter planning horizon. Under U.S. GAAP, changes in the fair value of AFS securities are reflected in changes in accumulated other comprehensive income (AOCI) but do not flow through net income. In addition, if a security becomes OTTI, all or a portion of the difference between the fair value and amortized cost of the security must be recognized in earnings.<sup>19</sup> Consistent with U.S. GAAP, OTTI projections incorporate other-than-temporary differences between book value and fair value due to credit impairment but generally do not incorporate differences reflecting changes in liquidity or market conditions.

For the six BHCs subject to the global market shock, the losses on trading and private equity positions as well as the credit valuation adjustment are projected assuming an instantaneous re-pricing of these positions under the global market shock (see [Global Market Shock and Counterparty Default Components](#)). Losses from the global market shock are assumed to occur in the first quarter of the planning horizon. No subsequent recoveries on these positions are assumed, nor are there offsetting changes such as reductions in compensation or other expenses in reaction to the global market shock. In addition,

<sup>19</sup> A security is considered impaired when the fair value of the security falls below its amortized cost.

incremental losses from potential defaults of obligors underlying BHCs' trading positions are projected over the planning horizon.

For the eight BHCs subject to the counterparty default component, the losses associated with the instantaneous and unexpected default of the largest counterparty across derivatives and securities financing transaction (SFT) activities are projected. These losses are assumed to occur in the first quarter of the planning horizon.

Over the planning horizon, the Federal Reserve projects quarter-end amounts for the components of the balance sheet. These projections are made under the assumption that BHCs maintain their willingness to lend subject to the demand characteristics embedded in the scenario. BHCs are assumed to use lending standards in line with their long-run behavior. Any new balances implied by these projections are assumed to have the same risk characteristics as those held by the BHC at the start of the planning horizon except for loan age. Where applicable, new loans are assumed to be current, and BHCs are assumed not to originate types of loans that are no longer allowed under various regulations. The Federal Reserve also incorporates material changes in a BHC's business plan, such as a planned merger, acquisition, consolidation, or divestiture.<sup>20</sup> Only divestitures that had been completed or contractually agreed to prior to April 5, 2016, are incorporated. Once adjusted, assets are assumed to grow at the same rate as the pre-adjusted balance sheet.

## Modeling Approach

The Federal Reserve's projections of revenue, expenses, and various types of losses and provisions that flow into pre-tax net income are based on data provided by the 33 BHCs participating in DFAST 2016 and on models developed or selected by Federal Reserve staff and evaluated by an independent team of Federal Reserve model reviewers. The models are intended to capture how the balance sheet, RWAs, and net income of each BHC would be affected by the macroeconomic and financial conditions described in the supervisory scenarios, given the characteristics of the BHCs' loans and securities portfolios; trading, private equity, and counterparty

<sup>20</sup> The inclusion of the effects of such expected changes to a BHC's business plan does not—and is not intended to—express a view on the merits of such proposals and is not an approval or non-objection to such plans.

exposures from derivatives and SFTs; business activities; and other relevant factors.<sup>21</sup>

Detail of model-specific methodology is provided in [appendix B](#).

The Federal Reserve's approach to model design reflects the desire to produce supervisory stress test projections that

- are based on the same set of models and assumptions across BHCs;
- reflect an independent supervisory perspective;
- are forward-looking and may incorporate outcomes outside of historical experience; and
- are appropriately conservative and consistent with the purpose of a stress testing exercise.

With these objectives in mind, the models were developed using multiple data sources, including pooled historical data from financial institutions. The estimated model parameters are the same for all BHCs and reflect the industrywide, portfolio-specific, and instrument-specific response to variation in the macroeconomic and financial market variables. This industrywide approach reflects both the challenge in estimating separate, statistically robust models for each of the 33 BHCs and the desire of the Federal Reserve not to assume that historical BHC-specific results will prevail in the future. This means that the projections made by the Federal Reserve will not necessarily match similar projections made by individual BHCs.

The Federal Reserve deviated from the industrywide modeling approach only in a very limited number of cases in which the historical data used to estimate the model were not sufficiently granular to capture the impact of firm-specific risk factors. In these cases, BHC-specific indicator variables (fixed effects) were included in the models. Additionally, in some cases, the projections of certain types of losses use sensitivities generated by the BHCs from their internal pricing models.

<sup>21</sup> In some cases, the loss models estimated the effect of local-level macroeconomic data, which were projected based on their historical covariance with national variables included in the supervisory scenarios.

## Model Methodology and Validation

A large majority of the models used for the supervisory stress test were developed by Federal Reserve analysts and economists, but a few are third-party models.<sup>22</sup> Internally developed models draw on economic research and analysis as well as industry practice in modeling the effect of borrower, instrument, collateral characteristics, and macroeconomic factors on revenue, expenses, and losses. The approaches mostly build on work done by the Federal Reserve in previous stress tests. Models are refined for a variety of reasons, including to incorporate a greater range of data, to improve model stability, and to incorporate greater precision in calculation (see [box 1](#)). The performance of each model is assessed using a variety of metrics and benchmarks, including benchmark model results, where applicable. A central oversight group consisting of senior-level Federal Reserve experts closely scrutinized the models and assumptions used in the supervisory stress test and model outputs.

As in prior years, all models used for this year's supervisory stress test were also reviewed by an independent model validation team with a focus on the design, estimation, and implementation of the models. Model reviewers were Federal Reserve staff who are not involved in model development and who report to a different oversight group than model developers. Additionally, control procedures surrounding the model design and implementation processes were reviewed by process control experts.

Loan losses are estimated separately for different categories of loans, based on the type of obligor (e.g., consumer or commercial and industrial), collateral (e.g., residential real estate, commercial real estate), loan structure (e.g., revolving credit lines), and accounting treatment (accrual or fair value). These categories generally follow the classifications of the Consolidated Financial Statements for Holding Companies (FR Y-9C) regulatory report, though some loss projections are made for more granular loan categories.<sup>23</sup>

<sup>22</sup> A list of providers of the proprietary models and data used by the Federal Reserve in connection with DFAST 2016 is available in [appendix B](#).

<sup>23</sup> *Consolidated Financial Statements for Holding Companies* (FR Y-9C) is available on the Federal Reserve website at [www.federalreserve.gov](http://www.federalreserve.gov).

### Box 1. Model Changes for DFAST 2016

Each year, the Federal Reserve has refined elements of both the substance and process of the Dodd-Frank Act supervisory stress tests, including the continued development and enhancement of independent supervisory models. Reasons for revisions to the Federal Reserve's supervisory stress test models may include advances in modeling techniques, enhancements in response to model validation findings, incorporation of richer and more detailed data, and identification of more stable models or models with improved performance, particularly under adverse economic conditions.

In 2016, the Federal Reserve did not introduce significant changes to its modeling framework, and, overall, revisions to most supervisory models were relatively incremental. Where appropriate, models have been re-estimated with more comprehensive data.

Changes to loan loss, mortgage repurchase, and securities models were generally modest and did not have a large net effect on aggregate estimates of total losses. The model used to estimate losses due to operational risk, the model used to estimate the path of market risk-weighted assets (MRWA), and the capital calculation underwent modifications that had a greater impact on aggregate results and on capital ratios for individual firms.

#### Operational Risk Model Enhancement

The projections of operational risk losses included in the estimates of PPNR include both historically

based loss estimates, based on an average of multiple approaches, and estimates of potential costs from unfavorable litigation outcomes. In DFAST 2015 and in prior years, the Federal Reserve projected operational risk losses using the average of three models—a historical simulation model, in which loss severity is drawn from historical realized loss data; a loss distribution approach model, in which loss severity is drawn from a parametric distribution fit into historical data; and a panel regression model, which relates operational risk losses to macroeconomic conditions.<sup>1</sup> For DFAST 2016, the Federal Reserve used an average of the historical simulation and panel regression models to project operational risk losses.

Additionally, the historical simulation model underwent two main modifications. Projections for each BHC incorporated large historical losses (in terms of severity and frequency) observed across all BHCs, scaled to firm size, rather than an individual firm's own historical data. Additionally, projections of losses from the historical simulation model were set

*(continued on next page)*

<sup>1</sup> For more detail on the supervisory models used in DFAST 2015, see Appendix B of Board of Governors of the Federal Reserve System (2015), "Dodd-Frank Act Stress Test 2015: Supervisory Stress Test Methodology and Results."

Two general approaches are taken to model losses on the accrual loan portfolio. In the first approach, the models estimate expected losses under the macroeconomic scenario. These models generally involve projections of the probability of default, loss given default, and exposure at default for each loan or segment of loans in the portfolio, given conditions in the scenario. In the second approach, the models capture the historical behavior of net charge-offs relative to changes in macroeconomic and financial market variables.

Accrual loan losses are projected using detailed loan information, including borrower characteristics, collateral characteristics, characteristics of the loans or credit facilities, amounts outstanding and yet to be drawn down (for credit lines), payment history, and current payment status.

Data are collected on individual loans or credit facilities for wholesale loan, domestic retail credit card,

and residential mortgage portfolios. For other domestic and international retail loans, the data are collected based on segments of the portfolio (e.g., segments defined by borrower credit score, geographic location, and loan-to-value (LTV) ratio).

Losses on retail loans for which a BHC chose the fair-value option accounting treatment and loans carried at the lower of cost or market value (i.e., loans held for sale and held for investment) are estimated over the nine quarters of the planning horizon using a duration-based approach. Losses on wholesale loans held for sale or measured under the fair-value option are estimated by revaluing each loan or commitment each quarter of the planning horizon.

Losses on securities held in the AFS and HTM portfolios are estimated using models that incorporate other-than-temporary differences between amortized cost and fair market value due to credit impairment but generally do not incorporate differences reflecting

### Box 1. Model Changes for DFAST 2016 (continued)

at percentiles of the loss distribution that correspond to the severity of the supervisory scenarios.<sup>2</sup>

Collectively, these changes are expected to improve model stability and reduce year-over-year variation in projected operational risk losses. In the aggregate, these changes led to a moderate increase in operational risk losses, excluding estimates of costs related to unfavorable litigation outcomes, as a percentage of risk-weighted assets, and resulted in higher projected losses for firms that have reported fewer tail events historically but are still vulnerable to such loss events.

#### MRWA Model Enhancement

The models used to estimate several components of MRWA were modified in order to better differentiate the sensitivity of each component to scenario variables and to align the estimation more closely to the market risk rule in the Board's Regulation Q.<sup>3</sup> With the modifications, the estimates of the incremental risk charge and comprehensive risk measure components of MRWA move together with the projected volatility in the credit market.

<sup>2</sup> The percentile for the severely adverse scenario corresponds to the frequency of severe recessions over a 60-year historical span.

<sup>3</sup> See 12 CFR part 217, subpart F.

These changes, before accounting for new data and scenario, led to a moderate decline in projected MRWAs in the aggregate, and resulted in lower MRWAs for firms with more incremental risk charge, and higher MRWAs for firms with more comprehensive risk measure.

#### Supervisory Capital Calculation Enhancement

The Federal Reserve has made several changes to the supervisory capital calculation to improve precision. The main model enhancements include:

- Incorporating greater precision in the adjustments to the regulatory capital ratio denominators.
- Modifying assumptions regarding the relationship between mortgage servicing assets (MSAs) and associated deferred tax liabilities (DTLs).

Large balances of items that are fully deducted from regulatory capital, particularly goodwill, resulted in lower regulatory capital ratios due to this calculation change. The change in assumption underlying the relationship between MSAs and associated DTLs in the capital calculation resulted in higher capital ratios for firms with MSAs. The impact of these enhancements varies across BHCs depending on balances of items fully deducted from regulatory capital and the amount of MSAs held. The enhancements can result in higher or lower capital ratios, depending on the particular combination of such factors.

changes in liquidity or market conditions. Some securities, including U.S. Treasury and U.S. government agency obligations and U.S. government agency mortgage-backed securities, are assumed not to be at risk for the kind of credit impairment that results in OTTI charges. For securitized obligations, models estimate delinquency, default, severity, and prepayment on the underlying pool of collateral. OTTI on direct obligations such as corporate bonds is based on an assessment of the probability of default or severe credit deterioration of the security issuer or group of issuers over the planning horizon. The models use securities data collected at the individual security (CUSIP) level, including the amortized cost, market value, and any OTTI taken on the security to date.

Losses related to the global market shock and the counterparty default components are estimated based on BHC-estimated sensitivities to various market risk factors, market values, and revaluations of

counterparty exposures and credit valuation adjustment under the global market shock.

PPNR is projected using a series of models that relate the components of a BHC's revenues and non-credit-related expenses, expressed as a share of relevant asset or liability balances, to BHC characteristics and to macroeconomic variables. Most components are projected using data on historical revenues and operating and other non-credit-related expenses reported on the FR Y-9C report. Separate data are collected about mortgage loans that were sold or securitized but expose a BHC to potential put-back risk and the BHCs' historical losses related to operational-risk events, which are modeled separately from other components of PPNR.

The balance sheet projections are derived using a common framework for determining the effect of the scenarios on balance sheet growth, and, as noted, incorporate assumptions about credit supply that

limit aggregate credit contraction. These sets of projections are based on historical data from the Federal Reserve's *Financial Accounts of the United States* (Z.1) statistical release, which is a quarterly publication by the Federal Reserve of national flow of funds, consolidated balance sheet information for each BHC, and additional data collected by the Federal Reserve.<sup>24</sup>

Once pre-tax net income is determined using the above components, a consistent tax rate is applied to calculate after-tax net income. After-tax net income also includes other tax effects, such as changes in the valuation allowance applied to deferred tax assets and BHC-reported information about extraordinary income items and income attributable to minority interests.

## Data Inputs

The models are developed and implemented with data collected by the Federal Reserve on regulatory reports as well as proprietary third-party industry data.

Certain projections rely on aggregate information from the *Financial Accounts of the United States* (Z.1) statistical release. Others rely on the FR Y-9C report, which contains consolidated income statement and balance sheet information for each BHC. Additionally, FR Y-9C includes off-balance sheet items and other supporting schedules, such as the components of RWAs and regulatory capital.

Most of the data used in the Federal Reserve's stress test projections are collected through the Capital Assessments and Stress Testing (FR Y-14A/Q/M) reports, which include a set of annual, quarterly, or monthly schedules.<sup>25</sup> These reports collect detailed data on PPNR, loans, securities, trading and counterparty risk, losses related to operational-risk events, and business plan changes. Each of the 33 BHCs participating in DFAST 2016 submitted data as of December 31, 2015, through the FR Y-14M and FR Y-14Q schedules in February, March, and April 2016. The same BHC submitted the FR Y-14A schedules, which also include projected data, on April 5, 2016.

<sup>24</sup> *Financial Accounts of the United States* (Z.1) is available on the Federal Reserve website at [www.federalreserve.gov/releases/z1/](http://www.federalreserve.gov/releases/z1/).

<sup>25</sup> The FR Y-14 schedules are available on the Federal Reserve website at [www.federalreserve.gov/apps/reportforms/default.aspx](http://www.federalreserve.gov/apps/reportforms/default.aspx).

BHCs were required to submit detailed loan and securities information for all material portfolios, where the portfolio is deemed to be "material" if the size of the portfolio exceeds either 5 percent of the BHC's tier 1 capital or \$5 billion. The portfolio categories are defined in the FR Y-14M and Y-14Q instructions. Each BHC has the option to either submit or not submit the relevant data schedule for a given portfolio that does not meet the materiality threshold (as defined in the FR Y-14Q and FR Y-14M instructions). If the BHC does not submit data on its immaterial portfolio(s), the Federal Reserve will assign a conservative loss rate (e.g., 75th percentile), based on the estimates for other BHCs. Otherwise, the Federal Reserve will estimate losses using data submitted by the BHC.

While BHCs are responsible for ensuring the completeness and accuracy of data reported on the FR Y-14, the Federal Reserve made considerable efforts to validate BHC-reported data and requested resubmissions of data where errors were identified. If data quality remained deficient after resubmissions, conservative assumptions were applied to a particular portfolio or specific data, depending on the severity of deficiencies. If the quality of a BHC's submitted data was deemed too deficient to produce a supervisory model estimate for a particular portfolio, the Federal Reserve assigned a high loss rate (e.g., 90th percentile) or a conservative PPNR rate (e.g., 10th percentile) to the portfolio balances based on supervisory projections of portfolio losses or PPNR estimated for other BHCs. If data that are direct inputs to supervisory models were missing or reported erroneously but the problem was isolated in such a way that the existing supervisory framework could still be used, a conservative value (e.g., 10th or 90th percentile) based on all available data reported by BHCs was assigned to the specific data. These assumptions are intended to reflect a conservative view of the risk characteristics of the portfolios given insufficient information to make more risk-sensitive projections.

## Capital Action Assumptions and Regulatory Capital Ratios

After-tax net income and AOCI are combined with prescribed capital actions to estimate components of regulatory capital. Changes in the regulatory capital components are the primary drivers in changes in capital levels and ratios over the planning horizon. In addition to the regulatory capital components, the



calculation of regulatory capital ratios accounts for taxes and items subject to adjustment or deduction in regulatory capital, limits the recognition of certain assets that are less loss-absorbing, and imposes other restrictions as specified in the Board's regulatory capital rules.

The Dodd-Frank Act company-run stress test rules prescribe consistent capital action assumptions for all BHCs.<sup>26</sup> In its supervisory stress tests, the Board generally followed these capital action assumptions. For the first quarter of the planning horizon, capital actions for each BHC are assumed to be the actual actions taken by the BHC during that quarter. Over the remaining eight quarters, common stock dividend payments are generally assumed to be the average of the first quarter of the planning horizon and the three preceding calendar quarters.<sup>27</sup> Also, BHCs are assumed to pay scheduled dividend, interest, or principal payments on any other capital instrument eligible for inclusion in the numerator of a regulatory capital ratio. However, repurchases of such capital instruments and issuance of stock are assumed to be

<sup>26</sup> 12 CFR 252.56(b).

<sup>27</sup> Additionally, common stock dividends attributable to issuances related to expensed employee compensation or in connection with a planned merger or acquisition are included to the extent that they are reflected in the BHC's pro forma balance sheet estimates. This assumption provides consistency with assumptions regarding issuance of common stock.

zero, except for issuance of common or preferred stock associated with expensed employee compensation or in connection with a planned merger or acquisition.

The four regulatory capital ratios in DFAST 2016 are common equity tier 1, tier 1 risk-based capital, total risk-based capital, and tier 1 leverage ratios. A BHC's regulatory capital ratios are calculated in accordance with the Board's regulatory capital rules using Federal Reserve projections of assets and RWAs.<sup>28</sup>

The denominator of each BHC's regulatory capital ratios, other than the tier 1 leverage ratio, was calculated using the standardized approach for calculating RWAs for each quarter of the planning horizon in accordance with the transition arrangements in the Board's capital rules.<sup>29</sup>

<sup>28</sup> See 12 CFR 252.44 and 252.42(m). The tier 1 common capital ratio requirement was introduced in 2009 as part of the Supervisory Capital Assessment Program to assess the level of high-quality, loss-absorbing capital held at the largest BHCs. At the time, the Board noted that it expected the tier 1 common capital ratio requirement to remain in force until the Board adopted a minimum common equity capital requirement. The Board proposed that the tier 1 common ratio be removed in light of the implementation of the minimum CET1 capital requirement, which became effective January 1, 2015. On November 25, 2015, the final rule removing the requirement for firms to calculate a tier 1 common ratio was approved. See 80 Fed. Reg. 75,419.

<sup>29</sup> See 12 CFR 252.42(m); 80 Fed. Reg. 75,419; 12 CFR part 217, subpart G.

**Table 1. Applicable capital ratios and calculations in the 2016 Dodd-Frank Act stress tests**

Capital ratio	Aspect of ratio	Calculation
<b>BHCs</b>		
Common equity tier 1 ratio	Capital in numerator	Revised capital framework
	Denominator	Standardized approach RWAs
Tier 1 ratio	Capital in numerator	Revised capital framework
	Denominator	Standardized approach RWAs
Total capital ratio	Capital in numerator	Revised capital framework
	Denominator	Standardized approach RWAs
Tier 1 leverage ratio	Capital in numerator	Revised capital framework
	Denominator	Average assets



# Supervisory Stress Test Results

This section describes the Federal Reserve's projections of RWAs, losses, revenues, expenses, and capital positions for the 33 BHCs participating in DFAST 2016 under the severely adverse and adverse scenarios. Results are presented both in the aggregate for the 33 BHCs and for individual BHCs. The aggregate results provide a sense of the stringency of the adverse and severely adverse scenario projections and the sensitivities of losses, revenues, and capital at these BHCs as a group to the stressed economic and financial market conditions contained in those scenarios. The range of results across individual BHCs reflects differences in business focus, asset composition, revenue and expense sources, and portfolio risk characteristics. The comprehensive results for individual BHCs are reported in [appendix C](#).

## Severely Adverse Scenario

### Stressed Regulatory Capital Ratios and Risk-Weighted Assets

The projections suggest declines in capital ratios for all the BHCs under the severely adverse scenario. In the aggregate, each of the four capital ratios calculated in the fourth quarter of 2015 declines over the course of the planning horizon, with first-quarter 2018 levels ranging from 2.6 percentage points to 3.9 percentage points lower than at the start of the planning horizon (see [table 2](#)).<sup>30</sup> [Table 3](#) presents these ratios for each of the 33 BHCs.

The changes in post-stress capital ratios vary considerably across BHCs (see [figure 10](#)). The capital ratios for all firms decline for all firms over the course of the planning horizon. The post-stress capital ratios incorporate Federal Reserve projections of the levels of total average assets and RWAs over the planning horizon. Declines in capital ratios in part reflect an increase in projected RWAs over the planning hori-

zon. The increase in RWAs reflects projected asset and loan growth in the scenario and the impact of the scenario's assumed increase in equity market volatility on market risk-weighted assets (MRWAs) at firms with large trading portfolios.

### Projected Losses

The Federal Reserve projects that the 33 BHCs as a group would experience significant losses under the severely adverse scenario. In this scenario, losses are projected to be \$526 billion for the 33 BHCs in the aggregate over the nine quarters of the planning horizon. These losses include

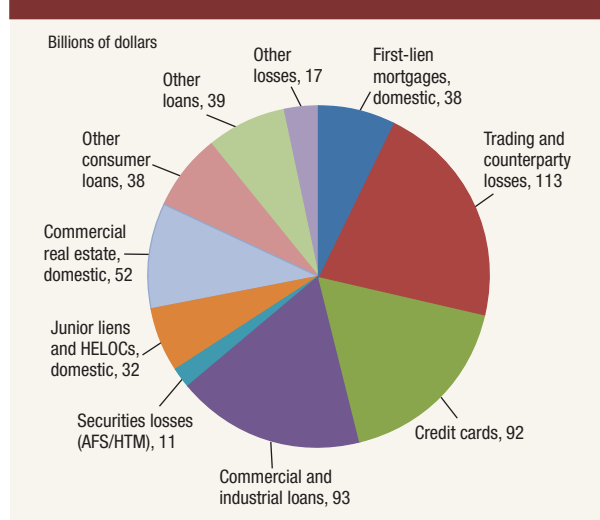
- \$385 billion in accrual loan portfolio losses,
- \$11 billion in OTTI and other realized securities losses,
- \$113 billion in trading and/or counterparty losses at the eight BHCs with substantial trading, processing, or custodial operations, and
- \$17 billion in additional losses from items such as loans booked under the fair-value option (see [table 2](#)).

The biggest sources of loss are accrual loan portfolios and trading and counterparty positions subject to the global market shock and counterparty default component. Together, these account for 95 percent of the projected losses for the 33 BHCs ([figure 9](#)).

### Loan Losses

Projected losses on consumer-related lending—domestic residential mortgages, credit cards, and other consumer loans—represent 52 percent of projected loan losses and 38 percent of total projected losses for the 33 BHCs (see [table 2](#)). This is consistent with the severely adverse scenario, which features high unemployment rates and significant declines in housing prices. Losses on commercial and industrial loans are the single largest category of losses at \$93 billion, representing 24 percent of total projected loan losses.

<sup>30</sup> In [table 2](#) the decline from starting to ending aggregate CET1 ratio is 2.5 percentage points. The difference is due to rounding.

**Figure 9. Projected losses in the severely adverse scenario**

This is followed by \$92 billion in credit card loans and \$70 billion of losses across domestic residential

mortgage loans, including both first liens and junior liens/home equity lines of credit.

For the 33 BHCs as a group, the nine-quarter cumulative loss rate for all accrual loan portfolios is 6.1 percent, where the loss rate is calculated as total projected loan losses over the nine quarters of the planning horizon divided by average loan balances over the horizon. Total loan loss rates vary significantly across BHCs, ranging between 1.9 percent and 12.4 percent across these institutions (see table 6 and figure 11).

The differences in total loan loss rates across the BHCs reflect differences in the risk characteristics of the portfolios held by each BHC with regard to both the type of lending of each portfolio and the loans within each portfolio. Loan portfolio composition matters because projected loss rates vary significantly by loan type. In the aggregate, nine-quarter cumulative loss rates vary between 3.2 percent on domestic first lien mortgages and 13.4 percent on credit cards,

## Box 2. Explanation of Changes in Results

Year-over-year changes in supervisory stress test results are reflective of several factors:

- changes in BHCs' starting capital positions;
- portfolio composition and risk characteristics;
- changing hypothetical scenarios; and
- model changes.

These factors can have positive or negative effects on the resulting post-stress capital ratios.

In the aggregate, DFAST firms have stronger balance sheets this year compared to DFAST 2015. They have increased the dollar amount of their capital, improved the credit quality of some of their material loan portfolios, and reduced illiquid securitization exposures on their trading book. In addition, mortgage-related litigation and settlements, which negatively affected some firms' earnings in the past,<sup>1</sup> have been significantly resolved as a result of recent settlements and court rulings on private-label mortgage securities.<sup>2</sup>

<sup>1</sup> Aggregate projected losses from operational risk events, expenses relating to mortgage put-backs, and expenses relating to the disposition of other real estate owned averaged more than \$130 billion over the last three DFAST cycles. This year, the aggregated projected losses from the same items totaled less than \$100 billion.

<sup>2</sup> ACE Securities Corp v. DB Structured Products, Inc., 25 N.Y. 3d 581 (2015).

Last year's severely adverse scenario assumed that corporate credit quality worsened even more than what would be expected in a severe recession. The assumption amplified the widening of corporate bond spreads, decline in equity prices, and increase in equity price volatility. By comparison, this year's severely adverse scenario includes a more severe recession than last year's scenario and also features negative short-term interest rates, which moderate the decline in equity prices and increase in market volatility relative to last year. Collectively, the change in the scenario tended to increase projections of net income in the aggregate, but its effects varied across DFAST firms. As compared to last year's severely adverse scenario, firms that are active in trading and market activities saw smaller losses in net income as a result of less severe stress in the equity markets, but firms more focused on traditional lending activities were more affected by negative short-term interest rates and greater stress in the real economy.

As in the past, the Federal Reserve made a number of enhancements in the models used for the supervisory stress test this year. Most model changes this year were incremental, but the Federal Reserve made more notable changes in three models—namely, the operational risk model, MRWA model, and capital calculation. These changes had moderate effects on the aggregate results but had varied effects on individual firms as described in box 1.

reflecting both differences in typical performance of these loans—some loan types tend to generate higher losses, though generally also higher revenue—and differences in the sensitivity of different types of lending to the severely adverse scenario. In particular, lending categories for which performance is sensitive to unemployment rates or housing prices may experience high stressed loss rates due to the considerable stress on these factors in the severely adverse scenario.

Projected loss rates on most loan categories show similar dispersion across BHCs (see [table 6](#) and [figures D.1](#) through [D.7](#)).<sup>31</sup> There are significant differences across BHCs in the projected loan loss rates for similar types of loans. For example, while the median projected loss rate on commercial real estate loans is 6.8 percent, the rates among BHCs with commercial real estate portfolios vary from a low of 3.1 percent to a high of 22.9 percent. For commercial and industrial loans, the range of projected loss rates is from 2.6 percent to 15.5 percent, with a median of 5.5 percent.

Differences in projected loss rates across BHCs primarily reflect differences in loan and borrower characteristics. In addition, some BHCs have taken write-downs on portfolios of impaired loans either purchased or acquired through mergers. Losses on these loans are projected using the same loss models used for loans of the same type, and the resulting loss projections are reduced by the amount of such write-downs. For these BHCs, projected loss rates will be lower than for BHCs that hold similar loans that have not been subject to purchase-related write-downs.

### Losses on Trading, Private Equity, SFT, and Derivatives Positions

The severely adverse scenario results include \$113 billion in trading losses from the global market shock at the six BHCs with large trading and private-equity exposures and losses from the counterparty default component at the eight BHCs with substantial trading, processing, or custodial operations. Trading and counterparty losses range between \$1.5 billion and \$33 billion across the eight BHCs (see [table 4](#)), with

the largest losses at those BHCs that were subject to both the global market shock and the counterparty default component. Even so, the relative size of losses across firms depends not on nominal portfolio size but rather on the specific risk characteristics of each BHC's trading positions, inclusive of hedges. Importantly, these projected losses are based on the trading positions and counterparty exposures held by these firms on a single date (January 4, 2016) and could have differed if they had been based on a different date.

### Projected Pre-provision Net Revenue and Net Income

In the aggregate, the 33 BHCs are projected to generate \$384 billion in PPNR cumulatively over the nine quarters of the planning horizon, equal to 2.5 percent of their combined average assets (see [table 2](#)). PPNR projections reflect low levels of net interest income because of the effect of negative short-term interest rates throughout the severely adverse scenario. The results also reflect low levels of noninterest income, consistent with the falling asset prices, rising equity market volatility, and sharply contracting economic activity in the severely adverse scenario. In addition, the PPNR projections incorporate expenses stemming from estimates of elevated levels of losses from operational-risk events such as fraud, employee lawsuits, litigation-related expenses, or computer system or other operating disruptions, and expenses related to put-backs of mortgages netted against actual mortgage put-back reserves reported by the BHCs.<sup>32</sup>

The ratio of projected cumulative PPNR to average assets varies across BHCs (see [figure 12](#)). A significant portion of this variation reflects differences in business focus across the institutions. For instance, the ratio of PPNR to assets tends to be higher at BHCs focusing on credit card lending, reflecting the higher net interest income that credit cards generally produce relative to other forms of lending.<sup>33</sup> Importantly, lower PPNR rates do not necessarily imply lower net income, since the same business focus and revenue risk characteristics determining differences in

<sup>31</sup> Losses are calculated based on the exposure at default, which includes both outstanding balances and any additional draw-down of the credit line that occurs prior to default, while loss rates are calculated as a percent of average outstanding balances over the planning horizon. See appendix B for more detail on the models used to project net income and stressed capital.

<sup>32</sup> These estimates are conditional on the hypothetical adverse and severely adverse scenario and on conservative assumptions. They are not a supervisory estimate of the BHCs' current or expected legal liability.

<sup>33</sup> As noted, credit card lending also tends to generate relatively high loss rates, so the higher PPNR rates at these BHCs do not necessarily indicate higher profitability.

PPNR across firms could also result in offsetting differences in projected losses across BHCs.

Projected PPNR and losses are the primary determinants of projected pre-tax net income. Table 4 presents projections of the components of pre-tax net income, including provisions into the ALLL and one-time income and expense and extraordinary items, under the severely adverse scenario for each of the 33 BHCs (see table 2 for aggregate). The projections are cumulative for the nine quarters of the planning horizon.

Of note, following U.S. GAAP, the net income projections incorporate loan losses indirectly through provisions, which equal projected loan losses plus the amount needed for the ALLL to be at an appropriate level at the end of each quarter. The \$439 billion in total provisions includes \$385 billion in net charge-offs, with the remainder being the reserve build. These amounts are cumulative over the planning horizon and mask variation in the ALLL during the course of the nine quarters. Specifically, the projected ALLL increases during the early quarters of the planning horizon, given the increased economic stress in the severely adverse scenario, and then declines as the economic stress abates.

The Federal Reserve's projections of pre-tax net income under the severely adverse scenario imply negative net income at most of the 33 BHCs individually and for the BHCs as a group over the nine-

quarter planning horizon. Projected net income before taxes (pre-tax net income) is an aggregate net loss of \$195 billion over the planning horizon for the 33 BHCs.

The ratio of pre-tax net income to average assets for each of the 33 BHCs ranges between -3.7 percent and 3.7 percent (see figure 13). Projected cumulative net income for most of the BHCs (28 of 33) is negative over the planning horizon. Differences across the firms reflect differences in the sensitivity of the various components of net income to the economic and financial market conditions in the supervisory scenarios. Projected net income for the eight BHCs subject to the global market shock and/or the counterparty default component includes the effect of those additional scenario components in the adverse and severely adverse scenarios, introducing some additional variation in projected net income between these eight BHCs and the other firms participating in DFAST 2016.

Final capital ratios for advanced approaches firms and other BHCs that opt into advanced approaches treatment for AOCI are also impacted by OCI (table 4), which is driven by unrealized gains and losses on securities in the supervisory stress test. Negative Treasury yields, which persists throughout the projection horizon in the severely adverse scenario, resulted in unrealized gains on securities for most of the affected BHCs over the planning horizon.

**Table 2. 33 participating bank holding companies**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	8.4	8.4
Tier 1 capital ratio	13.5	9.8	9.8
Total capital ratio	16.2	12.3	12.3
Tier 1 leverage ratio	9.2	6.7	6.7

Note: In accordance with the regulatory capital framework, all risk-based capital ratios are now calculated using standardized RWAs, which became effective on January 1, 2015. The transition had a one-time effect of reducing risk-based capital ratios in first quarter 2015. However, the aggregate common equity capital ratio of the 33 firms increased by 70 basis points between the first quarter of 2015 and the fourth quarter of 2015.

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	384.9	6.1
First-lien mortgages, domestic	38.1	3.2
Junior liens and HELOCs, domestic	32.2	8.1
Commercial and industrial <sup>2</sup>	93.1	6.3
Commercial real estate, domestic	51.9	7.0
Credit cards	92.3	13.4
Other consumer <sup>3</sup>	37.9	5.7
Other loans <sup>4</sup>	39.3	3.4

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	9,595.1	10,518.2

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1			
Item	Billions of dollars	Percent of average assets <sup>1</sup>	
Pre-provision net revenue <sup>2</sup>	383.6	2.5	
Other revenue <sup>3</sup>	1.6		
<i>less</i>			
Provisions	438.6		
Realized losses/gains on securities (AFS/HTM)	11.3		
Trading and counterparty losses <sup>4</sup>	113.0		
Other losses/gains <sup>5</sup>	17.3		
<i>equals</i>			
Net income before taxes	-195.0	-1.3	
<b>Memo items</b>			
Other comprehensive income <sup>6</sup>	13.6		
<i>Other effects on capital</i>		<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-37.0		-32.2

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table 3. Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1, under the severely adverse scenario: 33 participating bank holding companies**

Percent

Bank holding company	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio		
	Actual 2015:Q4	Ending	Minimum	Actual 2015:Q4	Ending	Minimum	Actual 2015:Q4	Ending	Minimum	Actual 2015:Q4	Ending	Minimum
Ally Financial Inc.	9.2	6.1	6.1	11.1	8.3	8.3	12.5	10.0	10.0	9.7	7.2	7.2
American Express Company	12.4	12.3	11.4	13.5	13.4	12.6	15.2	15.1	14.3	11.7	10.9	10.9
BancWest Corporation	12.3	8.6	8.6	12.3	8.6	8.6	14.6	11.0	11.0	10.1	7.0	7.0
Bank of America Corporation	11.6	8.1	8.1	12.9	9.6	9.6	15.7	12.5	12.5	8.6	6.4	6.4
The Bank of New York Mellon Corporation	11.5	11.2	10.5	13.1	13.1	12.2	13.5	13.6	12.7	6.0	5.9	5.5
BB&T Corporation	10.3	6.9	6.9	11.8	8.5	8.5	14.3	10.9	10.9	9.8	7.0	7.0
BBVA Compass Bancshares, Inc.	10.7	6.5	6.5	11.1	6.8	6.8	13.7	9.3	9.3	9.0	5.4	5.4
BMO Financial Corp.	11.9	5.9	5.9	11.9	6.4	6.4	14.9	8.7	8.7	9.3	4.9	4.9
Capital One Financial Corporation	11.1	8.2	8.2	12.4	9.4	9.4	14.6	11.4	11.4	10.6	8.0	8.0
Citigroup Inc.	15.3	9.2	9.2	15.5	10.5	10.3	18.5	13.5	13.4	10.2	7.0	6.9
Citizens Financial Group, Inc.	11.7	8.8	8.8	12.0	9.0	9.0	15.3	12.3	12.3	10.5	7.8	7.8
Comerica Incorporated	10.5	8.3	8.3	10.5	8.3	8.3	12.7	10.2	10.2	10.2	7.9	7.9
Deutsche Bank Trust Corporation	34.1	30.1	30.1	34.1	30.1	30.1	34.3	31.2	31.2	13.9	12.2	12.2
Discover Financial Services	13.9	12.4	11.9	14.7	13.1	12.6	16.5	14.5	14.1	12.9	11.4	11.3
Fifth Third Bancorp	9.8	6.8	6.8	10.9	7.8	7.8	14.1	11.1	11.1	9.5	6.8	6.8
The Goldman Sachs Group, Inc.	13.6	10.2	8.4	15.6	11.5	9.8	18.7	14.3	12.6	9.3	6.9	6.3
HSBC North America Holdings Inc.	15.7	9.1	9.1	17.3	11.0	11.0	22.6	15.2	15.2	10.0	6.2	6.2
Huntington Bancshares Incorporated	9.8	5.0	5.0	10.5	6.3	6.3	12.6	8.6	8.6	8.8	5.0	5.0
JPMorgan Chase & Co.	12.0	8.3	8.3	13.7	9.9	9.9	16.0	12.1	12.1	8.5	6.2	6.2
KeyCorp	10.9	6.4	6.4	11.4	6.8	6.8	13.0	8.9	8.9	10.7	6.0	6.0
M&T Bank Corporation	11.1	6.9	6.9	12.7	8.2	8.2	14.9	10.3	10.3	10.9	6.9	6.9
Morgan Stanley	16.4	10.0	9.1	18.4	11.6	10.2	22.0	14.6	13.5	8.3	5.4	4.9
MUFG Americas Holdings Corporation	13.6	10.1	10.1	13.6	10.1	10.1	15.6	12.2	12.2	11.4	7.0	7.0
Northern Trust Corporation	10.8	9.6	9.6	11.4	10.1	10.1	13.2	11.9	11.9	7.5	6.5	6.5
The PNC Financial Services Group, Inc.	10.6	7.6	7.6	12.0	8.7	8.7	14.6	11.0	11.0	10.2	7.4	7.4
Regions Financial Corporation	10.9	7.3	7.3	11.7	7.9	7.9	13.9	10.0	10.0	10.3	6.9	6.9
Santander Holdings USA, Inc.	12.0	11.8	11.8	13.5	12.7	12.7	15.3	14.2	14.2	11.6	10.0	10.0
State Street Corporation	13.0	9.6	9.6	15.9	12.8	12.8	18.2	14.7	14.7	6.9	5.4	5.4
SunTrust Banks, Inc.	10.0	7.5	7.5	10.8	8.2	8.2	12.5	9.9	9.9	9.7	7.4	7.4
TD Group US Holdings LLC	13.1	8.4	8.4	13.2	8.4	8.4	14.3	9.8	9.8	8.3	5.0	5.0
U.S. Bancorp	9.6	7.5	7.5	11.3	8.9	8.9	13.3	10.8	10.8	9.5	7.6	7.6
Wells Fargo & Company	11.1	7.2	7.2	12.6	8.7	8.7	15.8	11.7	11.7	9.4	6.6	6.6
Zions Bancorporation	12.2	6.6	6.6	14.1	8.3	8.3	16.1	10.1	10.1	11.3	6.5	6.5
33 participating bank holding companies	12.3	8.4	8.4	13.5	9.8	9.8	16.2	12.3	12.3	9.2	6.7	6.7

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

In accordance with the regulatory capital framework, all risk-based capital ratios are now calculated using standardized RWAs, which became effective on January 1, 2015. The transition had a one-time effect of reducing risk-based capital ratios in first quarter 2015. However, the aggregate common equity capital ratio of the 33 firms increased by 70 basis points between the first quarter of 2015 and the fourth quarter of 2015.



**Table 4. Projected losses, revenue, and net income before taxes through 2018:Q1 under the severely adverse scenario: 33 participating bank holding companies**

Billions of dollars

Bank holding company	Sum of revenues		Minus sum of provisions and losses				Equals	Memo items	Other effects on capital
	Pre-provision net revenue <sup>1</sup>	Other revenue <sup>2</sup>	Provisions	Realized losses/gains on securities (AFS/HTM)	Trading and counterparty losses <sup>3</sup>	Other losses/gains <sup>4</sup>	Net income before taxes	Other comprehensive income <sup>5</sup>	AOCI included in capital <sup>6</sup> (2018:Q1)
Ally Financial Inc.	4.8	0.0	7.4	0.5	0.0	0.0	-3.2	0.0	0.0
American Express Company	19.2	1.3	13.9	0.0	0.0	0.4	6.2	0.0	-2.5
BancWest Corporation	2.7	0.0	5.5	0.0	0.0	0.0	-2.8	0.0	0.0
Bank of America Corporation	45.7	0.0	59.2	0.7	20.0	2.2	-36.3	8.5	3.9
The Bank of New York Mellon Corporation	9.2	0.0	2.6	0.1	1.5	0.0	4.9	0.8	-1.8
BB&T Corporation	7.0	0.0	9.1	0.0	0.0	0.0	-2.2	0.0	0.0
BBVA Compass Bancshares, Inc.	1.1	0.0	3.8	0.0	0.0	0.0	-2.8	0.0	0.0
BMO Financial Corp.	0.9	0.0	4.9	0.0	0.0	0.0	-3.9	0.0	0.0
Capital One Financial Corporation	26.0	0.0	30.4	0.0	0.0	0.1	-4.6	0.5	-0.3
Citigroup Inc.	43.7	0.3	50.1	1.6	16.8	3.0	-27.6	2.6	-26.2
Citizens Financial Group, Inc.	3.4	0.0	5.7	0.1	0.0	0.1	-2.5	0.0	0.0
Comerica Incorporated	1.3	0.0	2.4	0.0	0.0	0.0	-1.1	0.0	0.0
Deutsche Bank Trust Corporation	0.5	0.0	1.0	0.0	0.0	0.0	-0.4	0.0	0.0
Discover Financial Services	13.0	0.0	11.3	0.0	0.0	0.0	1.7	0.0	0.0
Fifth Third Bancorp	4.0	0.0	6.0	0.0	0.0	0.0	-2.1	0.0	0.0
The Goldman Sachs Group, Inc.	12.1	0.0	5.7	0.0	18.0	3.9	-15.4	0.0	-0.7
HSBC North America Holdings Inc.	-1.2	0.0	5.8	0.0	0.0	1.7	-8.8	2.0	1.1
Huntington Bancshares Incorporated	2.2	0.0	3.7	0.1	0.0	0.0	-1.6	0.0	0.0
JPMorgan Chase & Co.	64.9	0.0	60.2	2.1	32.6	0.5	-30.5	-3.0	-2.7
KeyCorp	3.1	0.0	4.7	0.0	0.0	0.0	-1.7	0.0	0.0
M&T Bank Corporation	3.1	0.0	6.1	0.0	0.0	0.0	-2.9	0.0	0.0
Morgan Stanley	7.8	0.0	4.3	0.1	13.0	3.0	-12.5	1.1	-0.5
MUFG Americas Holdings Corporation	1.2	0.0	4.0	0.4	0.0	0.1	-3.3	0.0	0.0
Northern Trust Corporation	2.4	0.0	2.0	0.0	0.0	0.0	0.4	0.3	-0.1
The PNC Financial Services Group, Inc.	10.8	0.0	13.0	0.2	0.0	0.2	-2.6	0.7	0.4
Regions Financial Corporation	3.1	0.0	5.8	0.0	0.0	0.0	-2.8	0.0	0.0
Santander Holdings USA, Inc.	6.3	0.0	6.3	0.1	0.0	0.1	-0.2	0.0	0.0
State Street Corporation	2.9	0.0	0.4	0.4	1.5	0.0	0.6	-0.2	-1.6
SunTrust Banks, Inc.	5.1	0.0	7.1	0.0	0.0	0.4	-2.4	0.0	0.0
TD Group US Holdings LLC	4.3	0.0	11.1	0.1	0.0	0.0	-6.9	-0.2	-0.2
U.S. Bancorp	21.4	0.0	21.5	0.0	0.0	0.0	-0.2	1.1	0.2
Wells Fargo & Company	51.0	0.0	60.5	4.6	9.7	1.4	-25.2	-0.7	-1.0
Zions Bancorporation	0.7	0.0	3.0	0.0	0.0	0.0	-2.3	0.0	0.0
33 participating bank holding companies	383.6	1.6	438.6	11.3	113.0	17.3	-195.0	13.6	-32.2

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. Estimates may not sum precisely due to rounding.

<sup>1</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned costs.

<sup>2</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

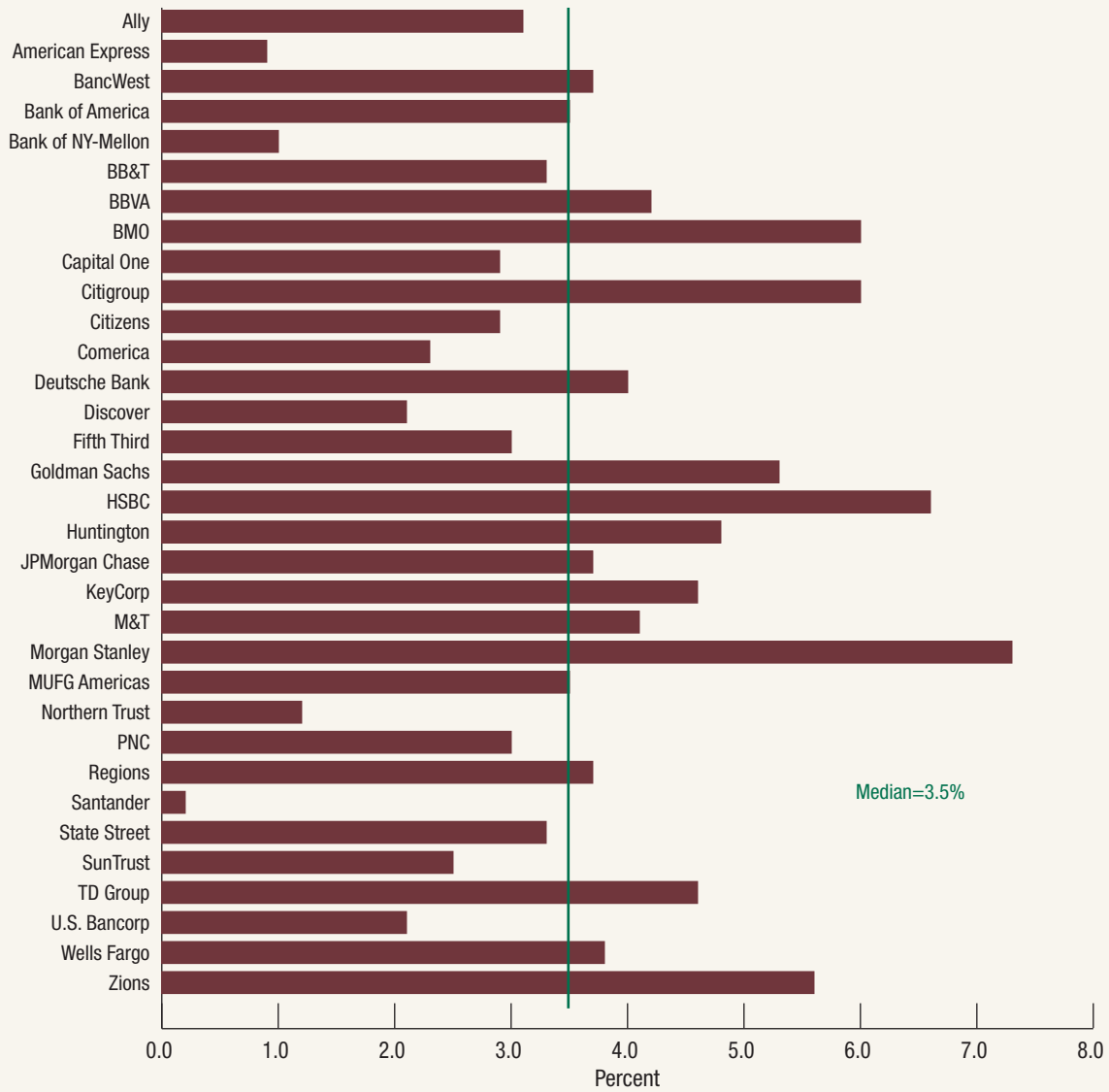
<sup>3</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>4</sup> 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.

<sup>5</sup> Other comprehensive income is only calculated for advanced approaches BHCs and other BHCs that opt into advanced approaches treatment for AOCI.

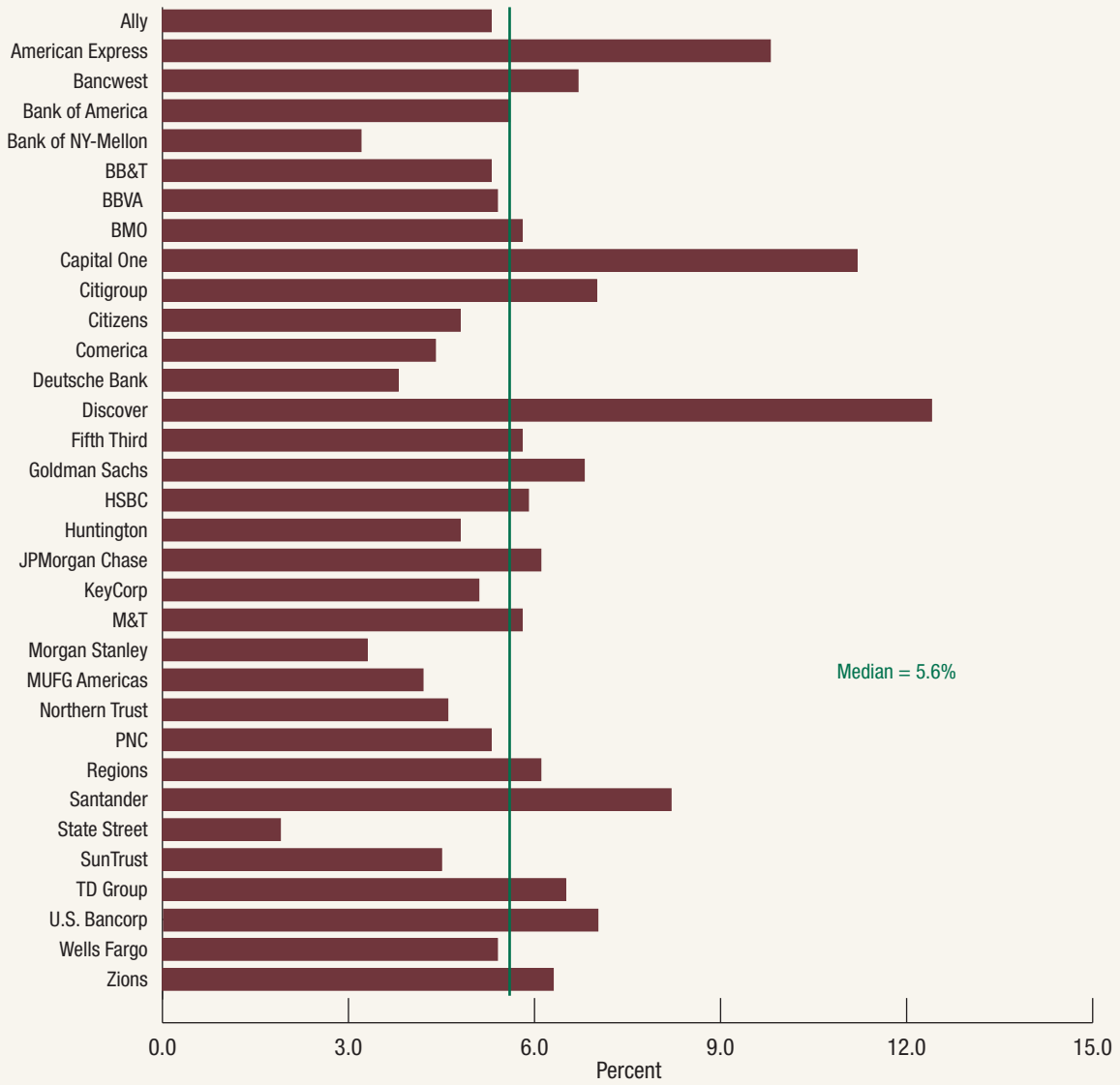
<sup>6</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. Those transitions are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Figure 10. Change from 2015:Q4 to minimum CET1 ratio in the severely adverse scenario**



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of risk-weighted assets. (The text of this note has been changed from “average” assets to “risk-weighted” assets.)

**Figure 11. Total loan loss rates in the severely adverse scenario**



Note: Estimates are for nine quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

**Table 5. Projected loan losses by type of loan for 2016:Q1-2018:Q1 under the severely adverse scenario: 33 participating bank holding companies**

Billions of dollars

Bank holding company	Loan losses	First lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial	Commercial real estate, domestic <sup>1</sup>	Credit cards	Other consumer <sup>2</sup>	Other loans <sup>3</sup>
Ally Financial Inc.	6.1	0.3	0.2	1.9	0.1	0.0	3.7	0.0
American Express Company	10.6	0.0	0.0	3.6	0.0	6.8	0.0	0.2
BancWest Corporation	4.5	0.4	0.2	1.4	1.2	0.1	0.9	0.4
Bank of America Corporation	53.7	7.5	10.1	11.9	5.7	11.9	1.8	4.8
The Bank of New York Mellon Corporation	2.1	0.2	0.0	0.1	0.2	0.0	0.3	1.3
BB&T Corporation	7.7	1.1	0.3	1.2	3.0	0.3	1.3	0.6
BBVA Compass Bancshares, Inc.	3.4	0.6	0.2	1.1	1.1	0.1	0.2	0.1
BMO Financial Corp.	4.0	0.3	0.5	1.8	0.6	0.0	0.1	0.6
Capital One Financial Corporation	26.7	0.3	0.1	2.7	1.3	18.0	3.5	0.7
Citigroup Inc.	45.8	2.2	2.3	8.8	1.2	21.1	3.6	6.5
Citizens Financial Group, Inc.	5.0	0.4	1.1	1.4	0.8	0.2	0.9	0.2
Comerica Incorporated	2.3	0.1	0.1	1.0	0.6	0.0	0.1	0.4
Deutsche Bank Trust Corporation	0.8	0.1	0.0	0.2	0.3	0.0	0.0	0.2
Discover Financial Services	9.3	0.0	0.0	0.0	0.0	7.6	1.6	0.0
Fifth Third Bancorp	5.5	0.6	0.4	2.1	1.3	0.4	0.4	0.3
The Goldman Sachs Group, Inc.	4.8	0.4	0.0	2.0	0.3	0.0	0.1	2.1
HSBC North America Holdings Inc.	5.4	2.1	0.6	1.5	0.7	0.1	0.0	0.5
Huntington Bancshares Incorporated	3.1	0.3	0.3	0.9	0.7	0.1	0.5	0.2
JPMorgan Chase & Co.	53.4	5.4	5.4	13.7	4.5	13.9	2.5	8.0
KeyCorp	4.1	0.3	0.4	1.4	0.9	0.1	0.5	0.4
M&T Bank Corporation	5.2	1.5	0.4	0.7	2.1	0.1	0.4	0.1
Morgan Stanley	3.3	0.4	0.0	1.1	0.5	0.0	0.2	1.2
MUFG Americas Holdings Corporation	3.4	0.6	0.1	1.2	0.9	0.0	0.1	0.4
Northern Trust Corporation	1.6	0.2	0.2	0.3	0.3	0.0	0.0	0.6
The PNC Financial Services Group, Inc.	11.4	0.9	1.5	4.7	2.4	0.5	0.8	0.6
Regions Financial Corporation	5.2	0.7	0.5	1.6	1.6	0.2	0.4	0.3
Santander Holdings USA, Inc.	7.1	0.3	0.2	0.8	1.0	0.1	4.4	0.3
State Street Corporation	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.2
SunTrust Banks, Inc.	6.4	1.0	0.8	2.2	1.0	0.2	1.1	0.2
TD Group US Holdings LLC	9.3	0.8	0.6	2.2	2.4	2.0	0.5	0.8
U.S. Bancorp	18.9	1.6	0.9	6.4	4.2	3.3	1.4	1.1
Wells Fargo & Company	51.8	7.3	4.7	12.0	10.0	5.4	6.5	5.8
Zions Bancorporation	2.6	0.1	0.1	1.1	1.2	0.0	0.1	0.1
33 participating bank holding companies	384.9	38.1	32.2	93.1	51.9	92.3	37.9	39.3

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected.

<sup>1</sup> Commercial and industrial loans include small and medium enterprise loans and corporate cards.<sup>2</sup> Other consumer loans include student loans and automobile loans.<sup>3</sup> Other loans include international real estate loans.

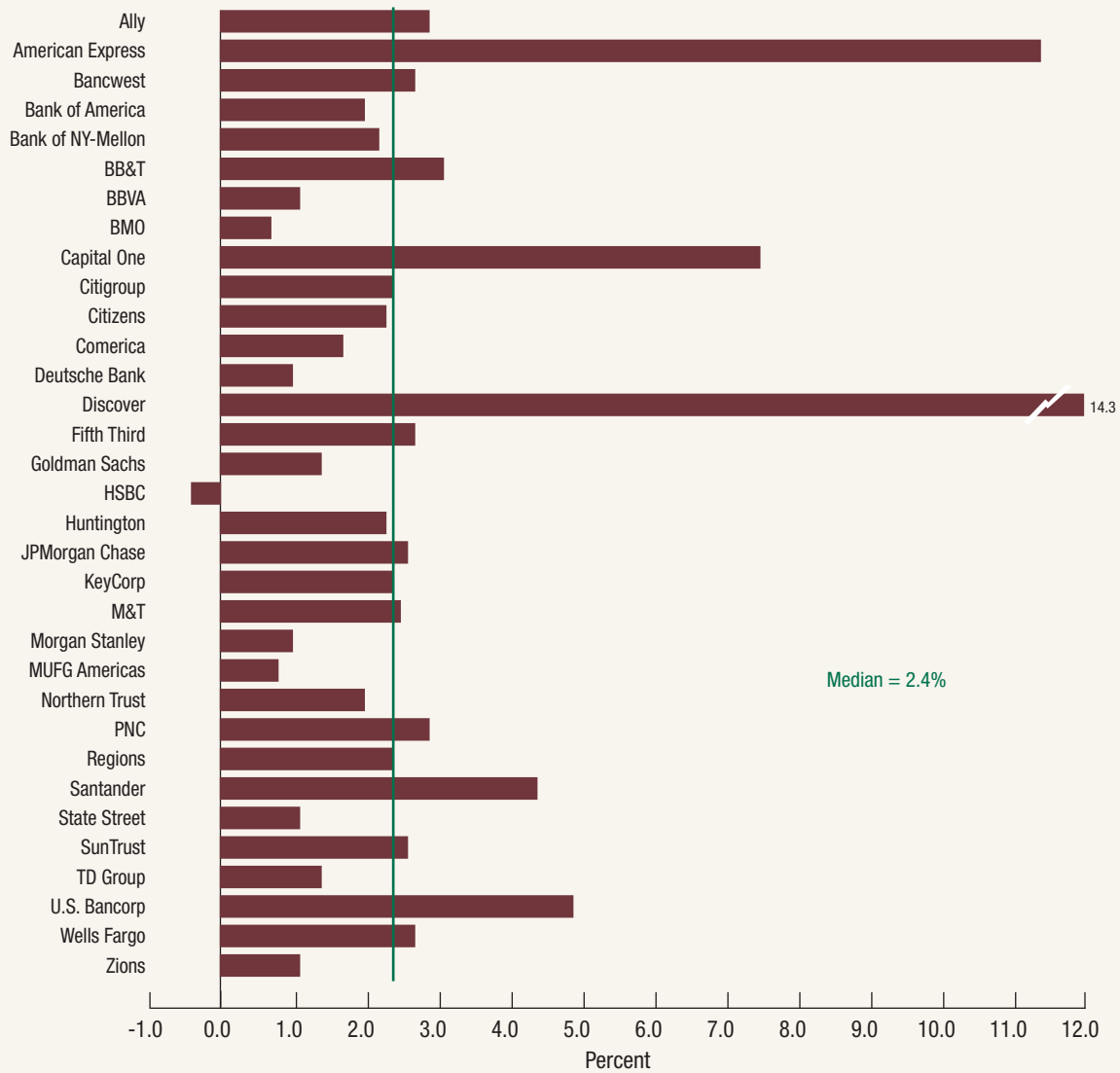
**Table 6. Projected loan losses by type of loan for 2016:Q1–2018:Q1 under the severely adverse: 33 participating bank holding companies**Percent of average balances<sup>1</sup>

Bank holding company	Loan losses	First lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial	Commercial real estate, domestic <sup>2</sup>	Credit cards	Other consumer <sup>3</sup>	Other loans <sup>4</sup>
Ally Financial Inc.	5.3	3.5	8.4	4.5	3.1	0.0	6.1	9.4
American Express Company	9.8	0.0	0.0	10.5	0.0	9.5	13.8	7.9
BancWest Corporation	6.7	4.9	4.2	9.0	7.1	18.2	5.7	6.3
Bank of America Corporation	5.6	3.8	13.0	5.0	7.7	11.5	2.2	2.6
The Bank of New York Mellon Corporation	3.2	2.3	8.5	2.6	8.6	0.0	11.2	2.6
BB&T Corporation	5.3	3.3	3.5	4.7	7.7	13.3	6.6	3.2
BBVA Compass Bancshares, Inc.	5.4	3.8	5.8	5.4	8.6	15.7	5.5	1.8
BMO Financial Corp.	5.8	3.5	10.8	6.9	7.3	11.0	2.1	4.3
Capital One Financial Corporation	11.2	1.1	6.7	9.8	4.4	19.3	8.1	4.0
Citigroup Inc.	7.0	2.8	9.3	5.5	9.9	14.0	11.4	3.3
Citizens Financial Group, Inc.	4.8	2.8	6.1	4.9	6.6	12.1	4.5	2.5
Comerica Incorporated	4.4	3.3	3.6	3.6	5.6	0.0	8.5	6.2
Deutsche Bank Trust Corporation	3.8	2.4	8.4	5.7	9.0	0.0	4.4	1.8
Discover Financial Services	12.4	4.6	14.2	15.5	22.9	12.8	10.8	7.2
Fifth Third Bancorp	5.8	4.3	5.4	5.7	12.2	16.2	3.0	3.0
The Goldman Sachs Group, Inc.	6.8	50.1	8.0	12.0	6.5	0.0	4.4	4.3
HSBC North America Holdings Inc.	5.9	7.9	16.3	4.0	6.3	15.0	8.0	3.7
Huntington Bancshares Incorporated	4.8	3.9	3.7	5.0	7.0	15.1	4.2	3.5
JPMorgan Chase & Co.	6.1	2.7	9.2	9.4	4.6	11.0	3.6	4.5
KeyCorp	5.1	4.5	4.3	5.2	6.1	12.5	7.4	2.9
M&T Bank Corporation	5.8	5.6	6.3	4.1	6.8	15.0	6.4	3.9
Morgan Stanley	3.3	1.7	8.0	8.5	5.5	0.0	0.9	3.0
MUFG Americas Holdings Corporation	4.2	2.0	5.3	5.5	5.5	0.0	15.8	4.3
Northern Trust Corporation	4.6	3.1	9.6	4.0	6.4	0.0	12.8	4.4
The PNC Financial Services Group, Inc.	5.3	3.4	6.6	6.7	6.8	12.2	3.8	1.7
Regions Financial Corporation	6.1	4.6	5.3	6.3	9.9	14.3	6.5	2.7
Santander Holdings USA, Inc.	8.2	3.8	3.8	3.9	5.2	15.6	16.5	4.2
State Street Corporation	1.9	0.0	0.0	5.4	5.7	0.0	0.6	1.2
SunTrust Banks, Inc.	4.5	3.9	5.6	4.7	5.4	14.0	4.9	1.7
TD Group US Holdings LLC	6.5	3.7	6.4	6.7	9.6	18.2	2.5	3.8
U.S. Bancorp	7.0	2.8	5.1	9.0	10.5	15.0	3.8	4.8
Wells Fargo & Company	5.4	2.8	6.5	6.3	7.4	15.2	6.7	3.4
Zions Bancorporation	6.3	1.1	3.4	8.5	6.7	15.0	10.9	5.5
33 participating bank holding companies	6.1	3.2	8.1	6.3	7.0	13.4	5.7	3.4

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected.

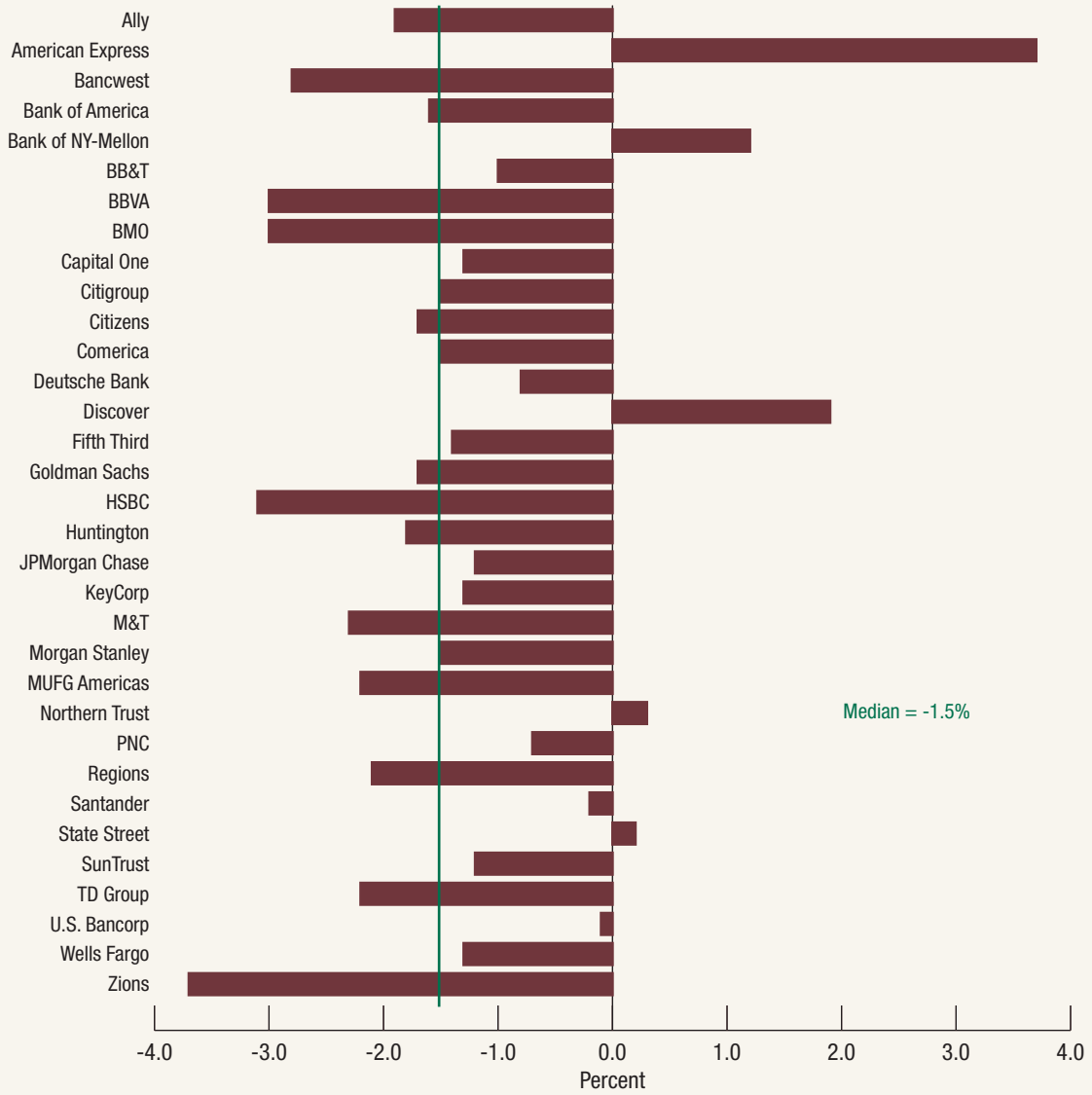
<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.<sup>2</sup> Commercial and industrial loans include small and medium enterprise loans and corporate cards.<sup>3</sup> Other consumer loans include student loans and automobile loans.<sup>4</sup> Other loans include international real estate loans.

Figure 12. PPNR rates in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average assets.

**Figure 13. Pre-tax net income rates in the severely adverse scenario**



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average assets.

## Adverse Scenario

### Stressed Capital Ratios and Risk-Weighted Assets

The adverse scenario projections suggest moderate declines in aggregate capital ratios for the 33 BHCs. The aggregate CET1 ratio is projected to fall 1.7 percentage points to its minimum over the planning horizon and to be 1.7 percentage points lower at the end of the planning horizon (see [table 7](#)).<sup>34</sup> In addition, at the end of the planning horizon, the tier 1 risk-based capital ratio and the total risk-based capital ratio are 1.7 and 2.2 percentage points lower than at the start of the planning horizon, respectively. The tier 1 leverage ratio is projected to decline 1.2 percentage points over the planning horizon.

The projected declines in post-stress capital ratios are smaller than those under the severely adverse scenario, reflecting the less severe macroeconomic conditions assumed in the adverse scenario. As compared to the severely adverse scenario, the adverse scenario projections imply higher aggregate net income driven by higher PPNR and lower losses. Offsetting somewhat the effect of aggregate higher net income on capital, the adverse scenario also features more robust projected balance sheet and risk-weighted asset growth than the severely adverse scenario, which on net tends to reduce post-stress capital ratios.

### Projected Losses

The Federal Reserve's projections suggest that the 33 BHCs as a group would face elevated losses under the adverse scenario, though not as large as the losses under the severely adverse scenario. In this scenario, total losses are projected to equal \$324 billion for the 33 BHCs over the nine-quarter planning horizon.

These losses include

- \$252 billion in accrual loan losses,
- \$5 billion in OTTI and other realized securities losses,
- \$53 billion in losses from the global market shock and the largest counterparty default components, and

<sup>34</sup> As stated in the Executive Summary, the actual decline in the aggregate CET1 ratio is 173 basis points. The amounts in [table 7](#) indicate a decline of 1.8 percentage points, which is due to rounding.

- \$14 billion in additional losses from items such as loans booked under the fair-value option.

These results are presented in aggregate ([table 7](#)) and individually for each of the 33 BHCs ([table 9](#) and [appendix C](#)). Aggregate loss amounts are lower than those projected under the severely adverse scenario, once again reflecting the relatively less stressful macroeconomic and financial market conditions assumed in the adverse scenario.

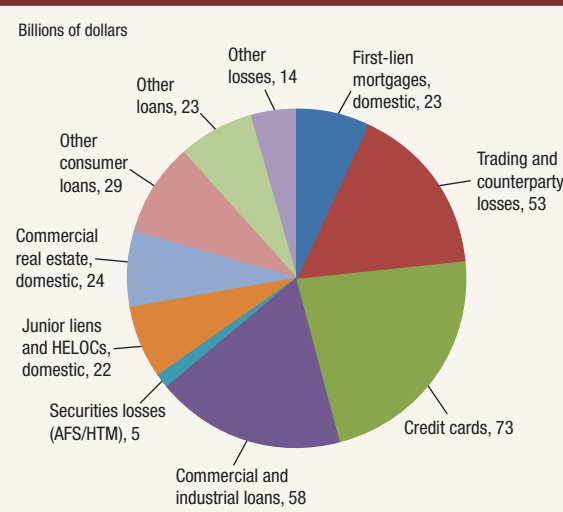
### Loan Losses

As in the severely adverse scenario, the accrual loan portfolio is the largest source of losses in the adverse scenario, accounting for \$252 billion of projected losses for the 33 BHCs. The lower peak unemployment rate and more moderate residential and commercial real estate price declines in the adverse scenario result in lower projected accrual loan losses on consumer and real estate-related loans relative to the severely adverse scenario. In aggregate, the nine-quarter loan loss rate of the 33 BHCs is 4.0 percent. As in the severely adverse scenario results, there is considerable diversity across firms in projected loan loss rates, both in the aggregate and by loan type (see [figures 16](#) and [D.8](#) to [D.14](#)).

### Losses on Trading, Private Equity, and Derivatives Positions

Projected losses resulting from the impact of the global market shock and the largest counterparty default on trading, private equity, and counterparty exposures for the eight BHCs with large trading, pro-

**Figure 14. Projected losses in the adverse scenario**





cessing, or custodial operations equal \$53 billion under the adverse scenario. These losses are slightly less than half those projected under the severely adverse scenario, reflecting the less severe market shocks assumed in the global market shock component of the adverse scenario.

### Projected Pre-provision Net Revenue and Net Income

Aggregate PPNR is projected to equal \$475 billion for the 33 BHCs under the adverse scenario, equal to 3.1 percent of average projected assets for these firms. Similar to the severely adverse scenario, projected PPNR declines largely due to the drop in long-term Treasury rates at the start of the projection horizon. However, projected operational risk and mortgage repurchase losses are lower compared to the severely adverse scenario, the latter being consistent with the adverse scenario's more moderate housing price decline. Projected ratios of PPNR to assets vary significantly across the 33 BHCs (see [figure 17](#)).

In the aggregate, the 33 BHCs are projected to have cumulative pre-tax net income of \$142 billion over the nine-quarter planning horizon under the adverse scenario. Twenty-four of the BHCs are projected to have positive cumulative pre-tax net income, though

21 firms experience at least one quarter of negative net income during the planning horizon. The higher net income, as compared to the severely adverse scenario projections, reflects the combination of higher projected PPNR and lower projected losses, especially on trading, private equity and counterparty positions, and on the accrual loan portfolio. The \$263 billion in total provisions reported in [table 7](#) includes \$252 billion in net charge-offs, with the remainder being the reserve build.

Aggregate pre-tax net income under the adverse scenario is positive, with a ratio of income to average assets of 0.9 percent. Projected nine-quarter return on assets under the adverse scenario ranges between -1.3 and 6.3 percent for the 33 BHCs (see [figure 18](#)).

Lower interest rates and wider credit spreads assumed in the scenario result in -\$15 billion of other comprehensive income over the nine quarters of the planning horizon for advanced approaches BHCs and other BHCs that opt into advanced approaches treatment for AOCI. Reflecting the gradual phasing-in of portions of AOCI in the revised regulatory capital framework -\$37 billion in AOCI is included in post-stress regulatory capital as of the first quarter of 2018.

**Table 7. 33 participating bank holding companies**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	10.5	10.5
Tier 1 capital ratio	13.5	11.8	11.8
Total capital ratio	16.2	14.0	14.0
Tier 1 leverage ratio	9.2	8.0	8.0

Note: In accordance with the regulatory capital framework, all risk-based capital ratios are now calculated using standardized RWAs, which became effective on January 1, 2015. The transition had a one-time effect of reducing risk-based capital ratios in first quarter 2015. However, the aggregate common equity capital ratio of the 33 firms increased by 70 basis points between the first quarter of 2015 and the fourth quarter of 2015.

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	252.0	4.0
First-lien mortgages, domestic	23.2	2.0
Junior liens and HELOCs, domestic	22.2	5.5
Commercial and industrial <sup>2</sup>	58.5	4.0
Commercial real estate, domestic	23.9	3.2
Credit cards	73.1	10.5
Other consumer <sup>3</sup>	28.6	4.3
Other loans <sup>4</sup>	22.6	1.9

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	9,595.1	10,673.1

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	474.8	3.1
Other revenue <sup>3</sup>	1.6	
<i>less</i>		
Provisions	262.6	
Realized losses/gains on securities (AFS/HTM)	5.2	
Trading and counterparty losses <sup>4</sup>	52.6	
Other losses/gains <sup>5</sup>	14.4	
<i>equals</i>		
Net income before taxes	141.6	0.9
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-14.6	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-37.0	-60.3

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table 8. Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1, under the adverse scenario: 33 participating bank holding companies**

Percent

Bank holding company	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio		
	Actual 2015:Q4	Ending	Minimum	Actual 2015:Q4	Ending	Minimum	Actual 2015:Q4	Ending	Minimum	Actual 2015:Q4	Ending	Minimum
Ally Financial Inc.	9.2	8.1	8.1	11.1	10.2	10.2	12.5	11.9	11.9	9.7	8.9	8.9
American Express Company	12.4	14.3	11.7	13.5	15.5	12.9	15.2	17.1	14.6	11.7	12.4	11.3
BancWest Corporation	12.3	11.2	11.2	12.3	11.2	11.2	14.6	13.6	13.6	10.1	9.1	9.1
Bank of America Corporation	11.6	10.5	10.5	12.9	12.0	12.0	15.7	14.3	14.3	8.6	8.0	8.0
The Bank of New York Mellon Corporation	11.5	12.4	11.3	13.1	14.3	12.8	13.5	14.6	13.2	6.0	6.3	5.8
BB&T Corporation	10.3	8.9	8.9	11.8	10.5	10.5	14.3	12.4	12.4	9.8	8.5	8.5
BBVA Compass Bancshares, Inc.	10.7	9.1	9.1	11.1	9.4	9.4	13.7	11.5	11.5	9.0	7.5	7.5
BMO Financial Corp.	11.9	8.5	8.5	11.9	8.9	8.9	14.9	11.1	11.1	9.3	6.8	6.8
Capital One Financial Corporation	11.1	10.0	9.8	12.4	11.2	11.0	14.6	13.1	13.1	10.6	9.5	9.5
Citigroup Inc.	15.3	11.3	11.3	15.5	12.6	12.6	18.5	15.2	15.2	10.2	8.3	8.3
Citizens Financial Group, Inc.	11.7	10.8	10.8	12.0	11.0	11.0	15.3	14.0	14.0	10.5	9.5	9.5
Comerica Incorporated	10.5	10.0	10.0	10.5	10.0	10.0	12.7	11.5	11.5	10.2	9.5	9.5
Deutsche Bank Trust Corporation	34.1	31.9	31.9	34.1	31.9	31.9	34.3	32.5	32.5	13.9	12.8	12.8
Discover Financial Services	13.9	14.4	12.9	14.7	15.0	13.7	16.5	16.5	15.4	12.9	13.0	12.3
Fifth Third Bancorp	9.8	9.0	9.0	10.9	9.9	9.9	14.1	12.7	12.7	9.5	8.6	8.6
The Goldman Sachs Group, Inc.	13.6	11.9	11.4	15.6	12.6	12.6	18.7	15.3	15.3	9.3	7.5	7.4
HSBC North America Holdings Inc.	15.7	10.2	10.2	17.3	12.0	12.0	22.6	15.3	15.3	10.0	6.8	6.8
Huntington Bancshares Incorporated	9.8	7.7	7.7	10.5	8.9	8.9	12.6	11.1	11.1	8.8	7.1	7.1
JPMorgan Chase & Co.	12.0	10.6	10.6	13.7	12.2	12.2	16.0	14.1	14.1	8.5	7.5	7.5
KeyCorp	10.9	8.8	8.8	11.4	9.2	9.2	13.0	11.0	11.0	10.7	8.1	8.1
M&T Bank Corporation	11.1	9.6	9.6	12.7	10.8	10.8	14.9	12.7	12.7	10.9	9.1	9.1
Morgan Stanley	16.4	12.8	12.7	18.4	14.5	14.3	22.0	17.4	17.4	8.3	6.5	6.5
MUFG Americas Holdings Corporation	13.6	12.5	12.5	13.6	12.5	12.5	15.6	13.9	13.9	11.4	8.7	8.7
Northern Trust Corporation	10.8	10.5	10.5	11.4	11.0	11.0	13.2	12.5	12.5	7.5	7.1	7.1
The PNC Financial Services Group, Inc.	10.6	9.2	9.2	12.0	10.3	10.3	14.6	12.1	12.1	10.2	8.7	8.7
Regions Financial Corporation	10.9	9.6	9.6	11.7	10.2	10.2	13.9	12.1	12.1	10.3	8.8	8.8
Santander Holdings USA, Inc.	12.0	13.8	12.2	13.5	14.8	13.4	15.3	16.3	15.1	11.6	11.6	11.3
State Street Corporation	13.0	10.6	10.6	15.9	13.7	13.7	18.2	15.6	15.6	6.9	5.7	5.7
SunTrust Banks, Inc.	10.0	9.2	9.2	10.8	9.9	9.9	12.5	11.3	11.3	9.7	8.8	8.8
TD Group US Holdings LLC	13.1	11.8	11.7	13.2	11.8	11.8	14.3	13.0	13.0	8.3	7.0	6.9
U.S. Bancorp	9.6	9.1	9.0	11.3	10.6	10.5	13.3	12.4	12.4	9.5	8.9	8.9
Wells Fargo & Company	11.1	9.1	9.1	12.6	10.6	10.6	15.8	13.2	13.2	9.4	8.0	8.0
Zions Bancorporation	12.2	10.0	10.0	14.1	11.7	11.7	16.1	13.2	13.2	11.3	9.2	9.2
33 participating bank holding companies	12.3	10.5	10.5	13.5	11.8	11.8	16.2	14.0	14.0	9.2	8.0	8.0

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

In accordance with the regulatory capital framework, all risk-based capital ratios are now calculated using standardized RWAs, which became effective on January 1, 2015. The transition had a one-time effect of reducing risk-based capital ratios in first quarter 2015. However, the aggregate common equity capital ratio of the 33 firms increased by 70 basis points between the first quarter of 2015 and the fourth quarter of 2015.

**Table 9. Projected losses, revenue, and net income before taxes through 2018:Q1 under the adverse scenario: 33 participating bank holding companies**

Billions of dollars

Bank holding company	Sum of revenues		Minus sum of provisions and losses				Equals	Memo items	Other effects on capital
	Pre-provision net revenue <sup>1</sup>	Other revenue <sup>2</sup>	Provisions	Realized losses/gains on securities (AFS/HTM)	Trading and counterparty losses <sup>3</sup>	Other losses/gains <sup>4</sup>	Net income before taxes	Other comprehensive income <sup>5</sup>	AOCI included in capital <sup>6</sup> (2018:Q1)
Ally Financial Inc.	5.4	0.0	4.9	0.3	0.0	0.0	0.1	0.0	0.0
American Express Company	20.1	1.3	10.4	0.0	0.0	0.2	10.8	0.0	-2.6
BancWest Corporation	3.0	0.0	3.1	0.0	0.0	0.0	-0.1	0.0	0.0
Bank of America Corporation	61.8	0.0	35.3	0.3	7.8	1.8	16.6	-0.9	-5.5
The Bank of New York Mellon Corporation	12.7	0.0	1.6	0.0	0.6	0.0	10.3	-0.3	-2.9
BB&T Corporation	8.6	0.0	5.0	0.0	0.0	0.0	3.6	0.0	0.0
BBVA Compass Bancshares, Inc.	1.6	0.0	2.0	0.0	0.0	0.0	-0.4	0.0	0.0
BMO Financial Corp.	1.5	0.0	3.0	0.0	0.0	0.0	-1.4	0.0	0.0
Capital One Financial Corporation	27.1	0.0	22.5	0.0	0.0	0.1	4.6	-0.1	-0.8
Citigroup Inc.	53.1	0.3	32.5	0.9	8.4	2.5	9.0	-3.2	-32.0
Citizens Financial Group, Inc.	4.2	0.0	3.4	0.0	0.0	0.0	0.8	0.0	0.0
Comerica Incorporated	1.9	0.0	1.0	0.0	0.0	0.0	0.8	0.0	0.0
Deutsche Bank Trust Corporation	0.7	0.0	0.5	0.0	0.0	0.0	0.2	0.0	0.0
Discover Financial Services	13.3	0.0	8.9	0.0	0.0	0.0	4.4	0.0	0.0
Fifth Third Bancorp	5.2	0.0	3.3	0.0	0.0	0.0	1.9	0.0	0.0
The Goldman Sachs Group, Inc.	16.0	0.0	3.3	0.0	10.1	3.1	-0.5	0.0	-0.7
HSBC North America Holdings Inc.	1.0	0.0	3.4	0.0	0.0	1.3	-3.7	0.1	-0.8
Huntington Bancshares Incorporated	2.8	0.0	2.3	0.0	0.0	0.0	0.4	0.0	0.0
JPMorgan Chase & Co.	78.8	0.0	34.3	0.9	13.7	0.4	29.5	-4.4	-4.2
KeyCorp	4.0	0.0	2.7	0.0	0.0	0.1	1.3	0.0	0.0
M&T Bank Corporation	4.0	0.0	3.3	0.0	0.0	0.0	0.6	0.0	0.0
Morgan Stanley	11.9	0.0	2.4	0.0	7.2	2.3	-0.1	-0.1	-1.8
MUFG Americas Holdings Corporation	1.9	0.0	1.7	0.2	0.0	0.1	-0.1	0.0	0.0
Northern Trust Corporation	3.2	0.0	1.0	0.0	0.0	0.0	2.2	0.0	-0.4
The PNC Financial Services Group, Inc.	13.4	0.0	7.2	0.1	0.0	0.2	5.9	-0.3	-0.6
Regions Financial Corporation	4.0	0.0	3.3	0.0	0.0	0.0	0.7	0.0	0.0
Santander Holdings USA, Inc.	6.9	0.0	3.3	0.0	0.0	0.1	3.5	0.0	0.0
State Street Corporation	4.9	0.0	0.3	0.2	0.7	0.0	3.7	-1.1	-2.6
SunTrust Banks, Inc.	6.9	0.0	4.0	0.0	0.0	0.4	2.6	0.0	0.0
TD Group US Holdings LLC	5.5	0.0	6.4	0.0	0.0	0.0	-1.0	-0.4	-0.4
U.S. Bancorp	24.6	0.0	12.5	0.0	0.0	0.0	12.0	-0.2	-1.1
Wells Fargo & Company	63.8	0.0	32.5	2.0	4.0	1.6	23.8	-3.7	-4.0
Zions Bancorporation	1.1	0.0	1.4	0.0	0.0	0.0	-0.4	0.0	0.0
33 participating bank holding companies	474.8	1.6	262.6	5.2	52.6	14.4	141.6	-14.6	-60.3

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. Estimates may not sum precisely due to rounding.

<sup>1</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned costs.

<sup>2</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

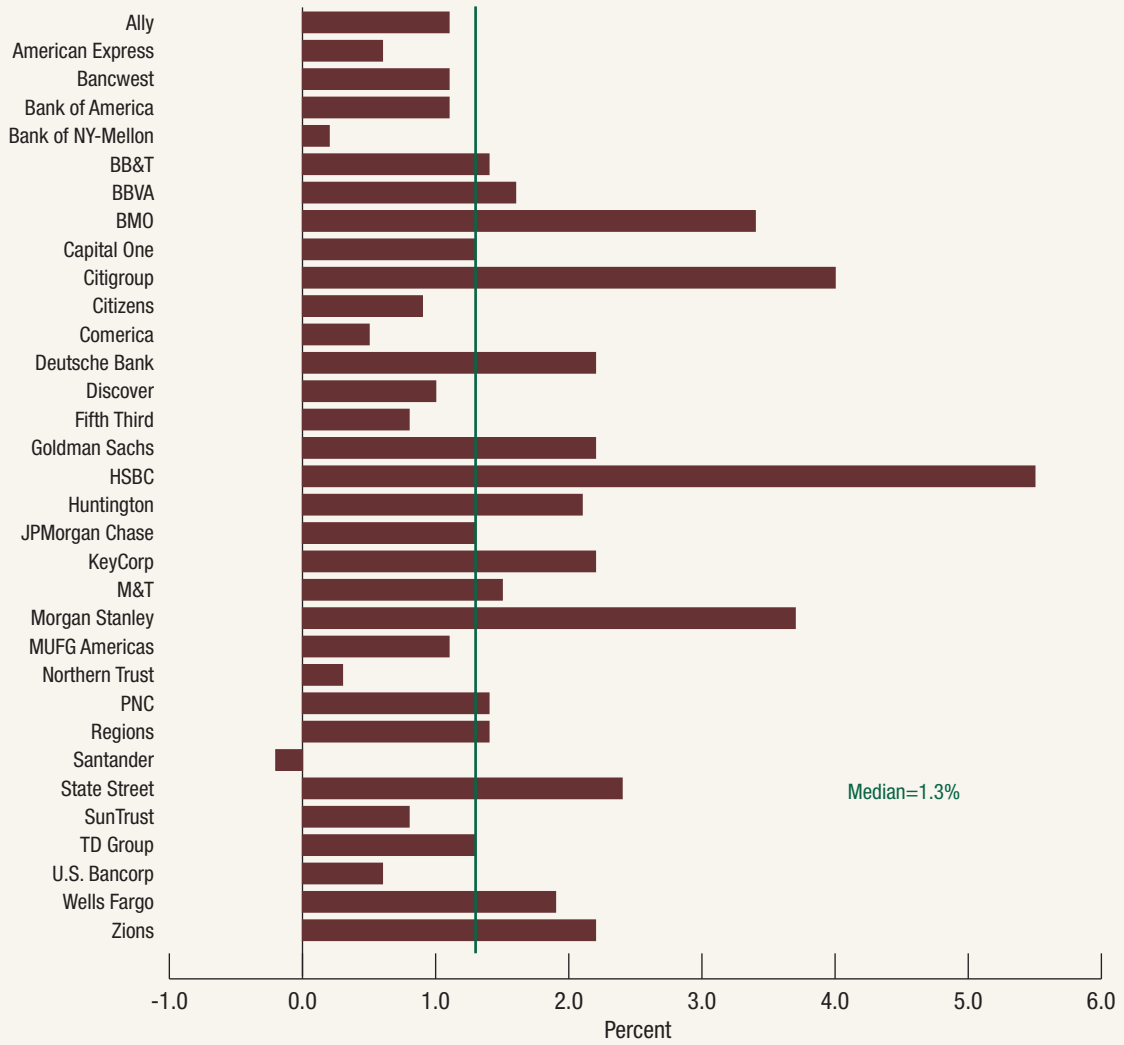
<sup>3</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>4</sup> 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.

<sup>5</sup> Other comprehensive income is only calculated for advanced approaches BHCs and other BHCs that opt into advanced approaches treatment for AOCI.

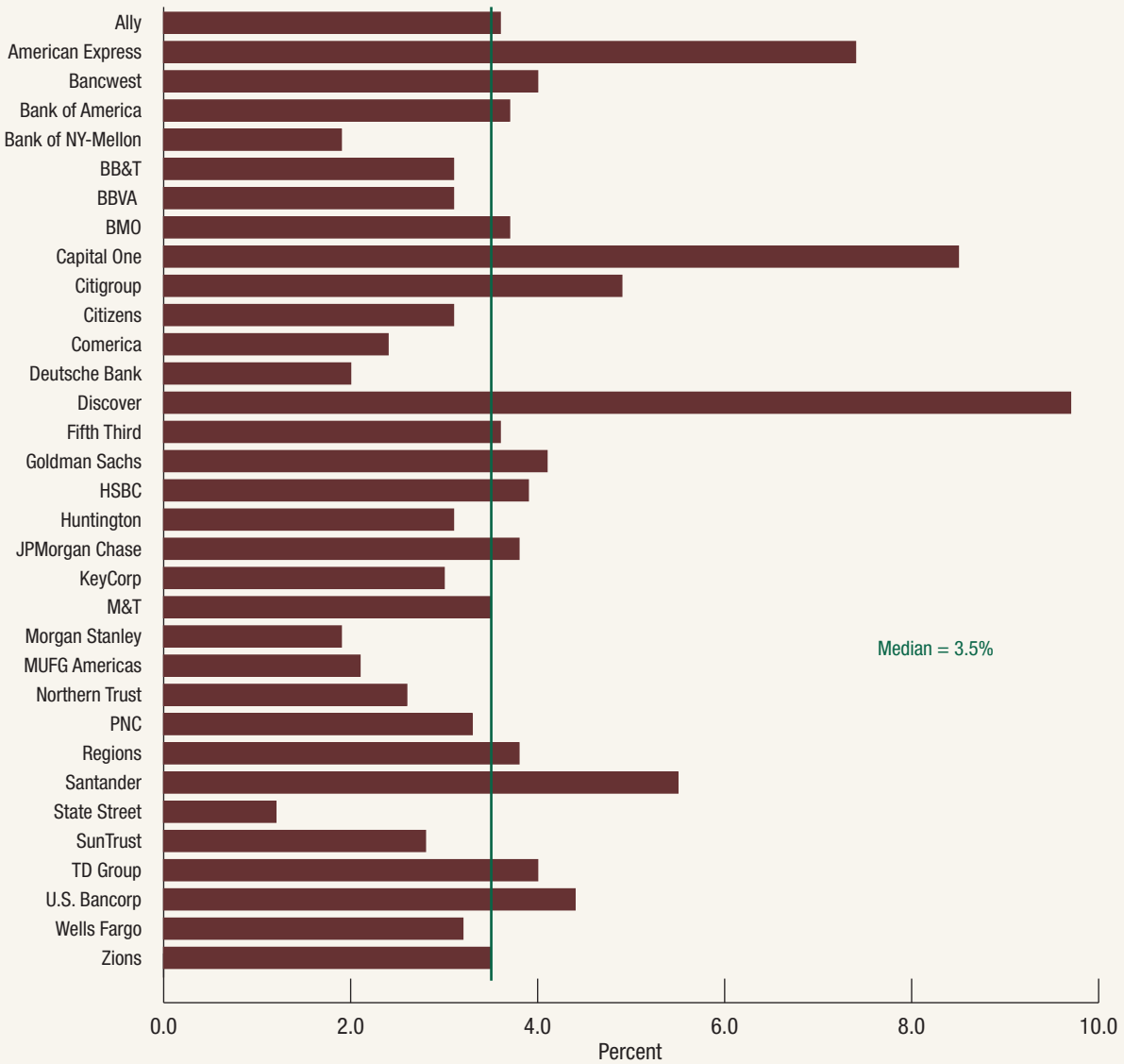
<sup>6</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. Those transitions are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Figure 15. Change from 2015:Q4 to minimum CET1 ratio in the adverse scenario**



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of risk-weighted assets. (The text of this note has been changed from “average” assets to “risk-weighted” assets.)

**Figure 16. Total loan loss rates in the adverse scenario**



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

**Table 10. Projected loan losses by type of loan for 2016:Q1-2018:Q1 under the adverse scenario: 33 participating bank holding companies**

Billions of dollars

Bank holding company	Loan losses	First lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial	Commercial real estate, domestic <sup>1</sup>	Credit cards	Other consumer <sup>2</sup>	Other loans <sup>3</sup>
Ally Financial Inc.	4.1	0.2	0.1	1.2	0.1	0.0	2.6	0.0
American Express Company	8.1	0.0	0.0	2.7	0.0	5.2	0.0	0.1
BancWest Corporation	2.7	0.3	0.1	0.8	0.6	0.1	0.6	0.3
Bank of America Corporation	35.8	5.1	7.6	7.1	2.6	9.3	1.2	2.8
The Bank of New York Mellon Corporation	1.3	0.1	0.0	0.1	0.1	0.0	0.3	0.8
BB&T Corporation	4.5	0.7	0.2	0.8	1.4	0.2	0.9	0.3
BBVA Compass Bancshares, Inc.	2.0	0.4	0.1	0.6	0.5	0.1	0.2	0.1
BMO Financial Corp.	2.6	0.2	0.4	1.2	0.3	0.0	0.1	0.4
Capital One Financial Corporation	20.4	0.2	0.1	1.9	0.6	14.6	2.6	0.4
Citigroup Inc.	32.5	1.0	1.4	5.9	0.6	16.8	3.1	3.7
Citizens Financial Group, Inc.	3.2	0.3	0.8	0.8	0.4	0.1	0.7	0.1
Comerica Incorporated	1.2	0.0	0.0	0.6	0.3	0.0	0.0	0.2
Deutsche Bank Trust Corporation	0.4	0.1	0.0	0.1	0.1	0.0	0.0	0.1
Discover Financial Services	7.4	0.0	0.0	0.0	0.0	6.0	1.4	0.0
Fifth Third Bancorp	3.4	0.4	0.3	1.3	0.6	0.3	0.3	0.2
The Goldman Sachs Group, Inc.	2.9	0.4	0.0	1.1	0.1	0.0	0.1	1.2
HSBC North America Holdings Inc.	3.5	1.5	0.5	0.9	0.3	0.1	0.0	0.3
Huntington Bancshares Incorporated	2.0	0.2	0.2	0.6	0.4	0.1	0.4	0.1
JPMorgan Chase & Co.	33.9	2.7	3.4	8.6	2.0	10.7	2.0	4.5
KeyCorp	2.5	0.3	0.3	0.8	0.4	0.1	0.4	0.2
M&T Bank Corporation	3.2	1.1	0.3	0.5	1.0	0.0	0.2	0.1
Morgan Stanley	2.0	0.2	0.0	0.7	0.2	0.0	0.1	0.8
MUFG Americas Holdings Corporation	1.7	0.2	0.1	0.7	0.4	0.0	0.1	0.2
Northern Trust Corporation	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.3
The PNC Financial Services Group, Inc.	7.1	0.6	1.1	2.9	1.1	0.4	0.7	0.3
Regions Financial Corporation	3.2	0.5	0.3	0.9	0.8	0.1	0.3	0.2
Santander Holdings USA, Inc.	4.9	0.2	0.2	0.5	0.5	0.1	3.3	0.2
State Street Corporation	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.1
SunTrust Banks, Inc.	4.0	0.7	0.5	1.3	0.5	0.1	0.8	0.1
TD Group US Holdings LLC	5.8	0.5	0.5	1.2	1.1	1.6	0.4	0.5
U.S. Bancorp	12.0	1.1	0.6	4.1	2.0	2.6	1.0	0.7
Wells Fargo & Company	31.2	3.8	2.9	7.5	4.5	4.3	5.0	3.3
Zions Bancorporation	1.5	0.0	0.1	0.7	0.6	0.0	0.0	0.1
33 participating bank holding companies	252.0	23.2	22.2	58.5	23.9	73.1	28.6	22.6

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected.

<sup>1</sup> Commercial and industrial loans include small and medium enterprise loans and corporate cards.<sup>2</sup> Other consumer loans include student loans and automobile loans.<sup>3</sup> Other loans include international real estate loans.

**Table 11. Projected loan losses by type of loan for 2016:Q1–2018:Q1 under the adverse: 33 participating bank holding companies**Percent of average balances<sup>1</sup>

Bank holding company	Loan losses	First lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial	Commercial real estate, domestic <sup>2</sup>	Credit cards	Other consumer <sup>3</sup>	Other loans <sup>4</sup>
Ally Financial Inc.	3.6	2.3	5.6	2.7	1.6	0.0	4.3	5.4
American Express Company	7.4	0.0	0.0	7.8	0.0	7.3	12.0	4.6
BancWest Corporation	4.0	3.5	2.5	5.5	3.5	14.8	3.4	4.0
Bank of America Corporation	3.7	2.6	9.6	3.0	3.5	9.0	1.5	1.5
The Bank of New York Mellon Corporation	1.9	1.4	6.0	1.6	3.8	0.0	8.9	1.5
BB&T Corporation	3.1	2.1	2.2	3.0	3.6	10.2	4.5	1.8
BBVA Compass Bancshares, Inc.	3.1	2.4	4.2	3.3	4.0	12.6	4.1	1.1
BMO Financial Corp.	3.7	2.1	8.4	4.6	3.5	8.6	1.4	2.5
Capital One Financial Corporation	8.5	0.8	5.3	6.7	2.0	15.5	5.9	2.2
Citigroup Inc.	4.9	1.3	5.5	3.6	4.3	11.1	9.8	1.9
Citizens Financial Group, Inc.	3.1	1.8	4.3	2.9	3.1	9.6	3.5	1.4
Comerica Incorporated	2.4	1.9	2.2	2.1	2.5	0.0	6.8	3.3
Deutsche Bank Trust Corporation	2.0	1.6	6.0	3.5	3.5	0.0	3.6	1.0
Discover Financial Services	9.7	3.3	9.4	11.8	10.4	9.9	9.1	4.1
Fifth Third Bancorp	3.6	3.2	4.1	3.4	5.6	12.2	2.1	1.8
The Goldman Sachs Group, Inc.	4.1	46.6	5.8	6.9	2.7	0.0	3.7	2.5
HSBC North America Holdings Inc.	3.9	5.7	13.3	2.4	2.6	12.0	6.7	2.0
Huntington Bancshares Incorporated	3.1	2.8	2.7	3.2	3.4	11.9	3.0	2.0
JPMorgan Chase & Co.	3.8	1.3	5.7	5.9	2.1	8.4	2.8	2.5
KeyCorp	3.0	3.3	3.1	2.9	2.8	9.6	5.6	1.7
M&T Bank Corporation	3.5	3.9	4.7	2.7	3.2	12.0	4.4	2.1
Morgan Stanley	1.9	1.0	5.8	5.1	2.2	0.0	0.8	1.8
MUFG Americas Holdings Corporation	2.1	0.8	2.4	3.1	2.3	0.0	12.5	2.4
Northern Trust Corporation	2.6	1.7	6.2	2.3	2.8	0.0	9.6	2.4
The PNC Financial Services Group, Inc.	3.3	2.3	4.9	4.1	3.0	9.2	3.0	1.0
Regions Financial Corporation	3.8	3.2	3.9	3.7	5.0	10.7	4.9	1.6
Santander Holdings USA, Inc.	5.5	2.5	2.6	2.4	2.4	11.6	12.3	2.3
State Street Corporation	1.2	0.0	0.0	3.0	2.3	0.0	0.6	0.8
SunTrust Banks, Inc.	2.8	2.6	3.9	2.7	2.6	10.5	3.6	1.0
TD Group US Holdings LLC	4.0	2.4	4.9	3.8	4.3	14.8	1.7	2.3
U.S. Bancorp	4.4	1.8	3.3	5.7	4.9	11.8	2.7	2.9
Wells Fargo & Company	3.2	1.4	3.9	3.9	3.3	12.0	5.1	1.9
Zions Bancorporation	3.5	0.5	1.9	5.3	3.2	12.0	8.2	3.3
33 participating bank holding companies	4.0	2.0	5.5	4.0	3.2	10.5	4.3	1.9

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected.

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.<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.

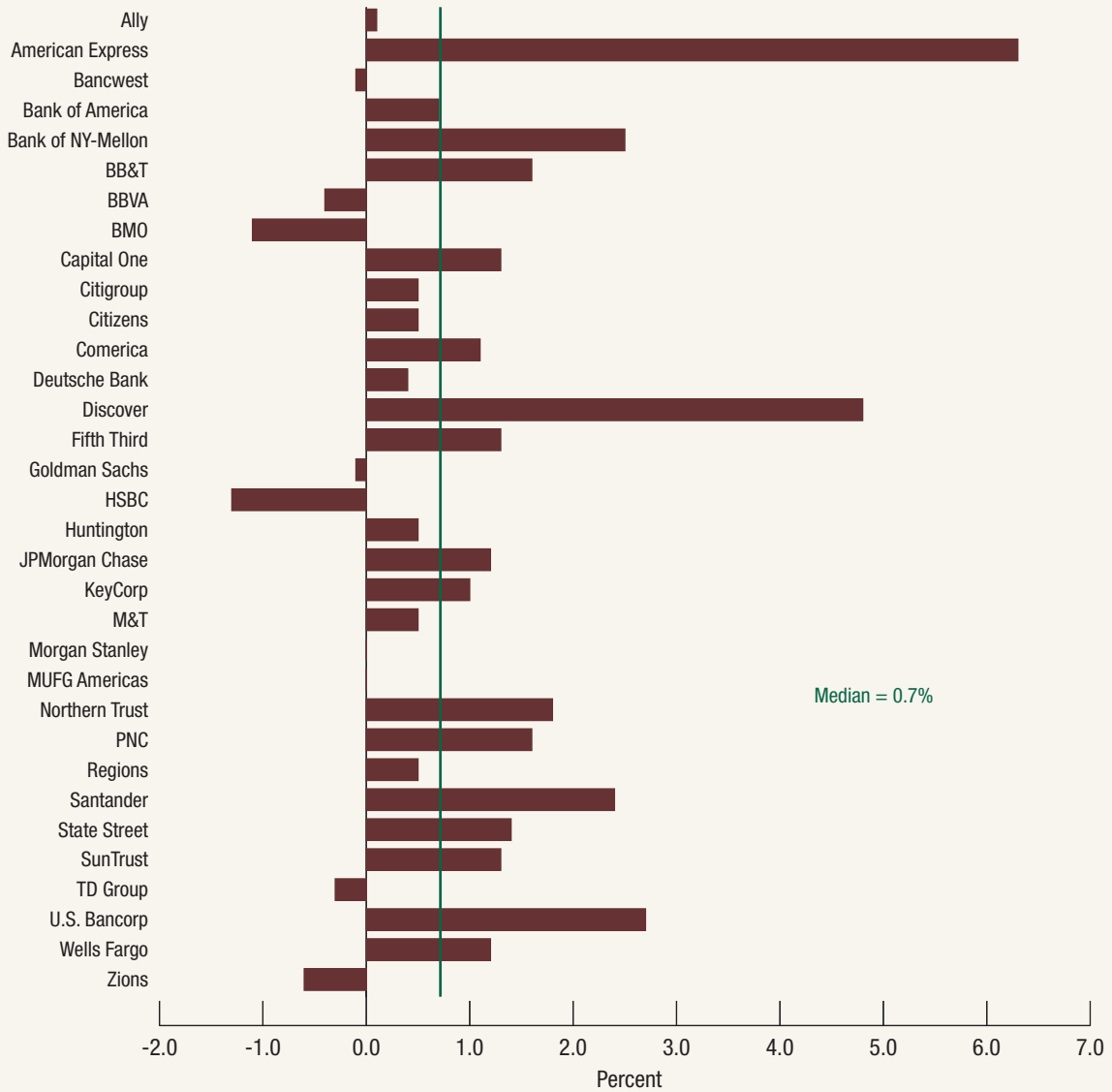


Figure 17. PPNR rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average assets.

**Figure 18. Pre-tax net income rates in the adverse scenario**



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average assets.

# Appendix A: Supervisory Scenarios

This appendix includes the adverse and severely adverse scenarios provided by the Federal Reserve.

hypothetical scenarios designed to assess the strength of banking organizations and their resilience to adverse economic environments.

It is important to note that the adverse and severely adverse scenarios are not forecasts but rather are

**Table A.1. Supervisory severely adverse scenario: Domestic, Q1:2001Q1:2019**

Percent unless otherwise indicated

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q1 2001	-1.1	1.4	3.5	6.3	4.2	3.9	4.8	4.9	5.3	7.4	7.0	8.6	10,645.9	113.3	139.0	32.8
Q2 2001	2.1	5.1	-0.3	1.6	4.4	2.8	3.7	4.9	5.5	7.5	7.1	7.3	11,407.2	115.2	139.0	34.7
Q3 2001	-1.3	0.0	9.8	10.1	4.8	1.1	3.2	4.6	5.3	7.3	6.9	6.6	9,563.0	117.5	141.0	43.7
Q4 2001	1.1	2.3	-4.9	-4.6	5.5	-0.3	1.9	4.2	5.1	7.2	6.8	5.2	10,707.7	119.8	136.0	35.3
Q1 2002	3.7	5.1	10.1	10.9	5.7	1.3	1.7	4.5	5.4	7.6	7.0	4.8	10,775.7	122.1	137.0	26.1
Q2 2002	2.2	3.8	2.0	5.2	5.8	3.2	1.7	4.5	5.4	7.6	6.8	4.8	9,384.0	125.4	136.0	28.4
Q3 2002	2.0	3.8	-0.5	1.5	5.7	2.2	1.6	3.4	4.5	7.3	6.2	4.8	7,773.6	128.6	139.0	45.1
Q4 2002	0.3	2.4	1.9	3.8	5.9	2.4	1.3	3.1	4.3	7.0	6.1	4.5	8,343.2	131.3	142.0	42.6
Q1 2003	2.1	4.6	1.1	4.0	5.9	4.2	1.2	2.9	4.2	6.5	5.8	4.3	8,051.9	134.1	148.0	34.7
Q2 2003	3.8	5.1	5.9	6.3	6.1	-0.7	1.0	2.6	3.8	5.7	5.5	4.2	9,342.4	137.0	149.0	29.1
Q3 2003	6.9	9.3	6.7	9.3	6.1	3.0	0.9	3.1	4.4	6.0	6.1	4.0	9,649.7	141.0	147.0	22.7
Q4 2003	4.8	6.8	1.6	3.3	5.8	1.5	0.9	3.2	4.4	5.8	5.9	4.0	10,799.6	145.9	146.0	21.1
Q1 2004	2.3	5.9	2.9	6.1	5.7	3.4	0.9	3.0	4.1	5.5	5.6	4.0	11,039.4	151.6	153.0	21.6
Q2 2004	3.0	6.6	4.0	7.0	5.6	3.2	1.1	3.7	4.7	6.1	6.2	4.0	11,144.6	157.9	160.0	20.0
Q3 2004	3.7	6.3	2.1	4.5	5.4	2.6	1.5	3.5	4.4	5.8	5.9	4.4	10,893.8	163.2	172.0	19.3
Q4 2004	3.5	6.4	5.1	8.5	5.4	4.4	2.0	3.5	4.3	5.4	5.7	4.9	11,951.5	169.2	176.0	16.6
Q1 2005	4.3	8.3	-3.8	-1.8	5.3	2.0	2.5	3.9	4.4	5.4	5.8	5.4	11,637.3	177.1	176.0	14.6
Q2 2005	2.1	5.1	3.2	6.0	5.1	2.7	2.9	3.9	4.2	5.5	5.7	5.9	11,856.7	184.5	182.0	17.7
Q3 2005	3.4	7.3	2.1	6.6	5.0	6.2	3.4	4.0	4.3	5.5	5.8	6.4	12,282.9	190.2	187.0	14.2
Q4 2005	2.3	5.4	3.4	6.6	5.0	3.8	3.8	4.4	4.6	5.9	6.2	7.0	12,497.2	194.8	195.0	16.5
Q1 2006	4.9	8.2	9.5	11.5	4.7	2.1	4.4	4.6	4.7	6.0	6.3	7.4	13,121.6	198.0	200.0	14.6
Q2 2006	1.2	4.5	0.6	3.7	4.6	3.7	4.7	5.0	5.2	6.5	6.6	7.9	12,808.9	197.1	209.0	23.8
Q3 2006	0.4	3.2	1.2	4.1	4.6	3.8	4.9	4.8	5.0	6.4	6.5	8.3	13,322.5	195.8	219.0	18.6
Q4 2006	3.2	4.6	5.3	4.6	4.4	-1.6	4.9	4.6	4.7	6.1	6.2	8.3	14,215.8	195.8	217.0	12.7
Q1 2007	0.2	4.8	2.6	6.5	4.5	4.0	5.0	4.6	4.8	6.1	6.2	8.3	14,354.0	193.3	227.0	19.6
Q2 2007	3.1	5.4	0.8	4.0	4.5	4.6	4.7	4.7	4.9	6.3	6.4	8.3	15,163.1	188.5	236.0	18.9
Q3 2007	2.7	4.2	1.1	3.4	4.7	2.6	4.3	4.5	4.8	6.5	6.5	8.2	15,317.8	183.2	249.0	30.8
Q4 2007	1.4	3.2	0.3	4.4	4.8	5.0	3.4	3.8	4.4	6.4	6.2	7.5	14,753.6	177.8	251.0	31.1
Q1 2008	-2.7	-0.5	2.9	6.5	5.0	4.4	2.1	2.8	3.9	6.5	5.9	6.2	13,284.1	171.1	240.0	32.2
Q2 2008	2.0	4.0	8.7	13.3	5.3	5.3	1.6	3.2	4.1	6.8	6.1	5.1	13,016.4	163.9	224.0	24.1
Q3 2008	-1.9	0.8	-8.9	-5.1	6.0	6.3	1.5	3.1	4.1	7.2	6.3	5.0	11,826.0	157.4	233.0	46.7
Q4 2008	-8.2	-7.7	2.6	-3.2	6.9	-8.9	0.3	2.2	3.7	9.4	5.8	4.1	9,056.7	149.5	223.0	80.9

(continued on next page)

Table A.1.—*continued*

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q1 2009	-5.4	-4.5	-0.8	-3.0	8.3	-2.7	0.2	1.9	3.2	9.0	5.0	3.3	8,044.2	143.5	209.0	56.7
Q2 2009	-0.5	-1.2	2.9	4.7	9.3	2.1	0.2	2.3	3.7	8.2	5.1	3.3	9,342.8	143.2	178.0	42.3
Q3 2009	1.3	1.2	-4.3	-1.9	9.6	3.5	0.2	2.5	3.8	6.8	5.1	3.3	10,812.8	144.3	154.0	31.3
Q4 2009	3.9	5.2	-0.5	2.2	9.9	3.2	0.1	2.3	3.7	6.1	4.9	3.3	11,385.1	145.2	155.0	30.7
Q1 2010	1.7	3.2	0.4	1.8	9.8	0.6	0.1	2.4	3.9	5.8	5.0	3.3	12,032.5	145.5	150.0	27.3
Q2 2010	3.9	5.8	5.3	5.8	9.6	-0.1	0.1	2.3	3.6	5.6	4.8	3.3	10,645.8	144.4	165.0	45.8
Q3 2010	2.7	4.6	2.0	3.2	9.5	1.2	0.2	1.6	2.9	5.1	4.4	3.3	11,814.0	141.6	167.0	32.9
Q4 2010	2.5	4.7	2.8	5.0	9.5	3.3	0.1	1.5	3.0	5.0	4.5	3.3	13,131.5	140.3	173.0	23.5
Q1 2011	-1.5	0.2	5.0	8.2	9.1	4.3	0.1	2.1	3.5	5.4	4.9	3.3	13,908.5	138.5	180.0	29.4
Q2 2011	2.9	6.0	-0.6	3.5	9.1	4.7	0.0	1.8	3.3	5.1	4.6	3.3	13,843.5	137.7	177.0	22.7
Q3 2011	0.8	3.3	2.1	4.3	9.0	2.6	0.0	1.1	2.5	4.9	4.2	3.3	11,676.5	137.7	177.0	48.0
Q4 2011	4.6	5.2	0.2	1.6	8.6	1.7	0.0	1.0	2.1	5.0	4.0	3.3	13,019.3	137.6	188.0	45.5
Q1 2012	2.7	4.9	6.7	9.2	8.3	2.2	0.1	0.9	2.1	4.7	3.9	3.3	14,627.5	139.6	188.0	23.0
Q2 2012	1.9	3.8	3.1	4.4	8.2	1.0	0.1	0.8	1.8	4.5	3.8	3.3	14,100.2	142.8	189.0	26.7
Q3 2012	0.5	2.7	-0.2	1.1	8.0	1.8	0.1	0.7	1.6	4.2	3.5	3.3	14,894.7	145.7	197.0	20.5
Q4 2012	0.1	1.7	10.9	13.3	7.8	2.6	0.1	0.7	1.7	3.9	3.4	3.3	14,834.9	149.3	198.0	22.7
Q1 2013	1.9	3.6	-15.9	-14.7	7.7	1.4	0.1	0.8	1.9	4.0	3.5	3.3	16,396.2	153.8	202.0	19.0
Q2 2013	1.1	2.1	2.7	3.1	7.5	-0.1	0.1	0.9	2.0	4.1	3.7	3.3	16,771.3	158.8	213.0	20.5
Q3 2013	3.0	4.9	2.2	3.9	7.2	2.3	0.0	1.5	2.7	4.9	4.4	3.3	17,718.3	163.0	224.0	17.0
Q4 2013	3.8	5.6	0.6	2.0	7.0	1.4	0.1	1.4	2.8	4.8	4.3	3.3	19,413.2	166.3	229.0	20.3
Q1 2014	-0.9	0.6	4.0	5.6	6.7	2.1	0.0	1.6	2.8	4.6	4.4	3.3	19,711.2	169.3	230.0	21.4
Q2 2014	4.6	6.9	3.0	5.2	6.2	2.4	0.0	1.7	2.7	4.3	4.2	3.3	20,568.7	170.7	239.0	17.0
Q3 2014	4.3	6.0	2.7	3.9	6.1	1.2	0.0	1.7	2.5	4.2	4.1	3.3	20,458.8	172.5	245.0	17.0
Q4 2014	2.1	2.2	4.7	4.2	5.7	-0.9	0.0	1.6	2.3	4.2	3.9	3.3	21,424.6	174.5	252.0	26.3
Q1 2015	0.6	0.8	3.9	1.9	5.6	-3.1	0.0	1.5	2.0	4.0	3.7	3.3	21,707.6	177.3	260.0	22.4
Q2 2015	3.9	6.1	2.6	4.9	5.4	3.0	0.0	1.5	2.2	4.2	3.8	3.3	21,630.9	179.4	264.0	18.9
Q3 2015	2.0	3.3	3.8	5.1	5.2	1.6	0.0	1.6	2.3	4.5	3.9	3.3	19,959.3	181.7	270.0	40.7
Q4 2015	1.9	1.9	3.5	3.8	5.0	0.2	0.1	1.6	2.2	4.6	3.9	3.3	21,100.9	183.1	273.4	24.4
Q1 2016	-5.1	-2.6	-0.5	-0.4	6.0	0.2	0.0	0.0	0.2	4.8	3.2	3.3	16,831.9	178.8	264.9	73.3
Q2 2016	-7.5	-6.1	-4.1	-3.2	7.2	0.9	-0.2	0.0	0.4	5.6	3.7	2.9	13,254.9	173.5	251.0	61.1
Q3 2016	-5.9	-4.5	-4.5	-3.5	8.3	1.1	-0.5	0.0	0.4	6.0	3.9	2.6	11,469.2	167.4	236.5	67.1
Q4 2016	-4.2	-2.9	-3.6	-2.5	9.1	1.3	-0.5	0.0	0.6	6.4	4.1	2.6	10,395.5	160.8	223.2	59.1
Q1 2017	-2.2	-0.9	-2.0	-0.7	9.7	1.4	-0.5	0.0	0.7	6.1	4.1	2.6	11,183.3	154.7	210.4	45.5
Q2 2017	0.4	1.9	-0.7	1.0	9.9	1.8	-0.5	0.0	0.8	5.8	4.1	2.6	12,131.9	148.9	201.3	37.4
Q3 2017	1.3	2.9	-0.3	1.4	10.0	1.9	-0.5	0.1	1.0	5.7	4.1	2.6	13,178.9	144.0	193.4	31.1
Q4 2017	3.0	4.4	1.4	3.1	9.9	1.9	-0.5	0.2	1.1	5.5	4.1	2.6	14,671.1	140.8	191.2	26.2
Q1 2018	3.0	4.0	2.3	3.6	9.8	1.6	-0.5	0.3	1.2	5.3	4.1	2.6	16,180.1	138.5	190.1	22.8
Q2 2018	3.9	5.0	2.6	4.0	9.6	1.7	-0.5	0.4	1.4	5.1	4.0	2.6	17,996.1	137.5	190.5	20.0
Q3 2018	3.9	4.9	2.9	4.3	9.4	1.7	-0.5	0.5	1.5	5.0	4.1	2.6	19,271.6	137.3	192.6	18.9
Q4 2018	3.9	4.9	3.1	4.4	9.1	1.6	-0.5	0.6	1.6	4.8	4.1	2.6	20,640.9	137.7	195.4	17.6
Q1 2019	3.9	4.8	3.0	4.2	8.9	1.5	-0.5	0.7	1.7	4.7	4.1	2.6	22,068.1	138.5	198.5	16.8

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on variables.

**Table A.2. Supervisory severely adverse scenario: International, Q1:2001Q1:2019**

Percent unless otherwise indicated

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q1 2001	3.8	1.1	0.879	5.0	1.7	106.0	2.6	-1.2	125.5	4.6	0.1	1.419
Q2 2001	0.1	4.1	0.847	5.5	2.2	106.1	-0.7	-0.3	124.7	3.1	3.1	1.408
Q3 2001	0.3	1.4	0.910	4.7	1.1	106.4	-4.4	-1.1	119.2	2.6	1.0	1.469
Q4 2001	0.5	1.7	0.890	8.4	0.2	106.9	-0.5	-1.4	131.0	1.4	0.0	1.454
Q1 2002	0.9	3.0	0.872	7.6	0.4	107.3	-0.9	-2.7	132.7	1.6	1.9	1.425
Q2 2002	2.0	2.0	0.986	8.1	1.2	104.8	4.3	1.7	119.9	3.3	0.9	1.525
Q3 2002	1.6	1.6	0.988	7.3	1.3	105.5	2.6	-0.7	121.7	3.9	1.4	1.570
Q4 2002	0.3	2.4	1.049	6.4	0.9	104.5	1.5	-0.4	118.8	3.6	1.9	1.610
Q1 2003	-0.9	3.3	1.090	6.5	3.6	105.5	-2.2	-1.6	118.1	2.9	1.6	1.579
Q2 2003	0.4	0.3	1.150	2.3	1.2	104.0	5.2	1.7	119.9	3.7	0.3	1.653
Q3 2003	2.0	2.2	1.165	14.2	0.0	102.6	1.7	-0.7	111.4	3.1	1.7	1.662
Q4 2003	3.1	2.2	1.260	12.9	5.6	103.4	4.2	-0.6	107.1	3.0	1.7	1.784
Q1 2004	2.0	2.3	1.229	5.5	4.0	101.4	3.8	-0.9	104.2	2.7	1.3	1.840
Q2 2004	2.2	2.4	1.218	7.1	4.1	102.8	0.3	1.1	109.4	2.2	1.0	1.813
Q3 2004	1.3	2.0	1.242	8.2	3.9	102.7	0.6	0.1	110.2	0.9	1.1	1.809
Q4 2004	1.5	2.4	1.354	6.3	0.9	98.9	-1.0	1.7	102.7	1.9	2.4	1.916
Q1 2005	0.6	1.5	1.297	10.3	2.9	98.6	0.8	-2.7	107.2	2.8	2.6	1.889
Q2 2005	2.8	2.2	1.210	8.9	1.5	98.9	5.4	-1.2	110.9	4.4	1.9	1.793
Q3 2005	3.0	3.2	1.206	9.3	2.3	98.6	1.4	-1.3	113.3	4.1	2.7	1.770
Q4 2005	2.4	2.5	1.184	11.6	1.7	98.1	0.7	0.7	117.9	5.9	1.4	1.719
Q1 2006	3.7	1.7	1.214	10.9	2.4	96.8	1.7	1.3	117.5	1.5	1.9	1.739
Q2 2006	4.4	2.5	1.278	7.1	3.2	96.7	1.7	-0.1	114.5	1.2	3.0	1.849
Q3 2006	2.6	2.0	1.269	10.3	2.1	96.4	-0.3	0.5	118.0	0.5	3.3	1.872
Q4 2006	4.4	0.9	1.320	11.1	3.8	94.6	5.2	-0.4	119.0	2.3	2.6	1.959
Q1 2007	3.2	2.2	1.337	13.7	3.6	94.0	4.0	-0.2	117.6	3.9	2.6	1.969
Q2 2007	2.5	2.3	1.352	10.6	4.9	91.9	0.6	0.0	123.4	2.4	1.7	2.006
Q3 2007	2.0	2.1	1.422	8.6	7.4	90.6	-1.5	0.1	115.0	3.1	0.2	2.039
Q4 2007	2.0	4.9	1.460	12.9	6.1	89.4	3.4	2.2	111.7	3.1	4.0	1.984
Q1 2008	2.3	4.2	1.581	7.1	8.1	88.0	2.7	1.3	99.9	1.0	3.7	1.986
Q2 2008	-1.3	3.2	1.575	6.1	6.4	88.7	-4.6	1.6	106.2	-2.2	5.7	1.991
Q3 2008	-2.2	3.2	1.408	3.1	2.8	91.6	-4.1	3.6	105.9	-6.6	5.8	1.780
Q4 2008	-7.1	-1.4	1.392	0.1	-0.9	92.3	-12.5	-2.2	90.8	-8.7	0.5	1.462
Q1 2009	-11.3	-1.1	1.326	3.8	-1.4	94.2	-15.1	-3.6	99.2	-6.1	-0.1	1.430
Q2 2009	-0.8	0.0	1.402	15.4	2.3	92.3	7.1	-1.7	96.4	-0.8	2.2	1.645
Q3 2009	1.2	1.1	1.463	12.6	3.9	91.3	0.4	-1.2	89.5	0.6	3.5	1.600
Q4 2009	2.0	1.6	1.433	9.0	5.2	90.7	7.1	-1.6	93.1	1.4	3.0	1.617
Q1 2010	1.7	1.8	1.353	9.8	4.6	89.8	5.8	0.9	93.4	1.5	4.0	1.519
Q2 2010	3.9	2.0	1.229	9.8	3.4	91.1	4.6	-1.2	88.5	3.3	3.2	1.495
Q3 2010	1.9	1.6	1.360	8.8	3.9	88.4	6.1	-2.1	83.5	2.0	2.3	1.573
Q4 2010	2.1	2.6	1.327	9.3	7.7	87.4	-2.0	1.3	81.7	0.4	4.0	1.539
Q1 2011	3.5	3.6	1.418	9.5	6.3	86.5	-7.7	-0.4	82.8	3.0	6.7	1.605
Q2 2011	0.0	3.2	1.452	7.1	5.4	85.3	-2.2	-0.4	80.6	1.4	4.7	1.607
Q3 2011	-0.1	1.4	1.345	5.9	5.0	87.4	11.2	0.3	77.0	3.3	3.7	1.562
Q4 2011	-1.2	3.5	1.297	6.1	3.4	87.4	0.9	-0.7	77.0	0.6	3.4	1.554
Q1 2012	-0.7	2.7	1.333	7.1	3.2	86.4	3.6	1.9	82.4	0.9	2.1	1.599
Q2 2012	-1.3	2.3	1.267	5.9	4.0	88.1	-1.3	-0.7	79.8	-0.7	2.0	1.569
Q3 2012	-0.6	1.6	1.286	6.5	1.9	86.3	-1.9	-2.1	77.9	4.1	2.3	1.613
Q4 2012	-1.7	2.4	1.319	7.2	3.7	86.0	-0.4	0.0	86.6	-0.2	4.0	1.626
Q1 2013	-1.0	1.1	1.282	6.3	4.2	86.3	4.0	0.4	94.2	2.7	2.9	1.519
Q2 2013	1.6	0.5	1.301	7.0	3.1	87.3	3.1	0.6	99.2	2.4	1.7	1.521
Q3 2013	1.0	1.3	1.354	7.4	3.5	86.8	2.0	2.4	98.3	3.8	2.1	1.618

*(continued on next page)*

Table A.2.—*continued*

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q4 2013	0.8	0.3	1.378	6.5	4.0	85.9	-0.7	2.3	105.3	2.6	1.5	1.657
Q1 2014	0.9	0.6	1.378	5.9	1.5	86.9	5.0	0.7	103.0	2.6	1.8	1.668
Q2 2014	0.2	0.1	1.369	7.0	2.7	86.8	-7.2	9.3	101.3	3.2	1.5	1.711
Q3 2014	1.2	0.3	1.263	7.5	2.2	87.2	-2.8	1.3	109.7	2.6	0.9	1.622
Q4 2014	1.5	-0.4	1.210	5.6	1.0	88.2	1.8	-0.8	119.9	2.7	-0.6	1.558
Q1 2015	2.2	-1.2	1.074	5.8	1.0	88.1	4.4	-0.3	120.0	1.5	-1.2	1.485
Q2 2015	1.6	2.2	1.115	6.2	2.9	88.5	-0.5	1.7	122.1	2.2	0.8	1.573
Q3 2015	1.2	-0.1	1.116	7.0	2.6	91.1	1.0	0.0	119.8	1.8	1.0	1.512
Q4 2015	1.6	-0.1	1.086	6.2	2.3	92.2	1.0	-0.3	120.3	2.4	-0.3	1.475
Q1 2016	-4.4	-0.4	1.002	-1.4	0.1	100.9	-4.1	-2.8	117.0	-2.6	-0.8	1.439
Q2 2016	-5.4	-1.0	0.970	-0.8	-1.1	105.0	-7.5	-3.7	115.5	-4.4	-1.3	1.425
Q3 2016	-4.4	-1.3	0.952	1.5	-1.9	107.2	-9.0	-4.3	114.9	-4.1	-1.4	1.422
Q4 2016	-3.4	-1.2	0.935	2.9	-2.4	108.7	-9.6	-4.6	114.2	-3.4	-1.3	1.418
Q1 2017	-1.6	-0.9	0.946	5.0	-2.2	107.1	-8.1	-3.8	114.2	-1.9	-0.9	1.428
Q2 2017	-0.2	-0.5	0.957	6.1	-1.9	105.3	-6.0	-3.1	114.2	-0.4	-0.4	1.438
Q3 2017	0.9	-0.1	0.968	6.4	-1.4	103.5	-4.1	-2.5	114.3	0.8	0.0	1.446
Q4 2017	1.6	0.2	0.979	6.5	-1.0	101.9	-2.4	-2.1	114.3	1.7	0.3	1.453
Q1 2018	2.1	0.4	0.989	6.5	-0.5	100.5	-1.0	-1.7	113.8	2.3	0.6	1.456
Q2 2018	2.3	0.6	0.999	6.6	-0.1	99.2	0.1	-1.4	113.4	2.7	0.8	1.457
Q3 2018	2.4	0.7	1.009	6.7	0.3	98.1	0.9	-1.1	113.1	3.0	1.0	1.459
Q4 2018	2.4	0.9	1.018	6.8	0.8	97.3	1.4	-0.7	112.7	3.1	1.1	1.461
Q1 2019	2.3	1.0	1.028	7.0	1.2	96.5	1.7	-0.2	112.1	3.1	1.3	1.466

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on variables.

**Table A.3. Supervisory adverse scenario: Domestic, Q1:2001Q1:2019**

Percent unless otherwise indicated

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q1 2001	-1.1	1.4	3.5	6.3	4.2	3.9	4.8	4.9	5.3	7.4	7.0	8.6	10,645.9	113.3	139.0	32.8
Q2 2001	2.1	5.1	-0.3	1.6	4.4	2.8	3.7	4.9	5.5	7.5	7.1	7.3	11,407.2	115.2	139.0	34.7
Q3 2001	-1.3	0.0	9.8	10.1	4.8	1.1	3.2	4.6	5.3	7.3	6.9	6.6	9,563.0	117.5	141.0	43.7
Q4 2001	1.1	2.3	-4.9	-4.6	5.5	-0.3	1.9	4.2	5.1	7.2	6.8	5.2	10,707.7	119.8	136.0	35.3
Q1 2002	3.7	5.1	10.1	10.9	5.7	1.3	1.7	4.5	5.4	7.6	7.0	4.8	10,775.7	122.1	137.0	26.1
Q2 2002	2.2	3.8	2.0	5.2	5.8	3.2	1.7	4.5	5.4	7.6	6.8	4.8	9,384.0	125.4	136.0	28.4
Q3 2002	2.0	3.8	-0.5	1.5	5.7	2.2	1.6	3.4	4.5	7.3	6.2	4.8	7,773.6	128.6	139.0	45.1
Q4 2002	0.3	2.4	1.9	3.8	5.9	2.4	1.3	3.1	4.3	7.0	6.1	4.5	8,343.2	131.3	142.0	42.6
Q1 2003	2.1	4.6	1.1	4.0	5.9	4.2	1.2	2.9	4.2	6.5	5.8	4.3	8,051.9	134.1	148.0	34.7
Q2 2003	3.8	5.1	5.9	6.3	6.1	-0.7	1.0	2.6	3.8	5.7	5.5	4.2	9,342.4	137.0	149.0	29.1
Q3 2003	6.9	9.3	6.7	9.3	6.1	3.0	0.9	3.1	4.4	6.0	6.1	4.0	9,649.7	141.0	147.0	22.7
Q4 2003	4.8	6.8	1.6	3.3	5.8	1.5	0.9	3.2	4.4	5.8	5.9	4.0	10,799.6	145.9	146.0	21.1
Q1 2004	2.3	5.9	2.9	6.1	5.7	3.4	0.9	3.0	4.1	5.5	5.6	4.0	11,039.4	151.6	153.0	21.6
Q2 2004	3.0	6.6	4.0	7.0	5.6	3.2	1.1	3.7	4.7	6.1	6.2	4.0	11,144.6	157.9	160.0	20.0
Q3 2004	3.7	6.3	2.1	4.5	5.4	2.6	1.5	3.5	4.4	5.8	5.9	4.4	10,893.8	163.2	172.0	19.3
Q4 2004	3.5	6.4	5.1	8.5	5.4	4.4	2.0	3.5	4.3	5.4	5.7	4.9	11,951.5	169.2	176.0	16.6
Q1 2005	4.3	8.3	-3.8	-1.8	5.3	2.0	2.5	3.9	4.4	5.4	5.8	5.4	11,637.3	177.1	176.0	14.6
Q2 2005	2.1	5.1	3.2	6.0	5.1	2.7	2.9	3.9	4.2	5.5	5.7	5.9	11,856.7	184.5	182.0	17.7
Q3 2005	3.4	7.3	2.1	6.6	5.0	6.2	3.4	4.0	4.3	5.5	5.8	6.4	12,282.9	190.2	187.0	14.2
Q4 2005	2.3	5.4	3.4	6.6	5.0	3.8	3.8	4.4	4.6	5.9	6.2	7.0	12,497.2	194.8	195.0	16.5
Q1 2006	4.9	8.2	9.5	11.5	4.7	2.1	4.4	4.6	4.7	6.0	6.3	7.4	13,121.6	198.0	200.0	14.6
Q2 2006	1.2	4.5	0.6	3.7	4.6	3.7	4.7	5.0	5.2	6.5	6.6	7.9	12,808.9	197.1	209.0	23.8
Q3 2006	0.4	3.2	1.2	4.1	4.6	3.8	4.9	4.8	5.0	6.4	6.5	8.3	13,322.5	195.8	219.0	18.6
Q4 2006	3.2	4.6	5.3	4.6	4.4	-1.6	4.9	4.6	4.7	6.1	6.2	8.3	14,215.8	195.8	217.0	12.7
Q1 2007	0.2	4.8	2.6	6.5	4.5	4.0	5.0	4.6	4.8	6.1	6.2	8.3	14,354.0	193.3	227.0	19.6
Q2 2007	3.1	5.4	0.8	4.0	4.5	4.6	4.7	4.7	4.9	6.3	6.4	8.3	15,163.1	188.5	236.0	18.9
Q3 2007	2.7	4.2	1.1	3.4	4.7	2.6	4.3	4.5	4.8	6.5	6.5	8.2	15,317.8	183.2	249.0	30.8
Q4 2007	1.4	3.2	0.3	4.4	4.8	5.0	3.4	3.8	4.4	6.4	6.2	7.5	14,753.6	177.8	251.0	31.1
Q1 2008	-2.7	-0.5	2.9	6.5	5.0	4.4	2.1	2.8	3.9	6.5	5.9	6.2	13,284.1	171.1	240.0	32.2
Q2 2008	2.0	4.0	8.7	13.3	5.3	5.3	1.6	3.2	4.1	6.8	6.1	5.1	13,016.4	163.9	224.0	24.1
Q3 2008	-1.9	0.8	-8.9	-5.1	6.0	6.3	1.5	3.1	4.1	7.2	6.3	5.0	11,826.0	157.4	233.0	46.7
Q4 2008	-8.2	-7.7	2.6	-3.2	6.9	-8.9	0.3	2.2	3.7	9.4	5.8	4.1	9,056.7	149.5	223.0	80.9
Q1 2009	-5.4	-4.5	-0.8	-3.0	8.3	-2.7	0.2	1.9	3.2	9.0	5.0	3.3	8,044.2	143.5	209.0	56.7
Q2 2009	-0.5	-1.2	2.9	4.7	9.3	2.1	0.2	2.3	3.7	8.2	5.1	3.3	9,342.8	143.2	178.0	42.3
Q3 2009	1.3	1.2	-4.3	-1.9	9.6	3.5	0.2	2.5	3.8	6.8	5.1	3.3	10,812.8	144.3	154.0	31.3
Q4 2009	3.9	5.2	-0.5	2.2	9.9	3.2	0.1	2.3	3.7	6.1	4.9	3.3	11,385.1	145.2	155.0	30.7
Q1 2010	1.7	3.2	0.4	1.8	9.8	0.6	0.1	2.4	3.9	5.8	5.0	3.3	12,032.5	145.5	150.0	27.3
Q2 2010	3.9	5.8	5.3	5.8	9.6	-0.1	0.1	2.3	3.6	5.6	4.8	3.3	10,645.8	144.4	165.0	45.8
Q3 2010	2.7	4.6	2.0	3.2	9.5	1.2	0.2	1.6	2.9	5.1	4.4	3.3	11,814.0	141.6	167.0	32.9
Q4 2010	2.5	4.7	2.8	5.0	9.5	3.3	0.1	1.5	3.0	5.0	4.5	3.3	13,131.5	140.3	173.0	23.5
Q1 2011	-1.5	0.2	5.0	8.2	9.1	4.3	0.1	2.1	3.5	5.4	4.9	3.3	13,908.5	138.5	180.0	29.4
Q2 2011	2.9	6.0	-0.6	3.5	9.1	4.7	0.0	1.8	3.3	5.1	4.6	3.3	13,843.5	137.7	177.0	22.7
Q3 2011	0.8	3.3	2.1	4.3	9.0	2.6	0.0	1.1	2.5	4.9	4.2	3.3	11,676.5	137.7	177.0	48.0
Q4 2011	4.6	5.2	0.2	1.6	8.6	1.7	0.0	1.0	2.1	5.0	4.0	3.3	13,019.3	137.6	188.0	45.5
Q1 2012	2.7	4.9	6.7	9.2	8.3	2.2	0.1	0.9	2.1	4.7	3.9	3.3	14,627.5	139.6	188.0	23.0
Q2 2012	1.9	3.8	3.1	4.4	8.2	1.0	0.1	0.8	1.8	4.5	3.8	3.3	14,100.2	142.8	189.0	26.7
Q3 2012	0.5	2.7	-0.2	1.1	8.0	1.8	0.1	0.7	1.6	4.2	3.5	3.3	14,894.7	145.7	197.0	20.5
Q4 2012	0.1	1.7	10.9	13.3	7.8	2.6	0.1	0.7	1.7	3.9	3.4	3.3	14,834.9	149.3	198.0	22.7
Q1 2013	1.9	3.6	-15.9	-14.7	7.7	1.4	0.1	0.8	1.9	4.0	3.5	3.3	16,396.2	153.8	202.0	19.0
Q2 2013	1.1	2.1	2.7	3.1	7.5	-0.1	0.1	0.9	2.0	4.1	3.7	3.3	16,771.3	158.8	213.0	20.5
Q3 2013	3.0	4.9	2.2	3.9	7.2	2.3	0.0	1.5	2.7	4.9	4.4	3.3	17,718.3	163.0	224.0	17.0

*(continued on next page)*

Table A.3.—*continued*

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q4 2013	3.8	5.6	0.6	2.0	7.0	1.4	0.1	1.4	2.8	4.8	4.3	3.3	19,413.2	166.3	229.0	20.3
Q1 2014	-0.9	0.6	4.0	5.6	6.7	2.1	0.0	1.6	2.8	4.6	4.4	3.3	19,711.2	169.3	230.0	21.4
Q2 2014	4.6	6.9	3.0	5.2	6.2	2.4	0.0	1.7	2.7	4.3	4.2	3.3	20,568.7	170.7	239.0	17.0
Q3 2014	4.3	6.0	2.7	3.9	6.1	1.2	0.0	1.7	2.5	4.2	4.1	3.3	20,458.8	172.5	245.0	17.0
Q4 2014	2.1	2.2	4.7	4.2	5.7	-0.9	0.0	1.6	2.3	4.2	3.9	3.3	21,424.6	174.5	252.0	26.3
Q1 2015	0.6	0.8	3.9	1.9	5.6	-3.1	0.0	1.5	2.0	4.0	3.7	3.3	21,707.6	177.3	260.0	22.4
Q2 2015	3.9	6.1	2.6	4.9	5.4	3.0	0.0	1.5	2.2	4.2	3.8	3.3	21,630.9	179.4	264.0	18.9
Q3 2015	2.0	3.3	3.8	5.1	5.2	1.6	0.0	1.6	2.3	4.5	3.9	3.3	19,959.3	181.7	270.0	40.7
Q4 2015	1.9	1.9	3.5	3.8	5.0	0.2	0.1	1.6	2.2	4.6	3.9	3.3	21,100.9	183.1	273.4	24.4
Q1 2016	-1.5	-0.1	2.3	1.2	5.5	-0.9	0.1	0.5	1.3	4.4	3.5	3.3	20,899.6	181.2	270.6	40.7
Q2 2016	-2.8	-3.0	0.3	-0.6	6.1	-0.7	0.1	0.7	1.4	4.9	3.8	3.3	18,454.3	178.7	264.2	37.0
Q3 2016	-2.0	-2.1	-0.2	-1.0	6.7	-0.5	0.1	0.8	1.5	5.1	4.0	3.3	16,692.8	175.9	257.7	38.4
Q4 2016	-1.1	-1.1	0.0	-0.3	7.1	-0.1	0.1	1.0	1.7	5.4	4.2	3.2	15,536.2	172.8	251.8	36.0
Q1 2017	0.0	0.2	0.9	1.0	7.4	0.3	0.1	1.2	1.8	5.4	4.3	3.2	15,745.4	169.8	246.6	32.0
Q2 2017	1.3	1.8	1.4	1.9	7.5	0.7	0.1	1.3	1.9	5.3	4.3	3.2	16,052.6	167.0	243.5	29.1
Q3 2017	1.7	2.6	1.1	1.9	7.5	1.0	0.1	1.5	2.2	5.4	4.5	3.2	16,396.9	164.5	240.5	26.8
Q4 2017	2.6	3.4	2.1	3.1	7.5	1.2	0.1	1.6	2.3	5.4	4.6	3.2	17,115.4	162.9	240.6	24.7
Q1 2018	2.6	3.4	2.3	3.4	7.4	1.3	0.1	1.8	2.4	5.4	4.7	3.2	17,806.7	161.7	241.0	23.1
Q2 2018	3.0	3.9	2.5	3.7	7.3	1.4	0.1	1.9	2.6	5.5	4.8	3.2	18,645.6	161.1	242.2	21.7
Q3 2018	3.0	4.0	2.6	3.8	7.2	1.5	0.1	2.1	2.8	5.5	4.9	3.2	19,184.9	161.0	244.4	21.0
Q4 2018	3.0	4.1	2.6	3.9	7.1	1.6	0.1	2.3	2.9	5.6	5.0	3.2	19,756.4	161.2	246.8	20.3
Q1 2019	3.0	4.2	2.4	3.9	7.0	1.7	0.1	2.4	3.0	5.6	5.1	3.2	20,341.0	161.6	249.4	19.8

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on variables.



**Table A.4. Supervisory adverse scenario: International, Q1:2001Q1:2019**

Percent unless otherwise indicated

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q1 2001	3.8	1.1	0.879	5.0	1.7	106.0	2.6	-1.2	125.5	4.6	0.1	1.419
Q2 2001	0.1	4.1	0.847	5.5	2.2	106.1	-0.7	-0.3	124.7	3.1	3.1	1.408
Q3 2001	0.3	1.4	0.910	4.7	1.1	106.4	-4.4	-1.1	119.2	2.6	1.0	1.469
Q4 2001	0.5	1.7	0.890	8.4	0.2	106.9	-0.5	-1.4	131.0	1.4	0.0	1.454
Q1 2002	0.9	3.0	0.872	7.6	0.4	107.3	-0.9	-2.7	132.7	1.6	1.9	1.425
Q2 2002	2.0	2.0	0.986	8.1	1.2	104.8	4.3	1.7	119.9	3.3	0.9	1.525
Q3 2002	1.6	1.6	0.988	7.3	1.3	105.5	2.6	-0.7	121.7	3.9	1.4	1.570
Q4 2002	0.3	2.4	1.049	6.4	0.9	104.5	1.5	-0.4	118.8	3.6	1.9	1.610
Q1 2003	-0.9	3.3	1.090	6.5	3.6	105.5	-2.2	-1.6	118.1	2.9	1.6	1.579
Q2 2003	0.4	0.3	1.150	2.3	1.2	104.0	5.2	1.7	119.9	3.7	0.3	1.653
Q3 2003	2.0	2.2	1.165	14.2	0.0	102.6	1.7	-0.7	111.4	3.1	1.7	1.662
Q4 2003	3.1	2.2	1.260	12.9	5.6	103.4	4.2	-0.6	107.1	3.0	1.7	1.784
Q1 2004	2.0	2.3	1.229	5.5	4.0	101.4	3.8	-0.9	104.2	2.7	1.3	1.840
Q2 2004	2.2	2.4	1.218	7.1	4.1	102.8	0.3	1.1	109.4	2.2	1.0	1.813
Q3 2004	1.3	2.0	1.242	8.2	3.9	102.7	0.6	0.1	110.2	0.9	1.1	1.809
Q4 2004	1.5	2.4	1.354	6.3	0.9	98.9	-1.0	1.7	102.7	1.9	2.4	1.916
Q1 2005	0.6	1.5	1.297	10.3	2.9	98.6	0.8	-2.7	107.2	2.8	2.6	1.889
Q2 2005	2.8	2.2	1.210	8.9	1.5	98.9	5.4	-1.2	110.9	4.4	1.9	1.793
Q3 2005	3.0	3.2	1.206	9.3	2.3	98.6	1.4	-1.3	113.3	4.1	2.7	1.770
Q4 2005	2.4	2.5	1.184	11.6	1.7	98.1	0.7	0.7	117.9	5.9	1.4	1.719
Q1 2006	3.7	1.7	1.214	10.9	2.4	96.8	1.7	1.3	117.5	1.5	1.9	1.739
Q2 2006	4.4	2.5	1.278	7.1	3.2	96.7	1.7	-0.1	114.5	1.2	3.0	1.849
Q3 2006	2.6	2.0	1.269	10.3	2.1	96.4	-0.3	0.5	118.0	0.5	3.3	1.872
Q4 2006	4.4	0.9	1.320	11.1	3.8	94.6	5.2	-0.4	119.0	2.3	2.6	1.959
Q1 2007	3.2	2.2	1.337	13.7	3.6	94.0	4.0	-0.2	117.6	3.9	2.6	1.969
Q2 2007	2.5	2.3	1.352	10.6	4.9	91.9	0.6	0.0	123.4	2.4	1.7	2.006
Q3 2007	2.0	2.1	1.422	8.6	7.4	90.6	-1.5	0.1	115.0	3.1	0.2	2.039
Q4 2007	2.0	4.9	1.460	12.9	6.1	89.4	3.4	2.2	111.7	3.1	4.0	1.984
Q1 2008	2.3	4.2	1.581	7.1	8.1	88.0	2.7	1.3	99.9	1.0	3.7	1.986
Q2 2008	-1.3	3.2	1.575	6.1	6.4	88.7	-4.6	1.6	106.2	-2.2	5.7	1.991
Q3 2008	-2.2	3.2	1.408	3.1	2.8	91.6	-4.1	3.6	105.9	-6.6	5.8	1.780
Q4 2008	-7.1	-1.4	1.392	0.1	-0.9	92.3	-12.5	-2.2	90.8	-8.7	0.5	1.462
Q1 2009	-11.3	-1.1	1.326	3.8	-1.4	94.2	-15.1	-3.6	99.2	-6.1	-0.1	1.430
Q2 2009	-0.8	0.0	1.402	15.4	2.3	92.3	7.1	-1.7	96.4	-0.8	2.2	1.645
Q3 2009	1.2	1.1	1.463	12.6	3.9	91.3	0.4	-1.2	89.5	0.6	3.5	1.600
Q4 2009	2.0	1.6	1.433	9.0	5.2	90.7	7.1	-1.6	93.1	1.4	3.0	1.617
Q1 2010	1.7	1.8	1.353	9.8	4.6	89.8	5.8	0.9	93.4	1.5	4.0	1.519
Q2 2010	3.9	2.0	1.229	9.8	3.4	91.1	4.6	-1.2	88.5	3.3	3.2	1.495
Q3 2010	1.9	1.6	1.360	8.8	3.9	88.4	6.1	-2.1	83.5	2.0	2.3	1.573
Q4 2010	2.1	2.6	1.327	9.3	7.7	87.4	-2.0	1.3	81.7	0.4	4.0	1.539
Q1 2011	3.5	3.6	1.418	9.5	6.3	86.5	-7.7	-0.4	82.8	3.0	6.7	1.605
Q2 2011	0.0	3.2	1.452	7.1	5.4	85.3	-2.2	-0.4	80.6	1.4	4.7	1.607
Q3 2011	-0.1	1.4	1.345	5.9	5.0	87.4	11.2	0.3	77.0	3.3	3.7	1.562
Q4 2011	-1.2	3.5	1.297	6.1	3.4	87.4	0.9	-0.7	77.0	0.6	3.4	1.554
Q1 2012	-0.7	2.7	1.333	7.1	3.2	86.4	3.6	1.9	82.4	0.9	2.1	1.599
Q2 2012	-1.3	2.3	1.267	5.9	4.0	88.1	-1.3	-0.7	79.8	-0.7	2.0	1.569
Q3 2012	-0.6	1.6	1.286	6.5	1.9	86.3	-1.9	-2.1	77.9	4.1	2.3	1.613
Q4 2012	-1.7	2.4	1.319	7.2	3.7	86.0	-0.4	0.0	86.6	-0.2	4.0	1.626
Q1 2013	-1.0	1.1	1.282	6.3	4.2	86.3	4.0	0.4	94.2	2.7	2.9	1.519
Q2 2013	1.6	0.5	1.301	7.0	3.1	87.3	3.1	0.6	99.2	2.4	1.7	1.521
Q3 2013	1.0	1.3	1.354	7.4	3.5	86.8	2.0	2.4	98.3	3.8	2.1	1.618

*(continued on next page)*

Table A.4.—continued

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q4 2013	0.8	0.3	1.378	6.5	4.0	85.9	-0.7	2.3	105.3	2.6	1.5	1.657
Q1 2014	0.9	0.6	1.378	5.9	1.5	86.9	5.0	0.7	103.0	2.6	1.8	1.668
Q2 2014	0.2	0.1	1.369	7.0	2.7	86.8	-7.2	9.3	101.3	3.2	1.5	1.711
Q3 2014	1.2	0.3	1.263	7.5	2.2	87.2	-2.8	1.3	109.7	2.6	0.9	1.622
Q4 2014	1.5	-0.4	1.210	5.6	1.0	88.2	1.8	-0.8	119.9	2.7	-0.6	1.558
Q1 2015	2.2	-1.2	1.074	5.8	1.0	88.1	4.4	-0.3	120.0	1.5	-1.2	1.485
Q2 2015	1.6	2.2	1.115	6.2	2.9	88.5	-0.5	1.7	122.1	2.2	0.8	1.573
Q3 2015	1.2	-0.1	1.116	7.0	2.6	91.1	1.0	0.0	119.8	1.8	1.0	1.512
Q4 2015	1.6	-0.1	1.086	6.2	2.3	92.2	1.0	-0.3	120.3	2.4	-0.3	1.475
Q1 2016	-3.4	-0.5	0.991	-1.1	0.2	102.3	-4.0	-2.1	122.7	-2.1	-0.7	1.414
Q2 2016	-3.2	-0.8	0.982	0.4	-0.3	104.6	-5.7	-2.4	121.6	-2.6	-0.8	1.422
Q3 2016	-1.8	-0.6	0.976	3.8	-0.8	104.4	-5.0	-2.2	122.1	-1.9	-0.5	1.430
Q4 2016	-0.7	-0.3	0.972	5.5	-0.7	104.1	-3.8	-1.7	122.6	-0.9	-0.2	1.440
Q1 2017	0.2	0.1	0.981	6.2	-0.4	103.0	-2.8	-1.2	122.6	0.1	0.2	1.449
Q2 2017	0.9	0.4	0.991	6.3	-0.1	101.8	-1.9	-0.7	122.6	1.0	0.6	1.457
Q3 2017	1.5	0.6	1.000	6.3	0.3	100.6	-1.1	-0.4	122.6	1.7	0.8	1.464
Q4 2017	1.8	0.8	1.010	6.3	0.6	99.5	-0.3	-0.2	122.6	2.2	1.0	1.470
Q1 2018	2.0	0.9	1.019	6.3	0.8	98.6	0.4	-0.2	122.0	2.4	1.1	1.473
Q2 2018	2.1	1.0	1.027	6.4	1.1	97.8	0.9	-0.1	121.4	2.6	1.2	1.475
Q3 2018	2.1	1.1	1.035	6.5	1.4	97.1	1.2	0.0	120.8	2.7	1.3	1.477
Q4 2018	2.1	1.2	1.043	6.6	1.7	96.5	1.5	0.3	120.3	2.7	1.4	1.479
Q1 2019	2.0	1.3	1.051	6.7	2.0	96.1	1.6	0.6	119.4	2.7	1.5	1.484

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on variables.

## Notes Regarding Scenario Variables

Sources for data through the fourth quarter of 2015 (as released through January 20, 2016). The fourth-quarter 2015 values of variables marked with an asterisk (\*) are projected.

\***U.S. real GDP growth:** Percent change in real gross domestic product at an annualized rate, Bureau of Economic Analysis.

\***U.S. nominal GDP growth:** Percent change in nominal gross domestic product at an annualized rate, Bureau of Economic Analysis.

\***U.S. real disposable income growth:** Percent change in nominal disposable personal income divided by the price index for personal consumption expenditures at an annualized rate, Bureau of Economic Analysis.

\***U.S. nominal disposable income growth:** Percent change in nominal disposable personal income at an annualized rate, Bureau of Economic Analysis.

**U.S. unemployment rate:** Quarterly average of monthly data, Bureau of Labor Statistics.

**U.S. CPI inflation:** Percent change in the quarterly average of the consumer price index at an annualized rate, Bureau of Labor Statistics.

**U.S. 3-month Treasury rate:** Quarterly average of 3-month Treasury bill secondary market rate on a discount basis, H.15 Release, Selected Interest Rates, Federal Reserve Board.

**U.S. 5-year Treasury yield:** Quarterly average of the yield on 5-year U.S. Treasury bonds, constructed for the FRB/U.S. model by Federal Reserve staff based on the Svensson smoothed term structure model; see Lars E. O. Svensson (1995), "Estimating Forward Interest Rates with the Extended Nelson-Siegel Method," *Quarterly Review*, no. 3, Sveriges Riksbank, pp. 13–26.

**U.S. 10-year Treasury yield:** Quarterly average of the yield on 10-year U.S. Treasury bonds, constructed for the FRB/U.S. model by Federal Reserve staff based

on the Svensson smoothed term structure model; see id.

**U.S. BBB corporate yield:** Quarterly average of the yield on 10-year BBB-rated corporate bonds, constructed for the FRB/U.S. model by Federal Reserve staff using a Nelson-Siegel smoothed yield curve model; see Charles R. Nelson and Andrew F. Siegel (1987), “Parsimonious Modeling of Yield Curves,” *Journal of Business*, vol. 60, pp. 473–89. Data prior to 1997 is based on the WARGA database. Data after 1997 is based on the Merrill Lynch database.

**U.S. mortgage rate:** Quarterly average of weekly series for the interest rate of a conventional, conforming, 30-year fixed-rate mortgage, obtained from the Primary Mortgage Market Survey of the Federal Home Loan Mortgage Corporation.

**U.S. prime rate:** Quarterly average of monthly series, H.15 Release, Selected Interest Rates, Federal Reserve Board.

**U.S. Dow Jones Total Stock Market (Float Cap) Index:** End of quarter value, Dow Jones.

\***U.S. House Price Index:** CoreLogic, index level, seasonally adjusted by Federal Reserve staff.

\***U.S. Commercial Real Estate Price Index:** From the *Financial Accounts of the United States*, Federal Reserve Board (Z.1 release); the series corresponds to the data for price indexes: Commercial Real Estate Price Index (series FL075035503.Q divided by 1,000).

**U.S. Market Volatility Index (VIX):** Chicago Board Options Exchange, converted to quarterly by using the maximum close-of-day value in any quarter.

\***Euro area real GDP growth:** Percent change in real gross domestic product at an annualized rate, staff calculations based on Statistical Office of the European Communities via Haver, extended back using ECB Area Wide Model dataset (ECB Working Paper series no. 42).

**Euro area inflation:** Percent change in the quarterly average of the harmonized index of consumer prices

at an annualized rate, staff calculations based on Statistical Office of the European Communities via Haver.

\***Developing Asia real GDP growth:** Percent change in real gross domestic product at an annualized rate, staff calculations based on Bank of Korea via Haver; Chinese National Bureau of Statistics via CEIC; Indian Central Statistical Organization via CEIC; Census and Statistics Department of Hong Kong via CEIC; and Taiwan Directorate-General of Budget, Accounting, and Statistics via CEIC.

\***Developing Asia inflation:** Percent change in the quarterly average of the consumer price index, or local equivalent, at an annualized rate, staff calculations based on Chinese National Bureau of Statistics via CEIC; Indian Ministry of Statistics and Programme Implementation via Haver; Labour Bureau of India via CEIC; National Statistical Office of Korea via CEIC; Census and Statistic Department of Hong Kong via CEIC; and Taiwan Directorate-General of Budget, Accounting, and Statistics via CEIC.

\***Japan real GDP growth:** Percent change in gross domestic product at an annualized rate, Cabinet Office via Haver.

\***Japan inflation:** Percent change in the quarterly average of the consumer price index at an annualized rate, Ministry of Internal Affairs and Communications via Haver.

\***U.K. real GDP growth:** Percent change in gross domestic product at an annualized rate, Office for National Statistics via Haver.

**U.K. inflation:** Percent change in the quarterly average of the consumer price index at an annualized rate, Office for National Statistics via Haver.

**Exchange rates:** Quarterly average of daily rates, Bloomberg.



## Appendix B: Models to Project Net Income and Stressed Capital

This appendix describes the models used to project stressed capital ratios and pre-tax net income and its components for the 33 bank holding companies (BHCs) subject to DFAST 2016.<sup>35</sup> The models fall into five broad categories:

1. Models to project losses on loans held in the accrual loan portfolio; loans in the accrual loan portfolio are those measured under accrual accounting, rather than fair-value accounting.
2. Models to project other types of losses, including those from changes in fair value on loans held for sale or measured under the fair-value option; losses on securities, trading, and counterparty exposures; losses related to operational-risk events; and mortgage repurchase/put-back losses.
3. Models to project the components of pre-provision net revenue (PPNR) (revenues and non-credit-related expenses).
4. Models to project balance sheet items and risk-weighted assets (RWAs).
5. The calculations to project capital ratios, given projections of pre-tax net income, assumptions for determining provisions into the allowance for loan and lease losses (ALLL), and prescribed capital actions.

<sup>35</sup> In connection with DFAST 2016, and in addition to the models developed and data collected by federal banking regulators, the Federal Reserve used proprietary models or data licensed from the following providers: Andrew Davidson & Co., Inc.; BofA Merrill Lynch Global Research; BlackRock Financial Management, Inc.; Bloomberg L.P.; CB Richard Ellis, Inc.; CoreLogic Inc.; CoStar Group, Inc.; Equifax Information Services LLC; Kenneth French; Intex Solutions, Inc.; McDash Analytics, LLC, a wholly owned subsidiary of Lender Processing Services, Inc.; Markit Group; Moody's Analytics, Inc.; Moody's Investors Service, Inc.; Mergent, Inc.; Morningstar, Inc.; MSCI, Inc.; Stata-Corp LP; and Standard & Poor's Financial Services LLC. In addition, with respect to the global market shock component of the adverse and severely adverse scenarios, the Federal Reserve used proprietary data licensed from the following providers: Bank of America Corporation; Barclays Bank PLC; Bloomberg L.P.; CoreLogic, Inc.; Intex Solutions, Inc.; JPMorgan Chase & Co.; Lender Processing Services, Inc.; Markit Group; Moody's Investors Service, Inc.; New York University; and Standard & Poor's Financial Services LLC.

The Federal Reserve has updated its model descriptions to increase clarity and consistency in the amount of detail provided across these supervisory models but has either made only incremental refinement or re-estimated model parameters with additional data for a majority of the models described here. The Federal Reserve enhanced its methods for estimating operational risk and components of MRWA, as well as the calculation of regulatory capital and capital ratios (see box 1).

The supervisory models also incorporate material changes in a BHC's business plan, such as a planned merger, acquisition, consolidation, or divestiture, where applicable.

### Losses on the Accrual Loan Portfolio

More than a dozen individual models are used to project losses on loans held in the accrual loan portfolio. The individual loan types modeled can broadly be divided into wholesale loans, such as commercial and industrial (C&I) loans and commercial real estate (CRE) loans, and retail loans, including various types of residential mortgages, credit cards, student loans, auto loans, small business loans, and other consumer lending. In some cases, these major categories comprise several subcategories, each with its own loss projection model, but the models within a subcategory are similar in structure and approach. The models project losses using detailed loan portfolio data provided by the BHCs on the Capital Assessments and Stress Testing (FR Y-14) report.

Two general approaches are taken to model losses on the accrual loan portfolio. In the first approach—an approach broadly used for DFAST 2016—the models estimate expected losses under the macroeconomic scenario; that is, they project the probability of default (PD), loss given default (LGD), and exposure at default (EAD) for each quarter of the planning horizon. Expected losses in quarter  $t$  are the product of these three components:

$$Loss_t = PD_t * LGD_t * EAD_t$$

PD is generally modeled as part of a transition process in which loans move from one payment status to another (e.g., from current to delinquent) in response to economic conditions. Default is the last possible transition, and PD represents the likelihood that a loan will default during a given period. The number of payment statuses and the transition paths modeled differ by loan type.

LGD is typically defined as a percentage of EAD and is based on historical data. For some loan types, LGD is modeled as a function of borrower, collateral, or loan characteristics and the macroeconomic variables from the supervisory scenarios. For other loan types, LGD is assumed to be a fixed percentage for all loans in a category. Finally, the approach to EAD varies by loan type and depends on whether the outstanding loan amount can change between the current period and the period in which the loan defaults (e.g., for lines of credit).

In the second approach, the models capture the historical behavior of net charge-offs relative to changes in macroeconomic and financial market variables and loan portfolio characteristics.

The loss models primarily focus on losses arising from loans in the accrual loan portfolio as of December 31, 2015. The loss projections also incorporate losses on loans originated after the planning horizon begins. These incremental loan balances are calculated based on the Federal Reserve's projections of loan balances over the planning horizon. These new balances are assumed to have the same risk characteristics as those of the loan portfolio as of December 31, 2015, with the exception of loan age in the retail and CRE portfolios, where seasoning is incorporated. Where applicable, new loans are assumed to be current, and BHCs are assumed not to originate types of loans that are no longer allowed under various regulations. Loss projections also incorporate losses on loans acquired through mergers or purchase after the planning horizon begins. Additional information provided by the BHCs about the size and composition of acquired loan portfolios is used to estimate losses on acquired portfolios.

Loss projections generated by the models are adjusted to take account of purchase accounting treatment, which recognizes discounts on impaired loans acquired during mergers and any other write-downs already taken on loans held in the accrual loan

portfolio. This latter adjustment ensures that losses related to these loans are not double counted in the projections.

### Wholesale Lending: Corporate Loans

Losses stemming from default on corporate loans are projected at the loan level using an expected loss modeling framework. Corporate loans consist of a number of different categories of loans, as defined by the Consolidated Financial Statements for Holding Companies—FR Y-9C report (FR Y-9C). The largest group of these loans includes C&I loans, which are generally defined as loans to corporate or commercial borrowers with more than \$1 million in committed balances that are “graded” using a BHC’s corporate loan rating process.<sup>36</sup>

The PD for a C&I loan is projected over the planning horizon by first calculating the loan’s PD at the beginning of the planning horizon and then projecting it forward using an equation that relates historical changes in PD to changes in the macroeconomic environment. The PD as of December 31, 2015, is calculated for every C&I loan in a BHC’s portfolio using detailed, loan-level information submitted by the BHC. For publicly traded borrowers, a borrower-specific PD, based on the expected default frequency, is used. For other borrowers, the PD is estimated based on the borrower’s industry category and the BHC’s internal credit rating for the borrower, which is converted to a standardized rating scale and then mapped to a PD. Loans that are 90 days past due, in non-accrual status, or that have a Financial Accounting Standards Board Accounting Standards Codification Subtopic 310-10 (ASC 310-10) reserve as of December 31, 2015, are considered in default.

Quarterly changes in the PD after the fourth quarter of 2015 are projected over the planning horizon using a series of equations that relate historical changes in the average PD as a function of changes in macroeconomic variables, including changes in real gross domestic product (GDP), the unemployment rate, and the spread on BBB-rated corporate bonds. The equations are estimated separately by borrower industries, credit quality categories, and whether the borrower is foreign or domestic.

<sup>36</sup> All definitions of loan categories and default in this appendix are definitions used for the purposes of the supervisory stress test models and do not necessarily align with general industry definitions or classifications.

The LGD for a C&I loan at the beginning of the planning horizon is determined by the line of business, seniority of lien (if secured), country, and ASC 310-10 reserve, if applicable. The LGD is then projected forward by relating the change in the LGD to changes in the PD. In the model, the PD is used as a proxy for economic conditions, and, by construct, increases in PD generally lead to higher LGDs.

The EAD for C&I loans equals the sum of the funded balance and a portion of the unfunded commitment, which reflects the amount that is likely to be drawn down by the borrower in the event of default. This drawdown amount was estimated based on the historical drawdown experience for defaulted U.S. syndicated revolving lines of credit that are in the Shared National Credit (SNC) database.<sup>37</sup> In the case of closed-end C&I loans, the funded balance and the corresponding EAD equals the outstanding balance. The EAD for standby letters of credit and trade finance credit are conservatively assumed to equal the total commitment.

Other corporate loans that are similar in some respects to C&I loans are modeled using the same framework. These loans include owner-occupied CRE loans, capital equipment leases, loans to depositories, and other loans.<sup>38</sup> Projected losses on owner-occupied CRE loans are disclosed in total CRE losses, while projected losses for the remaining other corporate loans are disclosed in the other loans category.

### Wholesale Lending: CRE Mortgages

CRE mortgages are loans collateralized by domestic and international multifamily or nonfarm, nonresidential properties, and construction and land development loans (C&LD), as defined by the FR Y-9C report. Losses stemming from default on CRE mortgages are projected at the loan level using an expected-loss modeling framework.

The PD model for CRE mortgages is a hazard model of the probability that a loan transitions from cur-

rent to default status, given the characteristics of the loan as well as macroeconomic variables, including commercial and residential property price indices and unemployment rates, at both the geographic market and national level. Once defaulted, the model assumes the loan does not re-perform; the effect of re-performance on the estimated loan loss is captured in the LGD model. A CRE mortgage loan is considered in default if it is 90 days past due, in non-accrual status, has an ASC 310-10 reserve, or had a very low internal credit rating at the most recent time its maturity was extended. The PD model also incorporates a nonlinear increase in PD as the loan maturity nears. The effect of loan maturity on the PD is estimated to be different for income-producing and C&LD loans, and is estimated separately for each loan type using historical Capital Assessments and Stress Testing (FR Y-14Q) data. However, the proportional effect of other loan characteristics and the macroeconomic variables is assumed to be the same for income-producing properties and C&LD loans and is estimated using a single model for both types of loans using historical commercial mortgage-backed security data.

The LGD for CRE mortgages is estimated using FR Y-14Q data on ASC 310-10 reserves. The model first estimates the probability that a defaulted loan will have losses as a function of loan characteristics and macroeconomic variables including commercial property prices, residential house prices, and the unemployment rate. Then, using loans with losses, the model estimates the loss on the CRE mortgage as a function of the expected probability of loss, characteristics of the loan, and residential house prices and the unemployment rate. Finally, the EAD for CRE mortgages is assumed to equal the loan's full committed balance for both income producing and C&LD loans.

### Retail Lending: Residential Mortgages

Residential mortgages held in BHC portfolios include first and junior liens—both closed-end loans and revolving credits—that are secured by one- to four-family residential real estate as defined by the FR Y-9C report. Losses stemming from default on residential mortgages are projected at the loan level using an expected-loss modeling framework.<sup>39</sup>

<sup>37</sup> SNCs have commitments of greater than \$20 million and are held by three or more regulated participating entities. For additional information, see “Shared National Credit Program,” Board of Governors of the Federal Reserve System, [www.federalreserve.gov/bankinfo/snc.htm](http://www.federalreserve.gov/bankinfo/snc.htm).

<sup>38</sup> The corporate loan category also includes loans that are dissimilar from typical corporate loans, such as securities lending and farmland loans, which are generally a small share of BHC portfolios. For these loans, a conservative and uniform loss rate based on analysis of historical data was assigned.

<sup>39</sup> To predict losses on new originations over the planning horizon, newly originated loans are assumed to have the same risk characteristics as the existing portfolio, with the exception of loan age and delinquency status.

The PD model for first-lien residential mortgages estimates the probability that a loan transitions to different payment statuses, including current, delinquent, servicing transfer, default, and paid off. Separate PD models are estimated for three types of closed-end, first-lien mortgages: fixed-rate, adjustable-rate, and option adjustable-rate mortgages. The PD model specification varies somewhat by loan type; however, in general, each model estimates the probability that a loan transitions from one payment state to another (e.g., from current to delinquent or from delinquent to default) over a single quarter, given the characteristics of the loan, borrower, and underlying property as well as macroeconomic variables, including local house prices, the statewide unemployment rate, and interest rates.<sup>40</sup>

Origination vintage effects are also included in the estimation in part to capture unobserved characteristics of loan quality. The historical data used to estimate this model are industrywide, loan-level data from many banks and mortgage loan originators. These estimated PD models are used to simulate default for each loan reported by each BHC under the supervisory scenarios. Loans that are 180 days or more past due as of December 31, 2015, are considered in default.

The LGD for residential mortgages is estimated using two models. One model estimates the amount of time that elapses between default and real estate owned (REO) disposition (timeline model), while the other relates characteristics of the defaulted loan, such as the property value at default, to one component of losses net of recoveries—the proceeds from the sale of the property net of foreclosure expenses (loss model).<sup>41</sup>

These net proceeds are calculated from historical data on loan balances, servicer advances, and losses from defaulted loans in private-label, residential mortgage-backed securities (RMBS). These RMBS data are also used to estimate the LGD loss model separately for prime jumbo loans, subprime, and alt-A loans.<sup>42</sup>

<sup>40</sup> The effects of loan modification and evolving modification practices are captured in the probability that a delinquent loan transitions back to current status (re-performing loans).

<sup>41</sup> Other components of losses net of recoveries are calculated directly from available data. Private mortgage insurance is not incorporated into the LGD models. Industry data suggest that insurance coverage on portfolio loans is infrequent and cancellation or nullification of guarantees was a common occurrence during the recent downturn.

<sup>42</sup> The differences between characteristics of mortgages in RMBS and mortgages in bank portfolios, such as loan-to-value (LTV)

ratio, are controlled for by including various risk characteristics in the LGD model, such as original LTV ratio, credit score, and credit quality segment (prime, alt-A, and subprime).

Finally, using the elapsed time between default and REO disposition estimated in the timeline model, total estimated losses are allocated into credit losses on the defaulted loans, which are fully written down at the time of default, or net losses arising from the eventual sale of the underlying property (other real estate owned—or OREO—expenses), which flow through PPNR. House price changes from the time of default to foreclosure completion (REO acquisition) are captured in LGD, while house price changes after foreclosure completion and before sale of the property are captured in OREO expenses. The LGD for loans already in default as of December 31, 2015, includes further home price declines through the point of foreclosure.

Home equity loans (HELs) are junior-lien, closed-end loans, and home equity lines of credit (HELOCs) are revolving open-end loans extended under lines of credit. Both are secured by one- to four-family residential real estate as defined by the FR Y-9C report. Losses stemming from default on HELs and HELOCs are projected at the loan level in an expected loss framework that is similar to first-lien mortgages, with a few differences. The PD model for HELOCs estimates the probability that the loan transitions from its status as of December 31, 2015, to payment statuses including current, impaired, default, prepaid, and paid off. At each point in time, each transition model is a function of account characteristics, customer characteristics, economic environment, and past delinquency history. Economic drivers include interest rates, home prices, and the unemployment rate.

For second-lien HELs and HELOCs that are current as of December 31, 2015, but are behind a seriously delinquent first-lien, the model assumes elevated default rates under the supervisory scenarios. In addition, most HELOC contracts require only payment of interest on the outstanding line balance during the period when the line can be drawn upon (draw period). When the line reaches the end of its draw period (end-of-draw), the outstanding line balance either becomes immediately payable or converts to a fully amortizing loan. HELOCs that reach the end-of-draw period are assumed to prepay at a higher rate just prior to end-of-draw and to default at a higher rate just after end-of-draw than HELOCs that are still in their draw period.

ratio, are controlled for by including various risk characteristics in the LGD model, such as original LTV ratio, credit score, and credit quality segment (prime, alt-A, and subprime).



The LGD for HELs and HELOCs is estimated using data from private-label mortgage-backed securities, using the same models used for closed-end first-lien mortgages, but the estimated total mortgage losses for properties with a defaulted HEL or HELOC are allocated based on the lien position. Finally, for HELOCs, EAD is assumed to equal the credit limit.

### Retail Lending: Credit Cards

Credit cards include both general purpose and private-label credit cards, as well as charge cards, as defined by the FR Y-9C report. Credit card loans extended to individuals are included in retail credit cards, while credit cards loans extended to businesses and corporations are included in other retail lending and are modeled separately. Losses stemming from defaults on credit cards are projected at the loan level using an expected-loss modeling framework.

The PD model for credit cards estimates the probability that a loan transitions from delinquency status to default status, given the characteristics of the account and borrower as well as macroeconomic variables, including unemployment. When an account defaults, it is assumed to be closed and does not return to current status. Credit card loans are considered in default when they are 120 days past due. Because the relationship between the PD and its determinants can vary with the initial status of the account, separate transition models are estimated for accounts that are current and active, current and inactive accounts, and delinquent accounts. In addition, because this relationship can also vary with time horizons, separate transition models are estimated for short-, medium-, and long-term horizons. The historical data used to estimate this model are industry-wide, loan-level data from many banks, and separate models were estimated for bank cards and charge cards. The PD model is used to forecast the PD for each loan reported by each BHC in the Capital Assessments and Stress Testing (FR Y-14M) report.

The LGD for credit cards is assumed to be a fixed percentage and is calculated separately for bank cards and charge cards based on historical industry data on LGD during the most recent economic downturn. The EAD for credit cards equals the sum of the amount outstanding on the account and a portion of the credit line, which reflects the amount that is likely to be drawn down by the borrower between the beginning of the planning horizon and the time of default. This drawdown amount is estimated as a function of account and borrower charac-

teristics. Because this relationship can vary with the initial status of the account and time to default, separate models are estimated for current and delinquent accounts and for accounts with short-, medium-, and long-term transition to default. For accounts that are current, separate models were also estimated for different credit-line-size segments.

### Retail Lending: Auto

Auto loans are consumer loans extended for the purpose of purchasing new and used automobiles and light motor vehicles as defined by the FR Y-9C report. Losses stemming from default in auto retail loan portfolios are projected at the portfolio segment level using an expected loss framework.

The PD model for auto loans estimates the probability that a loan transitions from either a current or delinquent status to default status, given the characteristics of the loan and borrower as well as macroeconomic variables, including house prices and the unemployment rate. Default on auto loans is defined based on either the payment status (120 days past due), actions of the borrower (bankruptcy), or actions of the lender (repossession). Because the relationship between the PD and its determinants can vary with the initial status of the account, separate transition models are estimated for accounts that are current and delinquent accounts. The historical data used to estimate this model are loan-level, credit bureau data.

The LGD for auto loans is estimated given the characteristics of the loan as well as macroeconomic variables, such as the unemployment rate and used car prices. The historical data used to estimate this model are pooled, segment-level data provided by the BHCs on the FR Y-14Q reports. The EAD for auto loans is based on the typical pattern of amortization of loans that ultimately defaulted in historical credit bureau data. The estimated EAD model captures the average amortization by loan age for current and delinquent loans over nine quarters.

### Retail Lending: Other Retail Lending

Other retail lending includes the small business loan portfolio, the other consumer loan portfolio, the student loan portfolio, the business and corporate credit card portfolio, and international retail portfolio. Losses due to default on other retail lending are forecast by modeling net charge-off rates as a function of portfolio risk characteristics and macroeconomic

variables. This model is then used to predict future charge-offs consistent with the macroeconomic variables provided in the supervisory scenarios.<sup>43</sup> The predicted net charge-off rate is applied to balances projected by the Federal Reserve to estimate projected losses. Default is defined as 90 days or more past due for domestic and international other consumer loans and 120 days or more past due for student loans, small business loans, corporate cards, and international retail portfolios. The net charge-off rate is modeled in a system of equations that also includes the delinquency rate and the default rate.

In general, each rate is modeled in an autoregressive specification that also includes the rate in the previous delinquency state, characteristics of the underlying loans, macroeconomic variables, such as changes in the unemployment rate and disposable personal income growth, and, in some cases, seasonal factors. The models are specified to implicitly capture roll-rate dynamics. In some cases, the characteristics of the underlying loans, such as dummy variables for each segment of credit score at origination, are also interacted with the macroeconomic variables to capture differences in sensitivities across risk segments to changes in the macroeconomic environment. Each retail product type is modeled separately and, for each product type, economic theory and the institutional characteristics of the product guide the inclusion and lag structure of the macroeconomic variables in the model.

Because of data limitations and the relatively small size of these portfolios, the net charge-off rate for each loan type is modeled using industry-wide, monthly data at the segment level. For most portfolios, these data are collected on the FR Y-14Q Retail schedule, which segments each portfolio by characteristics such as borrower credit score; loan vintage; type of facility (e.g., installment versus revolving); and, for international portfolios, geographic region.<sup>44</sup>

Charge-off rates are projected by applying the estimated system of equations to each segment of the BHC's loan portfolio as of December 31, 2015. The portfolio-level charge-off rate equals the dollar-weighted average of the segment-level charge-off

rates.<sup>45</sup> These projected charge-off rates are applied to the balances projected by the Federal Reserve to calculate portfolio losses.

## Loan-Loss Provisions for the Accrual Loan Portfolio

Losses on the accrual loan portfolio flow into net income through provisions for loan and lease losses. Provisions for loan and lease losses equal projected loan losses for the quarter plus the amount needed for the ALLL to be at an appropriate level at the end of the quarter, which is a function of projected future loan losses. The appropriate level of ALLL at the end of a given quarter is generally assumed to be the amount needed to cover projected loan losses over the next four quarters.<sup>46</sup> Because this calculation of ALLL is based on projected losses under the adverse or severely adverse scenarios, it may differ from a BHC's actual level of ALLL at the beginning of the planning horizon, which is based on the BHC's assessment of future losses in the current economic environment. Any difference between these two measures of ALLL is smoothed into the provisions projection over the nine quarters of the planning horizon. Because projected loan losses include off-balance sheet commitments, the BHC's allowance at the beginning of the planning horizon for credit losses on off-balance sheet exposures (as reported on the FR Y-9C report) is subtracted from the provisions projection in equal amounts each quarter.

## Other Losses

### Loans Held for Sale or Measured under the Fair-Value Option

Certain loans are not accounted for on an accrual basis. Loans to which the fair-value option (FVO) is applied are valued as mark-to-market assets. Loans that are held-for-sale (HFS) are carried at the lower of cost or market value.

<sup>43</sup> For the government-guaranteed portion of BHCs' student loan portfolios, an assumption of low PD and LGD is applied.

<sup>44</sup> Business and corporate credit card portfolio data, which were previously collected on the FR Y-14Q Retail schedule, are now collected at the loan level on the FR Y-14M Credit Card schedule and subsequently aggregated to the segment level.

<sup>45</sup> The dollar weights used are based on the distribution reported during the previous observation period. This method assumes that the distribution of loans across risk segments, other than delinquency status segments, remains constant over the projection period.

<sup>46</sup> For loan types modeled in a charge-off framework, the appropriate level of ALLL was adjusted to reflect the difference in timing between the recognition of expected losses and that of charge-offs.

FVO/HFS loan portfolios are identified by BHCs and reported on the FR Y-14Q report. Losses related to FVO/HFS loans are recognized in earnings on the income statement at the time of the devaluation and are estimated by applying scenario-specific interest rate and credit spread projections.

Losses on C&I and CRE loans and commitments are estimated by revaluing each loan or commitment each quarter using a stressed discount yield. The initial discount yield is based on the loan or commitment's initial fair value, settlement date, maturity date, and interest rate. Quarterly movements in the discount yield over the planning horizon are assumed to equal the stressed change in corporate bond yields of the same credit rating and maturity, adjusted for potential changes in credit ratings. The models estimate changes in the fair value of the loan in a given scenario on a committed-balance basis.

Losses on retail loans held under FVO/HFS accounting are estimated over the nine quarters of the planning horizon using a duration-based approach. This approach uses balances on these loans reported on the FR Y-14Q report, estimates of portfolio-weighted duration, and quarterly changes in stressed spreads from the macroeconomic scenario. Estimates are calculated separately by vintage and loan type. No losses are assumed for residential mortgage loans under forward contract with the government-sponsored enterprises (GSEs).

Gains and losses on FVO loan hedges are modeled on a quarterly basis, using a set of scenario-specific factor projections and factor sensitivities submitted by BHCs. Profits and losses are calculated for a variety of hedge types, including corporate credit, rates, equities, and commercial mortgage-backed securities (CMBS). These profits and losses are netted from estimated losses on the FVO loans.

Projections of fair value losses assume that each position has a constant maturity over the projection horizon. Aggregate gains and losses on hedges at the firm level are netted against projected gains and losses on wholesale and retail exposures in order to arrive at final estimates.

### **Securities in the Available-for-Sale and Held-to-Maturity Portfolios**

Securities in the available-for-sale and held-to-maturity (AFS/HTM) portfolios include U.S. Treasury, U.S. Agency, municipal, mortgage-backed, asset-

backed, corporate debt, and equity securities. The AFS/HTM portfolio does not include securities held for trading; losses on these securities are projected separately. Changes in the value of the AFS/HTM portfolio can potentially impact a BHC's capital in two ways. First, other-than-temporary impairment (OTTI) losses on AFS/HTM securities and other realized gains and losses are recognized in the net income of all BHCs. Second, under regulatory capital rules, advanced approaches BHCs and other BHCs that opt into advanced approaches treatment for AOCI must incorporate into Common Equity Tier 1 (CET1) capital the accumulated other comprehensive income (AOCI) that arises, in part, from changes in the value of AFS securities. Both OTTI and unrealized gains and losses on AFS securities are projected at the security level, based on FR Y-14Q data, and aggregated up to the BHC level.

OCI associated with AFS securities arises from changes in the unrealized gains and losses on those securities, which are calculated as the difference between each security's fair value and its amortized cost. The amortized cost of each AFS security is collected by the Federal Reserve and equals the purchase price of a debt security periodically adjusted if the debt security was purchased at a price other than par or face value or has had a prior impairment recognized in earnings. The fair value of each AFS security is projected over the nine-quarter planning horizon using one of three methods: a present-value calculation, a full revaluation, or a duration-based approach. The simple present-value calculation is used to directly re-price U.S. Treasury securities. This calculation incorporates both the timing and amount of contractual cash flows and quarterly Treasury yields from the macroeconomic scenario. Full revaluation uses a security-specific discounted cash flow model to re-price agency MBS. Finally, the duration-based approach is used for all other securities. The duration-based approach forecasts the quarterly price path based on an approximation of the relationship between the securities price and its yield, taking into account security-specific information. Separate spread projections are estimated for securities in each asset class using projections of interest rates, corporate credit spreads, volatility, and asset prices included in supervisory scenarios. Final projections of OCI take into account applicable interest hedges on the securities.

Securities experiencing an impairment over the forecast horizon may be at risk of an OTTI, which affects

earnings and regulatory capital.<sup>47</sup> An impairment occurs when the fair value of a security falls below its amortized cost. If the BHC intends to sell a security, or if it is more likely than not that the BHC will have to sell without recovering its investment, then any impairment on that security will flow through the BHC's earnings and the full write-down to fair value is recognized periodically as OTTI until the quarter in which the security is sold. Otherwise, a BHC must recognize as a charge to earnings only the credit component of OTTI, which reflects a non-temporary decline in present value below amortized cost. The supervisory OTTI models are designed to incorporate the credit component only, unless the firm will be required to sell the security.<sup>48</sup>

U.S. Treasury and U.S. government agency obligations and U.S. government agency or GSE mortgage-backed securities are assumed not to be at risk for the kind of credit impairment that results in credit-related OTTI charges. The supervisory OTTI models test all other securities for the potential for OTTI impairment under the stress scenario. For all securities at risk for impairment that would result in credit-related OTTI charges, future balances are assumed to have risk characteristics similar to those of the initial balances.

Securities at risk of an impairment that would result in credit-related OTTI charges can be grouped into three categories: securitizations, direct debt obligations, and equity securities.

Securitized obligations include CMBS, U.S. non-agency RMBS, collateralized loan obligations (CLOs), auto asset-backed securities (ABS), credit card ABS, and foreign RMBS. The present value of security-level cash flows is calculated based on the projected collateral cash flows and the structure of the security using the contractual rate of interest on the security as the discount rate. The projected collateral cash flows of securitized obligations depend on the performance of the collateral pool, which is projected using internally developed or third-party models that are conditioned on macroeconomic variables

such as the unemployment rate, real estate prices, GDP, and interest rates. The CMBS, U.S. non-agency RMBS, and CLO models project the performance of each loan in the pool. These models are broken into PD and LGD components and include applicable loan-specific variables, such as loan-to-value ratio, issuer credit rating, and loan geography. Other models project the performance of the overall portfolio. All models consider variables specifying the type of loan and loan delinquency status.

Direct debt obligations are issued by a single issuer with recourse and include corporate bonds and sovereign bonds. In the models, whether a credit-related OTTI charge is taken on these securities is based on the potential for a rating downgrade. The potential of a rating downgrade is determined by projected changes in the one-year PD of the issuer for corporate bonds and the credit default swap (CDS) spread for sovereign bonds in response to changes in macroeconomic drivers, such as interest rates, spreads, and regional GDP. If the projected value of either the PD or the CDS spread crosses a threshold level consistent with a "CCC/Caa" rating or below, then the security is considered to have an OTTI, to the extent the projected present value of cash flow is below amortized cost. If a security is considered OTTI, then the present value of cash flows is projected using historical data on bond recovery rates given default.

Projected OTTI charges on other direct debt obligations, including municipal bonds and security types with smaller levels of exposure, are based on the statistical relationship between observed OTTI write-downs and the evolution of unrealized losses over the scenario as projected by the fair value model. The probability of an OTTI write-down and the severity of the write-down are estimated separately. Observed OTTI write-downs are based on data reported on FR Y-14Q and unrealized loss is estimated based on the initial amortized cost and projections of the fair value model for the security. Projected OTTI charges on equity securities are based on the projected fair value of each security as determined by the path of the U.S. equities index and the sensitivity of each security's returns to the overall returns of the index.

Balances at risk of OTTI are assumed not to decrease. After a security is written down as OTTI, the difference between its original value and its post-OTTI value is assumed to be invested in securities with the same risk characteristics. Similarly, the fair value projections assume that duration and remaining life remain constant. Net increases projected by

<sup>47</sup> Recognition and Presentation of Other-Than-Temporary-Impairments, Financial Accounting Standards Board, Staff Position No. FAS 115-2 and FAS 124-2 (April 9, 2009), [www.fasb.org/jsp/FASB/Document\\_C/DocumentPage?cid=1176154545419&acceptedDisclaimer=true](http://www.fasb.org/jsp/FASB/Document_C/DocumentPage?cid=1176154545419&acceptedDisclaimer=true).

<sup>48</sup> The model assumes that a collateralized loan obligation (CLO) considered a covered fund under the Board's Regulation VV (the Volcker Rule) is required to be sold during the projection horizon, and that the CLO will be held until the date when it is required to be sold. See 12 CFR part 248.

the Federal Reserve in a BHC's securities portfolio after December 31, 2015, are assumed to be in short-term, riskless assets, and no OTTI or OCI are projected on these securities.

### Trading and Private Equity

Losses related to trading positions that are included in the supervisory stress test are of two primary types. The first type arises from changes in the mark-to-market value of the trading positions. The second type is associated with either the potential or the realized default of obligors and counterparties. The models used to project losses on trading positions under the global market shock account for both types of losses and rely on the market values and stressed revaluation of positions provided by BHCs on the FR Y-14Q.

Mark-to-market gains and losses on trading positions are estimated by applying the movements in the global market shock factors to the associated market values or market value movements provided by BHCs. The global market shock specifies movements in numerous market factors, such as equity prices, foreign exchange rates, interest rates and spreads, commodity prices, securitized product prices, and private equity values. BHCs provide the market value of their securitized products and private equity positions. For all other market factors, BHCs provide the estimated market value change (i.e., the profit or loss) across the trading book associated with a single, limited movement in a market factor (e.g., +1 basis point movement in a foreign exchange rate) or a range of positive and negative movements in a market factor (e.g., -30 percent, -25 percent, +30 percent for a foreign exchange rate). These market values and market value changes are collected for the same factors specified in the global market shock. The computation of gains and losses is performed by applying the market factor movements specified in the global market shock to the information reported by BHCs. For securitized products and private equity positions, the market values are multiplied by the global market shock market value movements. For all other market factors the gains and losses are computed by either multiplication of the global market shock movement and a single associated market value change or by interpolation using the range of associated market value changes. The ranges are used to capture the non-linear market value changes associated with certain assets.

Losses that are related to the potential adverse changes in credit quality of a counterparty to derivatives transactions are captured through credit valuation adjustments (CVA). CVA is an adjustment to the mark-to-market valuation of a BHC's trading positions that accounts for the risk of adverse changes in counterparty credit quality prior to default on its obligations. BHCs report their baseline and stressed CVA on a counterparty-level on the FR Y-14Q as well as the associated baseline and stressed values of the components of CVA: expected exposure, PD, and LGD. The loss estimate is computed as the difference between the baseline and the stressed CVA for all counterparties.

In addition to mark-to-market and CVA losses on trading positions, the losses associated with the default of issuers of credit instruments is captured through an incremental default risk (IDR) model that estimates the losses in excess of mark-to-market losses. The exposure types captured through this issuer default-loss estimate include single-name products (e.g., corporate bonds and single name CDS), index and index-tranche products, and securitized products, which are distinct from the bilateral derivatives agreements and securities financing transactions included in the largest counterparty default scenario component (described below). A distribution of simulated sets of issuer defaults is created through a random jump-to-default framework that is based on factors such as probability of default and obligor correlations. Default distributions are simulated at the level of individual obligors or at the instrument and rating level, depending on exposure type. Losses associated with each default are derived from exposure at default, which is based on position information reported on the FR Y-14Q, and loss given default, which is based on historical information. The loss estimate is the loss associated with a tail percentile of the distribution, which is calibrated to the severity of the macroeconomic scenario.

### Largest Counterparty Default

To estimate losses from the default of counterparties to derivatives and securities financing transactions, the Federal Reserve applied a counterparty default scenario component to the eight BHCs that have substantial trading or custodial operations. The loss is based on the assumed instantaneous and unexpected default of a BHC's largest counterparty, defined as the counterparty that would produce the largest total

net stressed loss if it were to default on all of its derivatives and securities financing transactions. Net stressed loss was estimated using net stressed current exposure (CE), which is derived by applying the global market shock to the unstressed positions as well as any collateral posted or received and reported by BHCs. For derivative agreements, applicable CDS hedges and CVA are netted from the net stressed current exposure. A recovery rate of 10 percent is assumed for both net stressed CE and applicable CDS hedges.

Similar to the global market shock component, the loss associated with the counterparty default component occurs in the first quarter of the projection and is an add-on to the macroeconomic conditions and financial market environment in the supervisory scenarios. Certain sovereign entities (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States) and designated clearing counterparties were excluded when selecting the largest counterparty.

### Losses Related to Operational-Risk Events

Losses related to operational-risk events are a component of PPNR and include losses stemming from events such as fraud, employee lawsuits, or computer system or other operating disruptions. Operational-risk loss estimates include the average of loss estimates from two modeling approaches and estimates of potential costs from unfavorable litigation outcomes, which reflect elevated litigation risk and the associated increase in legal reserves observed in recent years. In both modeling approaches—a panel regression model and a historical simulation approach—projections of operational-risk-related losses for the 33 BHCs are modeled for each of seven operational-risk categories identified in the Board’s advanced approaches rule.<sup>49</sup> Both models are based on historical operational-loss data submitted by the BHCs on the FR Y-14Q report.

In the panel regression model, projections of losses related to operational-risk events are the product of two components: loss frequency and loss severity. Loss frequency is modeled as a function of macroeconomic variables and BHC-specific characteristics.

<sup>49</sup> The seven operational-loss event type categories identified in the Federal Reserve’s advanced approaches rule are internal fraud; external fraud; employment practices and workplace safety; clients, products, and business practices; damage to physical assets; business disruption and system failures; and execution, delivery, and process management. See 12 CFR 217.101(b).

Macroeconomic variables, such as the real GDP growth rate, stock market return and volatility, and the unemployment rate, are included directly in the panel regression model and/or used to project certain firm-specific characteristics. Loss is projected as a product of projected loss frequency from the panel regression model and loss severity, which equals the average historical dollar loss per event in each operational-risk category. Total operational loss estimates equal the sum of loss forecasts for each operational-risk category. Because the relationship between the frequency of operational-risk events and macroeconomic conditions varies across the categories, separate models were estimated for each category.<sup>50</sup>

In the historical simulation model, losses at different percentiles of simulated, nine-quarter loss distributions are used as a proxy for the expected operational losses conditional on the macroeconomic scenarios. The loss frequency is assumed to follow a Poisson distribution, in which the estimated intensity parameter of the Poisson distribution is specific to event type and informed by historical industry loss frequency scaled to the assets of individual BHCs. The tail of loss severity is also informed by historical industry loss severity scaled to the assets of individual BHCs.

The distribution of aggregate annual losses is simulated by repeatedly drawing the annual event frequency from this frequency distribution, and the severity of those events is drawn from historical realized loss data for all BHCs. The percentiles of loss distributions, which are used to estimate stressed losses, are tied to the frequency of severe recessions for the severely adverse scenario and the frequency of recessions of all types for the adverse scenario. Loss forecasts for an individual BHC are the sum of the BHC’s loss estimates for each event type.

### Mortgage Repurchase Losses

Mortgage repurchase expenses are a component of PPNR. Mortgage loans sold to investors (GSEs, private-label security (PLS) investors, or whole loan

<sup>50</sup> Operational-risk losses due to damage to physical assets, business disruption and system failure, employment practices, and workplace safety are not expected to be dependent on the macroeconomic environment and therefore were set equal to each BHC’s average nine-quarter operational-risk loss in that category. External fraud losses of firms focused on credit card activities were modeled using each BHC’s average quarterly losses during the period from the beginning of the financial crisis in the third quarter of 2007 through the second quarter of 2009.

buyers) typically include certain representations and warranties describing characteristics of the loan and its underwriting. If these representations and warranties are proven to have been breached, the loan is “put back” to the seller of the loan, who is contractually obligated to repurchase the loan at par and incur any credit loss the loan may suffer. Breaches of representations and warranties may also be settled by settlement (or make-whole) payments from the seller to the investor, and disputes may in some cases be resolved through litigation.

Mortgage repurchase losses for loans sold with representations and warranties liability are estimated in two parts. The first part is the estimation of credit losses for all loans sold by a BHC that have outstanding representations and warranties liability, including loans sold as whole loans, into private-label securities or to Fannie Mae and Freddie Mac, or loans insured by the government. Credit loss rates for each vintage of mortgage loans are estimated by applying the scenario projections of house prices to a third-party model. This part takes into account both losses recognized to date and future losses projected over the remaining lifetime of the loans. For loans sold to Fannie Mae and Freddie Mac, industrywide credit loss rates are adjusted to reflect the relative credit performance of loans sold by each BHC and are applied to the BHC’s outstanding balances. These estimates are based on vintage-level data on original and current unpaid balances, current delinquency status, and losses recognized to date. Estimated credit loss rates are applied to each BHC’s repurchase-eligible sold loan population, as determined by Y-14A data.

The second part is the estimation of the share of this credit loss that may be ultimately put back to the selling BHC (whether through contractual repurchase, a settlement agreement, or litigation loss). Put-back rates are estimated by investor as follows, based on either historical information on settlement payments or data on the volume of put-backs to mortgage sellers:

- **Whole loans and loans sold into PLS**—The estimated put-back rate is based on information from recent settlement activities in the banking industry and incorporates adjustments for supervisory assessments of BHC-specific put-back risk.
- **Government-insured loans**—The estimated put-back rate is also based on information from recent settlement activities.

- **GSE loans**—The estimated put-back rate is based on historical information on the settlements and repurchases of loans sold to Fannie Mae or Freddie Mac, with consideration given to the relative seasoning of each vintage and the time interval between default and demand.

Mortgage repurchase expenses are netted against actual mortgage put-back reserves as reported by the BHCs.

## Pre-provision Net Revenue

PPNR is forecast with a mix of models: structural using granular data on individual positions; autoregressive models that relate the components of a BHC’s revenues and non-credit-related expenses, expressed as a share of relevant asset or liability balances, to BHC characteristics and to macroeconomic variables; and simple nonparametric models based on recent firm-level performance.

When choosing the level of detail at which to model the components of PPNR, consideration is given both to the BHCs’ business models and the ability to accurately model components of revenue. Movements in PPNR stemming from operational-risk events, mortgage repurchases, or OREO are modeled in separate frameworks, described earlier in this document.

The PPNR model estimates and projections are adjusted where appropriate to avoid double counting movements associated with these items. In addition, gains or losses associated with debt valuation adjustments (DVA) for firms’ own liabilities are removed from the historical PPNR data series used to estimate the model, and, as a result, PPNR projections do not include DVA gains or losses under the supervisory scenarios.

Separate models are estimated for 22 different components of PPNR. Components of interest income modeled include income on loans, Treasury securities, mortgage-backed securities, federal funds and repurchase agreements, other securities, trading assets, and all other interest income. The five components of interest expense modeled include interest expense on deposits, federal funds and repurchase agreements, trading liabilities and other borrowed money (OBM), subordinated debt, and all other interest expenses. Noninterest, non-trading income

modeled include service charges on deposits, fiduciary income, income from insurance, investment banking and net servicing fees, and all other noninterest income. Finally, the three components of noninterest expense (compensation expense, fixed asset expense, and all other noninterest expense) as well as trading revenue are modeled as part of PPNR.

Autoregressive models are estimated using historical, merger-adjusted data from the FR Y-9C report. The autoregressive model specifications vary by PPNR component. But, in general, each component is related to BHC-specific characteristics, including, in some cases, total assets, asset composition, funding sources, and liabilities. In some PPNR components, these measures of BHC portfolio and business activity do not adequately capture the significant variation across BHCs, so BHC-specific controls are included in the models for these components. Macroeconomic variables used to project PPNR include yields on Treasury securities, corporate bond yields, mortgage rates, real GDP, and stock market price movements and volatility. The specific macroeconomic variables differ across equations based on statistical predictive power and economic interpretation.

For other volatile components of PPNR, the Federal Reserve follows alternative approaches to the autoregressive model. For example, some noninterest income and noninterest expense components that are highly volatile quarter-to-quarter but do not exhibit a clear cyclical pattern are modeled as a constant forecast ratio to reflect a most recent eight-quarter median performance. Finally, the forecast of interest expenses on subordinated debt is based on security-level information and takes into account differences across firms in their maturity schedule and debt pricing in each of the supervisory scenarios.

Trading revenues are volatile because they include both changes in the market value of trading assets and fees from market-making activities. Forecasts of PPNR from trading activities at the six BHCs subject to the global market shock are modeled in the aggregate and then allocated to each BHC based on a measure of the BHC's market share. In addition, because forecasts of trading revenues are intended to include the effect of the relevant macroeconomic variables and to exclude the effect of the global market shock, net trading revenue is modeled using a median regression approach to lessen the influence of extreme movements in trading revenue associated with the recent financial crisis. Trading revenues for the remaining BHCs are modeled in an autoregres-

sive framework similar to that of other PPNR components.

## Balance-Sheet Items and Risk-Weighted Assets

The BHC balance sheet is projected based on a model that relates industrywide loan and non-loan asset growth to each other and to broader economic variables including a proxy for loan supply. The model allows for both long-run relationships between the industry aggregates and macroeconomic variables, as well as short-term dynamics that cause deviations from these relationships. It is estimated using aggregate data from the Federal Reserve's Financial Accounts of the United States (Z.1) and the Bureau of Economic Analysis's National Income and Product Accounts.

Industry loan and asset growth rates are projected over the planning horizon using the macroeconomic variables prescribed in the supervisory scenario. Over this horizon, each BHC is assumed to maintain a constant share of the industry's total assets, total loans, and total trading assets. In addition, each BHC is assumed to maintain a constant mix within their loan and trading asset categories. These assumptions are applied as follows

- Each category of loans at a BHC is assumed to grow at the projected rate of total loans in the industry.
- Each category of trading assets at a BHC is assumed to grow as a function of both the projected rate of total assets and the projected market value of trading assets in the industry.
- All other assets of a BHC, including securities, are assumed to grow at the projected rate of non-loan assets in the industry.
- A BHC's cash holdings level, the residual category, is set such that the sum of cash and noncash assets grows at the projected rate of total assets.
- Growth in securities is assumed to be in short-term, riskless assets.

Balance sheet projections incorporate expected changes to a BHC's business plan, such as mergers, acquisitions, and divestitures that are likely to have a material impact on its capital adequacy and funding profile. BHC-submitted data are used to adjust the projected balance sheet in the quarter when the



change is expected to occur. Once adjusted, assets are assumed to grow at the same rate as the pre-adjusted balance sheet. Only submitted divestitures that are either completed or contractually agreed upon before April 5, 2016, are incorporated.

The projection of RWAs is accomplished in two parts and is based on the tenets of the standardized approach and market risk rule in the Board's Regulation Q.<sup>51</sup> The first part requires estimating the path of credit risk-weighted assets based on exposures from loans and securities.<sup>52</sup> The second requires estimating the path of MRWA based on exposures under the market risk rule.<sup>53</sup>

Credit RWA projection is a straightforward implementation of the standardized approach. Most risk weights are imputed from the FR Y-9C report and held fixed throughout the projection horizon. Risk weights are applied to appropriate balance paths and summed across categories. This treatment is consistent with the assumption that the general features of the credit portfolio and non-trading book assets remain constant during the projection period.

MRWA projections incorporate the assumption that market risk is sensitive to the economic scenario. In particular, the path of MRWAs is sensitive to changes in the projected volatility of the underlying mix of trading assets. While the underlying mix of exposures subject to the market risk rule is assumed to remain constant throughout the scenario, some elements of MRWAs are affected by changes in market conditions assumed in supervisory scenarios. For example, projected value-at-risk (VaR) calculations—an important element of MRWAs—rise as the volatility of the portfolio's underlying assets increases. Similarly, a firm's incremental risk charge and its comprehensive risk measure are affected by the volatility of credit products. The remaining categories of MRWAs are assumed to evolve according to projections of a BHC's trading assets. These properties make the trajectory of MRWAs more dynamic than credit RWAs because both the underlying path of trading assets and the volatility associated with the portfolio evolve.

<sup>51</sup> 12 CFR part 217, subparts D and F. The use of the advanced approaches for calculating risk-based capital ratios under the capital plan and stress test rules has been indefinitely deferred. See 80 Fed. Reg. 75,419 and 12 CFR 225.8(d)(8), 252.12(n), 252.42(m), and 252.52(n).

<sup>52</sup> 12 CFR part 217, subpart D.

<sup>53</sup> 12 CFR part 217, subpart F.

## Regulatory Capital

The final modeling step translates the projections of revenues, expenses, losses, provisions, balances, and RWAs from the models described above into estimates of regulatory capital for each BHC under the supervisory scenarios. Regulatory capital is calculated using the definition of capital in the Board's Regulation Q.<sup>54</sup> Regulatory capital is calculated consistent with the requirements that will be in effect during the projected quarter of the planning horizon.<sup>55</sup> The definition of regulatory capital changes throughout the planning horizon in accordance with the transition arrangements in the revised regulatory capital framework.<sup>56</sup>

Estimated regulatory capital incorporates estimates of net income and taxable income based on supervisory projections of total losses and revenues. A consistent tax rate across all BHCs is applied to taxable income to calculate after-tax net income over the projection period.<sup>57</sup> The consistent tax rate is also used to generate projections of deferred tax assets (DTAs) from temporary timing differences and net operating losses. DTA projections are also based on a firm's starting tax position, including net operating loss carrybacks and tax history. Then, a valuation allowance is estimated to determine whether a BHC will have sufficient taxable income in the future to realize its DTAs. Changes in the valuation allowance are factored into after-tax net income. Finally, projected after-tax income incorporates each BHC's reported one-time revenue and expense items and adjusts for income attributable to minority interests. Projected after-tax net income is employed to project quarter-by-quarter changes in retained earnings.<sup>58</sup>

<sup>54</sup> 12 CFR part 217.

<sup>55</sup> See 12 CFR 225.8(e)(2)(i)(A) and 252.56(a)(2).

<sup>56</sup> See 12 CFR part 217, subpart G.

<sup>57</sup> For a discussion of the effect of changing this tax rate assumption, see Board of Governors of the Federal Reserve System, *Dodd-Frank Act Stress Test 2013: Supervisory Stress Test Methodology and Results*, (Washington: Board of Governors, March 2013), [www.federalreserve.gov/newsevents/press/bcreg/dfast\\_2013\\_results\\_20130314.pdf](http://www.federalreserve.gov/newsevents/press/bcreg/dfast_2013_results_20130314.pdf), box 2.

<sup>58</sup> The Federal Reserve used the following capital action assumptions in projecting post-stress capital levels and ratios: (1) for the first quarter of 2016, each company's actual capital actions as of the end of that quarter; (2) for each quarter from the second quarter of 2016 through the first quarter of 2018, each company's projections of capital included: (i) common stock dividends equal to the quarterly average dollar amount of common stock dividends that the company paid in the previous year (that is, from the second quarter of 2015 through the first quarter of 2016) 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

The quarterly change in CET1 capital before adjustments and deductions equals projected after-tax net income minus capital distributions (dividends and any other actions that disperse equity), plus any issuance or other corporate actions that increase equity, plus other changes in equity capital such as other comprehensive income, and changes incident to business combinations.

Projected regulatory capital levels are calculated using the applicable capital rules to incorporate, as appropriate, projected levels of non-common capital and certain items that are subject to adjustment or deduction in capital. Some items, such as DVA, goodwill, and intangible assets (other than mortgage servicing assets), and components of AOCI other than unrealized gains (losses) on AFS securities, are assumed to remain constant at their starting value over the planning horizon. For other items, BHC projections—with

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merger or acquisition is reflected in the covered company's pro forma balance sheet estimates; (ii) 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; (iii) 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 (iv) 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 covered company's pro forma balance sheet estimates. These assumptions are generally consistent with the capital action assumptions BHCs are required to use in their Dodd-Frank Act company-run stress tests. See 12 CFR 252.56(b)(2).

supervisory adjustments—were factored into the regulatory capital calculation. Those items include the reported path of additional tier 1 and tier 2 capital and significant investments in the capital of unconsolidated financial institutions in the form of common stock. Other items subject to deduction, including DTAs and mortgage servicing assets, are projected under each supervisory scenario. The Federal Reserve also includes the effects of certain planned mergers, acquisitions, or divestitures in its projections of capital and the components of capital.

The projections of regulatory capital levels are combined with Federal Reserve projections of total assets for the leverage ratio and risk-weighted assets to calculate regulatory capital ratios. The risk-based regulatory capital ratios incorporate the standardized approach for calculating risk-weighted assets.<sup>59</sup> Risk-weighted assets and total assets for the leverage ratio are projected based on supervisory projections of each firm's balance sheet. The capital ratio denominators are adjusted for items subject to adjustment or deduction from capital, consistent with the projection of each item in the numerator of the regulatory capital ratios and the regulatory capital requirements. Projected capital levels and ratios are not adjusted to account for any differences between projected and actual performance of the BHCs during the time the supervisory stress test results were being produced in the second quarter of 2016.

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<sup>59</sup> See 12 CFR part 217.

## Appendix C: BHC-Specific Results

Tables begin on next page.

**Table C.1.A. Ally Financial Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	9.2	6.1	6.1
Tier 1 capital ratio	11.1	8.3	8.3
Total capital ratio	12.5	10.0	10.0
Tier 1 leverage ratio	9.7	7.2	7.2

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	6.1	5.3
First-lien mortgages, domestic	0.3	3.5
Junior liens and HELOCs, domestic	0.2	8.4
Commercial and industrial <sup>2</sup>	1.9	4.5
Commercial real estate, domestic	0.1	3.1
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	3.7	6.1
Other loans <sup>4</sup>	0.0	9.4

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	135.8	146.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	4.8	2.9
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	7.4	
Realized losses/gains on securities (AFS/HTM)	0.5	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-3.2	-1.9
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.1.B. Ally Financial Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	9.2	8.1	8.1
Tier 1 capital ratio	11.1	10.2	10.2
Total capital ratio	12.5	11.9	11.9
Tier 1 leverage ratio	9.7	8.9	8.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	4.1	3.6
First-lien mortgages, domestic	0.2	2.3
Junior liens and HELOCs, domestic	0.1	5.6
Commercial and industrial <sup>2</sup>	1.2	2.7
Commercial real estate, domestic	0.1	1.6
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	2.6	4.3
Other loans <sup>4</sup>	0.0	5.4

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	135.8	149.5

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	5.4	3.2
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	4.9	
Realized losses/gains on securities (AFS/HTM)	0.3	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	0.1	0.1
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.2.A. American Express Company**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.4	12.3	11.4
Tier 1 capital ratio	13.5	13.4	12.6
Total capital ratio	15.2	15.1	14.3
Tier 1 leverage ratio	11.7	10.9	10.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	10.6	9.8
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial <sup>2</sup>	3.6	10.5
Commercial real estate, domestic	0.0	0.0
Credit cards	6.8	9.5
Other consumer <sup>3</sup>	0.0	13.8
Other loans <sup>4</sup>	0.2	7.9

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	135.2	138.8

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	19.2	11.4
Other revenue <sup>3</sup>	1.3	
<i>less</i>		
Provisions	13.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.4	
<i>equals</i>		
Net income before taxes	6.2	3.7
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-2.2	-2.5

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.2.B. American Express Company**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.4	14.3	11.7
Tier 1 capital ratio	13.5	15.5	12.9
Total capital ratio	15.2	17.1	14.6
Tier 1 leverage ratio	11.7	12.4	11.3

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	8.1	7.4
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial <sup>2</sup>	2.7	7.8
Commercial real estate, domestic	0.0	0.0
Credit cards	5.2	7.3
Other consumer <sup>3</sup>	0.0	12.0
Other loans <sup>4</sup>	0.1	4.6

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	135.2	139.1

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	20.1	11.8
Other revenue <sup>3</sup>	1.3	
<i>less</i>		
Provisions	10.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.2	
<i>equals</i>		
Net income before taxes	10.8	6.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-2.2	-2.6

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.3.A. BancWest Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	8.6	8.6
Tier 1 capital ratio	12.3	8.6	8.6
Total capital ratio	14.6	11.0	11.0
Tier 1 leverage ratio	10.1	7.0	7.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	4.5	6.7
First-lien mortgages, domestic	0.4	4.9
Junior liens and HELOCs, domestic	0.2	4.2
Commercial and industrial <sup>2</sup>	1.4	9.0
Commercial real estate, domestic	1.2	7.1
Credit cards	0.1	18.2
Other consumer <sup>3</sup>	0.9	5.7
Other loans <sup>4</sup>	0.4	6.3

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	72.6	78.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	2.7	2.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	5.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-2.8	-2.8
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).



**Table C.3.B. BancWest Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	11.2	11.2
Tier 1 capital ratio	12.3	11.2	11.2
Total capital ratio	14.6	13.6	13.6
Tier 1 leverage ratio	10.1	9.1	9.1

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.7	4.0
First-lien mortgages, domestic	0.3	3.5
Junior liens and HELOCs, domestic	0.1	2.5
Commercial and industrial <sup>2</sup>	0.8	5.5
Commercial real estate, domestic	0.6	3.5
Credit cards	0.1	14.8
Other consumer <sup>3</sup>	0.6	3.4
Other loans <sup>4</sup>	0.3	4.0

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	72.6	79.4

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	3.0	3.0
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-0.1	-0.1
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.4.A. Bank of America Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.6	8.1	8.1
Tier 1 capital ratio	12.9	9.6	9.6
Total capital ratio	15.7	12.5	12.5
Tier 1 leverage ratio	8.6	6.4	6.4

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	53.7	5.6
First-lien mortgages, domestic	7.5	3.8
Junior liens and HELOCs, domestic	10.1	13.0
Commercial and industrial <sup>2</sup>	11.9	5.0
Commercial real estate, domestic	5.7	7.7
Credit cards	11.9	11.5
Other consumer <sup>3</sup>	1.8	2.2
Other loans <sup>4</sup>	4.8	2.6

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	1,403.3	1,522.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	45.7	2.0
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	59.2	
Realized losses/gains on securities (AFS/HTM)	0.7	
Trading and counterparty losses <sup>4</sup>	20.0	
Other losses/gains <sup>5</sup>	2.2	
<i>equals</i>		
Net income before taxes	-36.3	-1.6
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	8.5	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-2.7	3.9

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.4.B. Bank of America Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.6	10.5	10.5
Tier 1 capital ratio	12.9	12.0	12.0
Total capital ratio	15.7	14.3	14.3
Tier 1 leverage ratio	8.6	8.0	8.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	35.8	3.7
First-lien mortgages, domestic	5.1	2.6
Junior liens and HELOCs, domestic	7.6	9.6
Commercial and industrial <sup>2</sup>	7.1	3.0
Commercial real estate, domestic	2.6	3.5
Credit cards	9.3	9.0
Other consumer <sup>3</sup>	1.2	1.5
Other loans <sup>4</sup>	2.8	1.5

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	1,403.3	1,562.8

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	61.8	2.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	35.3	
Realized losses/gains on securities (AFS/HTM)	0.3	
Trading and counterparty losses <sup>4</sup>	7.8	
Other losses/gains <sup>5</sup>	1.8	
<i>equals</i>		
Net income before taxes	16.6	0.7
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.9	
<i>Other effects on capital</i>		
AOCI included in capital (billions of dollars) <sup>7</sup>	-2.7	-5.5

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.5.A. The Bank of New York Mellon Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.5	11.2	10.5
Tier 1 capital ratio	13.1	13.1	12.2
Total capital ratio	13.5	13.6	12.7
Tier 1 leverage ratio	6.0	5.9	5.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.1	3.2
First-lien mortgages, domestic	0.2	2.3
Junior liens and HELOCs, domestic	0.0	8.5
Commercial and industrial <sup>2</sup>	0.1	2.6
Commercial real estate, domestic	0.2	8.6
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.3	11.2
Other loans <sup>4</sup>	1.3	2.6

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	159.9	169.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	9.2	2.2
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	2.6	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses <sup>4</sup>	1.5	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	4.9	1.2
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.8	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-2.0	-1.8

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.5.B. The Bank of New York Mellon Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.5	12.4	11.3
Tier 1 capital ratio	13.1	14.3	12.8
Total capital ratio	13.5	14.6	13.2
Tier 1 leverage ratio	6.0	6.3	5.8

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	1.3	1.9
First-lien mortgages, domestic	0.1	1.4
Junior liens and HELOCs, domestic	0.0	6.0
Commercial and industrial <sup>2</sup>	0.1	1.6
Commercial real estate, domestic	0.1	3.8
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.3	8.9
Other loans <sup>4</sup>	0.8	1.5

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	159.9	171.9

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	12.7	3.0
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	1.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.6	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	10.3	2.5
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.3	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-2.0	-2.9

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.6.A. BB&T Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.3	6.9	6.9
Tier 1 capital ratio	11.8	8.5	8.5
Total capital ratio	14.3	10.9	10.9
Tier 1 leverage ratio	9.8	7.0	7.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	7.7	5.3
First-lien mortgages, domestic	1.1	3.3
Junior liens and HELOCs, domestic	0.3	3.5
Commercial and industrial <sup>2</sup>	1.2	4.7
Commercial real estate, domestic	3.0	7.7
Credit cards	0.3	13.3
Other consumer <sup>3</sup>	1.3	6.6
Other loans <sup>4</sup>	0.6	3.2

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	166.6	188.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	7.0	3.1
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	9.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-2.2	-1.0
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.6.B. BB&T Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.3	8.9	8.9
Tier 1 capital ratio	11.8	10.5	10.5
Total capital ratio	14.3	12.4	12.4
Tier 1 leverage ratio	9.8	8.5	8.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	4.5	3.1
First-lien mortgages, domestic	0.7	2.1
Junior liens and HELOCs, domestic	0.2	2.2
Commercial and industrial <sup>2</sup>	0.8	3.0
Commercial real estate, domestic	1.4	3.6
Credit cards	0.2	10.2
Other consumer <sup>3</sup>	0.9	4.5
Other loans <sup>4</sup>	0.3	1.8

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	166.6	189.5

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	8.6	3.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	5.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	3.6	1.6
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.7.A. BBVA Compass Bancshares, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.7	6.5	6.5
Tier 1 capital ratio	11.1	6.8	6.8
Total capital ratio	13.7	9.3	9.3
Tier 1 leverage ratio	9.0	5.4	5.4

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	3.4	5.4
First-lien mortgages, domestic	0.6	3.8
Junior liens and HELOCs, domestic	0.2	5.8
Commercial and industrial <sup>2</sup>	1.1	5.4
Commercial real estate, domestic	1.1	8.6
Credit cards	0.1	15.7
Other consumer <sup>3</sup>	0.2	5.5
Other loans <sup>4</sup>	0.1	1.8

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	68.8	73.8

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	1.1	1.1
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.8	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-2.8	-3.0
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).



**Table C.7.B. BBVA Compass Bancshares, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.7	9.1	9.1
Tier 1 capital ratio	11.1	9.4	9.4
Total capital ratio	13.7	11.5	11.5
Tier 1 leverage ratio	9.0	7.5	7.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.0	3.1
First-lien mortgages, domestic	0.4	2.4
Junior liens and HELOCs, domestic	0.1	4.2
Commercial and industrial <sup>2</sup>	0.6	3.3
Commercial real estate, domestic	0.5	4.0
Credit cards	0.1	12.6
Other consumer <sup>3</sup>	0.2	4.1
Other loans <sup>4</sup>	0.1	1.1

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	68.8	75.0

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	1.6	1.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	2.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-0.4	-0.4
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.8.A. BMO Financial Corp.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	5.9	5.9
Tier 1 capital ratio	11.9	6.4	6.4
Total capital ratio	14.9	8.7	8.7
Tier 1 leverage ratio	9.3	4.9	4.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	4.0	5.8
First-lien mortgages, domestic	0.3	3.5
Junior liens and HELOCs, domestic	0.5	10.8
Commercial and industrial <sup>2</sup>	1.8	6.9
Commercial real estate, domestic	0.6	7.3
Credit cards	0.0	11.0
Other consumer <sup>3</sup>	0.1	2.1
Other loans <sup>4</sup>	0.6	4.3

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	91.5	96.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	0.9	0.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	4.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-3.9	-3.0
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.8.B. BMO Financial Corp.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	8.5	8.5
Tier 1 capital ratio	11.9	8.9	8.9
Total capital ratio	14.9	11.1	11.1
Tier 1 leverage ratio	9.3	6.8	6.8

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.6	3.7
First-lien mortgages, domestic	0.2	2.1
Junior liens and HELOCs, domestic	0.4	8.4
Commercial and industrial <sup>2</sup>	1.2	4.6
Commercial real estate, domestic	0.3	3.5
Credit cards	0.0	8.6
Other consumer <sup>3</sup>	0.1	1.4
Other loans <sup>4</sup>	0.4	2.5

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	91.5	99.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	1.5	1.2
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-1.4	-1.1
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.9.A. Capital One Financial Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	8.2	8.2
Tier 1 capital ratio	12.4	9.4	9.4
Total capital ratio	14.6	11.4	11.4
Tier 1 leverage ratio	10.6	8.0	8.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	26.7	11.2
First-lien mortgages, domestic	0.3	1.1
Junior liens and HELOCs, domestic	0.1	6.7
Commercial and industrial <sup>2</sup>	2.7	9.8
Commercial real estate, domestic	1.3	4.4
Credit cards	18.0	19.3
Other consumer <sup>3</sup>	3.5	8.1
Other loans <sup>4</sup>	0.7	4.0

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	265.7	288.5

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	26.0	7.5
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	30.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.1	
<i>equals</i>		
Net income before taxes	-4.6	-1.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.5	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.4	-0.3

<sup>1</sup> Average assets is the nine-quarter average of total assets.<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.<sup>5</sup> 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.<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.9.B. Capital One Financial Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	10.0	9.8
Tier 1 capital ratio	12.4	11.2	11.0
Total capital ratio	14.6	13.1	13.1
Tier 1 leverage ratio	10.6	9.5	9.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	20.4	8.5
First-lien mortgages, domestic	0.2	0.8
Junior liens and HELOCs, domestic	0.1	5.3
Commercial and industrial <sup>2</sup>	1.9	6.7
Commercial real estate, domestic	0.6	2.0
Credit cards	14.6	15.5
Other consumer <sup>3</sup>	2.6	5.9
Other loans <sup>4</sup>	0.4	2.2

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	265.7	289.8

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	27.1	7.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	22.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.1	
<i>equals</i>		
Net income before taxes	4.6	1.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.1	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.4	-0.8

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.10.A. Citigroup Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	15.3	9.2	9.2
Tier 1 capital ratio	15.5	10.5	10.3
Total capital ratio	18.5	13.5	13.4
Tier 1 leverage ratio	10.2	7.0	6.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	45.8	7.0
First-lien mortgages, domestic	2.2	2.8
Junior liens and HELOCs, domestic	2.3	9.3
Commercial and industrial <sup>2</sup>	8.8	5.5
Commercial real estate, domestic	1.2	9.9
Credit cards	21.1	14.0
Other consumer <sup>3</sup>	3.6	11.4
Other loans <sup>4</sup>	6.5	3.3

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	1,138.7	1,230.5

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	43.7	2.4
Other revenue <sup>3</sup>	0.3	
<i>less</i>		
Provisions	50.1	
Realized losses/gains on securities (AFS/HTM)	1.6	
Trading and counterparty losses <sup>4</sup>	16.8	
Other losses/gains <sup>5</sup>	3.0	
<i>equals</i>		
Net income before taxes	-27.6	-1.5
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	2.6	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-25.1	-26.2

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.10.B. Citigroup Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	15.3	11.3	11.3
Tier 1 capital ratio	15.5	12.6	12.6
Total capital ratio	18.5	15.2	15.2
Tier 1 leverage ratio	10.2	8.3	8.3

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	32.5	4.9
First-lien mortgages, domestic	1.0	1.3
Junior liens and HELOCs, domestic	1.4	5.5
Commercial and industrial <sup>2</sup>	5.9	3.6
Commercial real estate, domestic	0.6	4.3
Credit cards	16.8	11.1
Other consumer <sup>3</sup>	3.1	9.8
Other loans <sup>4</sup>	3.7	1.9

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	1,138.7	1,260.8

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	53.1	2.9
Other revenue <sup>3</sup>	0.3	
<i>less</i>		
Provisions	32.5	
Realized losses/gains on securities (AFS/HTM)	0.9	
Trading and counterparty losses <sup>4</sup>	8.4	
Other losses/gains <sup>5</sup>	2.5	
<i>equals</i>		
Net income before taxes	9.0	0.5
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-3.2	
<i>Other effects on capital</i>		
AOCI included in capital (billions of dollars) <sup>7</sup>	-25.1	-32.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.11.A. Citizens Financial Group, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.7	8.8	8.8
Tier 1 capital ratio	12.0	9.0	9.0
Total capital ratio	15.3	12.3	12.3
Tier 1 leverage ratio	10.5	7.8	7.8

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	5.0	4.8
First-lien mortgages, domestic	0.4	2.8
Junior liens and HELOCs, domestic	1.1	6.1
Commercial and industrial <sup>2</sup>	1.4	4.9
Commercial real estate, domestic	0.8	6.6
Credit cards	0.2	12.1
Other consumer <sup>3</sup>	0.9	4.5
Other loans <sup>4</sup>	0.2	2.5

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	114.1	122.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	3.4	2.3
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	5.7	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.1	
<i>equals</i>		
Net income before taxes	-2.5	-1.7
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).



**Table C.11.B. Citizens Financial Group, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.7	10.8	10.8
Tier 1 capital ratio	12.0	11.0	11.0
Total capital ratio	15.3	14.0	14.0
Tier 1 leverage ratio	10.5	9.5	9.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	3.2	3.1
First-lien mortgages, domestic	0.3	1.8
Junior liens and HELOCs, domestic	0.8	4.3
Commercial and industrial <sup>2</sup>	0.8	2.9
Commercial real estate, domestic	0.4	3.1
Credit cards	0.1	9.6
Other consumer <sup>3</sup>	0.7	3.5
Other loans <sup>4</sup>	0.1	1.4

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	114.1	124.5

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	4.2	2.9
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	0.8	0.5
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.12.A. Comerica Incorporated**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.5	8.3	8.3
Tier 1 capital ratio	10.5	8.3	8.3
Total capital ratio	12.7	10.2	10.2
Tier 1 leverage ratio	10.2	7.9	7.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.3	4.4
First-lien mortgages, domestic	0.1	3.3
Junior liens and HELOCs, domestic	0.1	3.6
Commercial and industrial <sup>2</sup>	1.0	3.6
Commercial real estate, domestic	0.6	5.6
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.1	8.5
Other loans <sup>4</sup>	0.4	6.2

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	69.7	74.8

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	1.3	1.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	2.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-1.1	-1.5
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.12.B. Comerica Incorporated**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.5	10.0	10.0
Tier 1 capital ratio	10.5	10.0	10.0
Total capital ratio	12.7	11.5	11.5
Tier 1 leverage ratio	10.2	9.5	9.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	1.2	2.4
First-lien mortgages, domestic	0.0	1.9
Junior liens and HELOCs, domestic	0.0	2.2
Commercial and industrial <sup>2</sup>	0.6	2.1
Commercial real estate, domestic	0.3	2.5
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.0	6.8
Other loans <sup>4</sup>	0.2	3.3

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	69.7	75.8

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	1.9	2.5
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	1.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	0.8	1.1
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.13.A. Deutsche Bank Trust Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	34.1	30.1	30.1
Tier 1 capital ratio	34.1	30.1	30.1
Total capital ratio	34.3	31.2	31.2
Tier 1 leverage ratio	13.9	12.2	12.2

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	0.8	3.8
First-lien mortgages, domestic	0.1	2.4
Junior liens and HELOCs, domestic	0.0	8.4
Commercial and industrial <sup>2</sup>	0.2	5.7
Commercial real estate, domestic	0.3	9.0
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.0	4.4
Other loans <sup>4</sup>	0.2	1.8

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	21.9	23.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	0.5	1.0
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	1.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-0.4	-0.8
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.13.B. Deutsche Bank Trust Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	34.1	31.9	31.9
Tier 1 capital ratio	34.1	31.9	31.9
Total capital ratio	34.3	32.5	32.5
Tier 1 leverage ratio	13.9	12.8	12.8

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	0.4	2.0
First-lien mortgages, domestic	0.1	1.6
Junior liens and HELOCs, domestic	0.0	6.0
Commercial and industrial <sup>2</sup>	0.1	3.5
Commercial real estate, domestic	0.1	3.5
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.0	3.6
Other loans <sup>4</sup>	0.1	1.0

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	21.9	23.8

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	0.7	1.3
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	0.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	0.2	0.4
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.14.A. Discover Financial Services**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.9	12.4	11.9
Tier 1 capital ratio	14.7	13.1	12.6
Total capital ratio	16.5	14.5	14.1
Tier 1 leverage ratio	12.9	11.4	11.3

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	9.3	12.4
First-lien mortgages, domestic	0.0	4.6
Junior liens and HELOCs, domestic	0.0	14.2
Commercial and industrial <sup>2</sup>	0.0	15.5
Commercial real estate, domestic	0.0	22.9
Credit cards	7.6	12.8
Other consumer <sup>3</sup>	1.6	10.8
Other loans <sup>4</sup>	0.0	7.2

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	75.8	81.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	13.0	14.3
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	11.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	1.7	1.9
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.14.B. Discover Financial Services**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.9	14.4	12.9
Tier 1 capital ratio	14.7	15.0	13.7
Total capital ratio	16.5	16.5	15.4
Tier 1 leverage ratio	12.9	13.0	12.3

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	7.4	9.7
First-lien mortgages, domestic	0.0	3.3
Junior liens and HELOCs, domestic	0.0	9.4
Commercial and industrial <sup>2</sup>	0.0	11.8
Commercial real estate, domestic	0.0	10.4
Credit cards	6.0	9.9
Other consumer <sup>3</sup>	1.4	9.1
Other loans <sup>4</sup>	0.0	4.1

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	75.8	82.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	13.3	14.5
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	8.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	4.4	4.8
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.15.A. Fifth Third Bancorp**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	9.8	6.8	6.8
Tier 1 capital ratio	10.9	7.8	7.8
Total capital ratio	14.1	11.1	11.1
Tier 1 leverage ratio	9.5	6.8	6.8

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	5.5	5.8
First-lien mortgages, domestic	0.6	4.3
Junior liens and HELOCs, domestic	0.4	5.4
Commercial and industrial <sup>2</sup>	2.1	5.7
Commercial real estate, domestic	1.3	12.2
Credit cards	0.4	16.2
Other consumer <sup>3</sup>	0.4	3.0
Other loans <sup>4</sup>	0.3	3.0

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	121.3	131.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	4.0	2.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	6.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-2.1	-1.4
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).



**Table C.15.B. Fifth Third Bancorp**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	9.8	9.0	9.0
Tier 1 capital ratio	10.9	9.9	9.9
Total capital ratio	14.1	12.7	12.7
Tier 1 leverage ratio	9.5	8.6	8.6

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	3.4	3.6
First-lien mortgages, domestic	0.4	3.2
Junior liens and HELOCs, domestic	0.3	4.1
Commercial and industrial <sup>2</sup>	1.3	3.4
Commercial real estate, domestic	0.6	5.6
Credit cards	0.3	12.2
Other consumer <sup>3</sup>	0.3	2.1
Other loans <sup>4</sup>	0.2	1.8

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	121.3	133.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	5.2	3.5
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	1.9	1.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.16.A. The Goldman Sachs Group, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.6	10.2	8.4
Tier 1 capital ratio	15.6	11.5	9.8
Total capital ratio	18.7	14.3	12.6
Tier 1 leverage ratio	9.3	6.9	6.3

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	4.8	6.8
First-lien mortgages, domestic	0.4	50.1
Junior liens and HELOCs, domestic	0.0	8.0
Commercial and industrial <sup>2</sup>	2.0	12.0
Commercial real estate, domestic	0.3	6.5
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.1	4.4
Other loans <sup>4</sup>	2.1	4.3

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	524.1	567.1

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	12.1	1.4
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	5.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	18.0	
Other losses/gains <sup>5</sup>	3.9	
<i>equals</i>		
Net income before taxes	-15.4	-1.7
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.6	-0.7

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.16.B. The Goldman Sachs Group, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.6	11.9	11.4
Tier 1 capital ratio	15.6	12.6	12.6
Total capital ratio	18.7	15.3	15.3
Tier 1 leverage ratio	9.3	7.5	7.4

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.9	4.1
First-lien mortgages, domestic	0.4	46.6
Junior liens and HELOCs, domestic	0.0	5.8
Commercial and industrial <sup>2</sup>	1.1	6.9
Commercial real estate, domestic	0.1	2.7
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.1	3.7
Other loans <sup>4</sup>	1.2	2.5

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	524.1	575.4

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	16.0	1.8
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	10.1	
Other losses/gains <sup>5</sup>	3.1	
<i>equals</i>		
Net income before taxes	-0.5	-0.1
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.6	-0.7

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.17.A. HSBC North America Holdings Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	15.7	9.1	9.1
Tier 1 capital ratio	17.3	11.0	11.0
Total capital ratio	22.6	15.2	15.2
Tier 1 leverage ratio	10.0	6.2	6.2

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	5.4	5.9
First-lien mortgages, domestic	2.1	7.9
Junior liens and HELOCs, domestic	0.6	16.3
Commercial and industrial <sup>2</sup>	1.5	4.0
Commercial real estate, domestic	0.7	6.3
Credit cards	0.1	15.0
Other consumer <sup>3</sup>	0.0	8.0
Other loans <sup>4</sup>	0.5	3.7

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	170.8	177.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	-1.2	-0.4
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	5.8	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	1.7	
<i>equals</i>		
Net income before taxes	-8.8	-3.1
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	2.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.3	1.1

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.17.B. HSBC North America Holdings Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	15.7	10.2	10.2
Tier 1 capital ratio	17.3	12.0	12.0
Total capital ratio	22.6	15.3	15.3
Tier 1 leverage ratio	10.0	6.8	6.8

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	3.5	3.9
First-lien mortgages, domestic	1.5	5.7
Junior liens and HELOCs, domestic	0.5	13.3
Commercial and industrial <sup>2</sup>	0.9	2.4
Commercial real estate, domestic	0.3	2.6
Credit cards	0.1	12.0
Other consumer <sup>3</sup>	0.0	6.7
Other loans <sup>4</sup>	0.3	2.0

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	170.8	182.9

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	1.0	0.3
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	1.3	
<i>equals</i>		
Net income before taxes	-3.7	-1.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.1	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.3	-0.8

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.18.A. Huntington Bancshares Incorporated**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	9.8	5.0	5.0
Tier 1 capital ratio	10.5	6.3	6.3
Total capital ratio	12.6	8.6	8.6
Tier 1 leverage ratio	8.8	5.0	5.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	3.1	4.8
First-lien mortgages, domestic	0.3	3.9
Junior liens and HELOCs, domestic	0.3	3.7
Commercial and industrial <sup>2</sup>	0.9	5.0
Commercial real estate, domestic	0.7	7.0
Credit cards	0.1	15.1
Other consumer <sup>3</sup>	0.5	4.2
Other loans <sup>4</sup>	0.2	3.5

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	58.4	81.5

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	2.2	2.3
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.7	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-1.6	-1.8
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.18.B. Huntington Bancshares Incorporated**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	9.8	7.7	7.7
Tier 1 capital ratio	10.5	8.9	8.9
Total capital ratio	12.6	11.1	11.1
Tier 1 leverage ratio	8.8	7.1	7.1

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.0	3.1
First-lien mortgages, domestic	0.2	2.8
Junior liens and HELOCs, domestic	0.2	2.7
Commercial and industrial <sup>2</sup>	0.6	3.2
Commercial real estate, domestic	0.4	3.4
Credit cards	0.1	11.9
Other consumer <sup>3</sup>	0.4	3.0
Other loans <sup>4</sup>	0.1	2.0

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	58.4	82.9

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	2.8	2.9
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	2.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	0.4	0.5
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.19.A. JPMorgan Chase & Co.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.0	8.3	8.3
Tier 1 capital ratio	13.7	9.9	9.9
Total capital ratio	16.0	12.1	12.1
Tier 1 leverage ratio	8.5	6.2	6.2

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	53.4	6.1
First-lien mortgages, domestic	5.4	2.7
Junior liens and HELOCs, domestic	5.4	9.2
Commercial and industrial <sup>2</sup>	13.7	9.4
Commercial real estate, domestic	4.5	4.6
Credit cards	13.9	11.0
Other consumer <sup>3</sup>	2.5	3.6
Other loans <sup>4</sup>	8.0	4.5

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	1,465.3	1,603.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	64.9	2.6
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	60.2	
Realized losses/gains on securities (AFS/HTM)	2.1	
Trading and counterparty losses <sup>4</sup>	32.6	
Other losses/gains <sup>5</sup>	0.5	
<i>equals</i>		
Net income before taxes	-30.5	-1.2
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-3.0	
<i>Other effects on capital</i>		
AOCI included in capital (billions of dollars) <sup>7</sup>	Actual 2015:Q4	2018:Q1
	0.1	-2.7

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).



**Table C.19.B. JPMorgan Chase & Co.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.0	10.6	10.6
Tier 1 capital ratio	13.7	12.2	12.2
Total capital ratio	16.0	14.1	14.1
Tier 1 leverage ratio	8.5	7.5	7.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	33.9	3.8
First-lien mortgages, domestic	2.7	1.3
Junior liens and HELOCs, domestic	3.4	5.7
Commercial and industrial <sup>2</sup>	8.6	5.9
Commercial real estate, domestic	2.0	2.1
Credit cards	10.7	8.4
Other consumer <sup>3</sup>	2.0	2.8
Other loans <sup>4</sup>	4.5	2.5

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	1,465.3	1,614.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	78.8	3.2
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	34.3	
Realized losses/gains on securities (AFS/HTM)	0.9	
Trading and counterparty losses <sup>4</sup>	13.7	
Other losses/gains <sup>5</sup>	0.4	
<i>equals</i>		
Net income before taxes	29.5	1.2
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-4.4	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.1	-4.2

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.20.A. KeyCorp**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.9	6.4	6.4
Tier 1 capital ratio	11.4	6.8	6.8
Total capital ratio	13.0	8.9	8.9
Tier 1 leverage ratio	10.7	6.0	6.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	4.1	5.1
First-lien mortgages, domestic	0.3	4.5
Junior liens and HELOCs, domestic	0.4	4.3
Commercial and industrial <sup>2</sup>	1.4	5.2
Commercial real estate, domestic	0.9	6.1
Credit cards	0.1	12.5
Other consumer <sup>3</sup>	0.5	7.4
Other loans <sup>4</sup>	0.4	2.9

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	90.0	124.9

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	3.1	2.4
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	4.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-1.7	-1.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.20.B. KeyCorp**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.9	8.8	8.8
Tier 1 capital ratio	11.4	9.2	9.2
Total capital ratio	13.0	11.0	11.0
Tier 1 leverage ratio	10.7	8.1	8.1

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.5	3.0
First-lien mortgages, domestic	0.3	3.3
Junior liens and HELOCs, domestic	0.3	3.1
Commercial and industrial <sup>2</sup>	0.8	2.9
Commercial real estate, domestic	0.4	2.8
Credit cards	0.1	9.6
Other consumer <sup>3</sup>	0.4	5.6
Other loans <sup>4</sup>	0.2	1.7

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	90.0	127.1

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	4.0	3.1
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	2.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.1	
<i>equals</i>		
Net income before taxes	1.3	1.0
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.21.A. M&T Bank Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	6.9	6.9
Tier 1 capital ratio	12.7	8.2	8.2
Total capital ratio	14.9	10.3	10.3
Tier 1 leverage ratio	10.9	6.9	6.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	5.2	5.8
First-lien mortgages, domestic	1.5	5.6
Junior liens and HELOCs, domestic	0.4	6.3
Commercial and industrial <sup>2</sup>	0.7	4.1
Commercial real estate, domestic	2.1	6.8
Credit cards	0.1	15.0
Other consumer <sup>3</sup>	0.4	6.4
Other loans <sup>4</sup>	0.1	3.9

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	94.7	101.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	3.1	2.5
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	6.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-2.9	-2.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.21.B. M&T Bank Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	9.6	9.6
Tier 1 capital ratio	12.7	10.8	10.8
Total capital ratio	14.9	12.7	12.7
Tier 1 leverage ratio	10.9	9.1	9.1

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	3.2	3.5
First-lien mortgages, domestic	1.1	3.9
Junior liens and HELOCs, domestic	0.3	4.7
Commercial and industrial <sup>2</sup>	0.5	2.7
Commercial real estate, domestic	1.0	3.2
Credit cards	0.0	12.0
Other consumer <sup>3</sup>	0.2	4.4
Other loans <sup>4</sup>	0.1	2.1

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	94.7	102.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	4.0	3.1
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	0.6	0.5
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.22.A. Morgan Stanley**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	16.4	10.0	9.1
Tier 1 capital ratio	18.4	11.6	10.2
Total capital ratio	22.0	14.6	13.5
Tier 1 leverage ratio	8.3	5.4	4.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	3.3	3.3
First-lien mortgages, domestic	0.4	1.7
Junior liens and HELOCs, domestic	0.0	8.0
Commercial and industrial <sup>2</sup>	1.1	8.5
Commercial real estate, domestic	0.5	5.5
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.2	0.9
Other loans <sup>4</sup>	1.2	3.0

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	362.9	403.0

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	7.8	1.0
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	4.3	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses <sup>4</sup>	13.0	
Other losses/gains <sup>5</sup>	3.0	
<i>equals</i>		
Net income before taxes	-12.5	-1.5
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	1.1	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-1.2	-0.5

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.22.B. Morgan Stanley**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	16.4	12.8	12.7
Tier 1 capital ratio	18.4	14.5	14.3
Total capital ratio	22.0	17.4	17.4
Tier 1 leverage ratio	8.3	6.5	6.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.0	1.9
First-lien mortgages, domestic	0.2	1.0
Junior liens and HELOCs, domestic	0.0	5.8
Commercial and industrial <sup>2</sup>	0.7	5.1
Commercial real estate, domestic	0.2	2.2
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.1	0.8
Other loans <sup>4</sup>	0.8	1.8

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	362.9	399.1

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	11.9	1.4
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	2.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	7.2	
Other losses/gains <sup>5</sup>	2.3	
<i>equals</i>		
Net income before taxes	-0.1	0.0
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.1	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-1.2	-1.8

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.23.A. MUFG Americas Holdings Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.6	10.1	10.1
Tier 1 capital ratio	13.6	10.1	10.1
Total capital ratio	15.6	12.2	12.2
Tier 1 leverage ratio	11.4	7.0	7.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	3.4	4.2
First-lien mortgages, domestic	0.6	2.0
Junior liens and HELOCs, domestic	0.1	5.3
Commercial and industrial <sup>2</sup>	1.2	5.5
Commercial real estate, domestic	0.9	5.5
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.1	15.8
Other loans <sup>4</sup>	0.4	4.3

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	94.8	109.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	1.2	0.8
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	4.0	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.1	
<i>equals</i>		
Net income before taxes	-3.3	-2.2
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).



**Table C.23.B. MUFG Americas Holdings Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.6	12.5	12.5
Tier 1 capital ratio	13.6	12.5	12.5
Total capital ratio	15.6	13.9	13.9
Tier 1 leverage ratio	11.4	8.7	8.7

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	1.7	2.1
First-lien mortgages, domestic	0.2	0.8
Junior liens and HELOCs, domestic	0.1	2.4
Commercial and industrial <sup>2</sup>	0.7	3.1
Commercial real estate, domestic	0.4	2.3
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.1	12.5
Other loans <sup>4</sup>	0.2	2.4

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	94.8	110.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	1.9	1.3
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	1.7	
Realized losses/gains on securities (AFS/HTM)	0.2	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.1	
<i>equals</i>		
Net income before taxes	-0.1	0.0
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.24.A. Northern Trust Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.8	9.6	9.6
Tier 1 capital ratio	11.4	10.1	10.1
Total capital ratio	13.2	11.9	11.9
Tier 1 leverage ratio	7.5	6.5	6.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	1.6	4.6
First-lien mortgages, domestic	0.2	3.1
Junior liens and HELOCs, domestic	0.2	9.6
Commercial and industrial <sup>2</sup>	0.3	4.0
Commercial real estate, domestic	0.3	6.4
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.0	12.8
Other loans <sup>4</sup>	0.6	4.4

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	74.0	79.2

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	2.4	2.0
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	2.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	0.4	0.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.3	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.2	-0.1

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.24.B. Northern Trust Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.8	10.5	10.5
Tier 1 capital ratio	11.4	11.0	11.0
Total capital ratio	13.2	12.5	12.5
Tier 1 leverage ratio	7.5	7.1	7.1

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	0.9	2.6
First-lien mortgages, domestic	0.1	1.7
Junior liens and HELOCs, domestic	0.1	6.2
Commercial and industrial <sup>2</sup>	0.2	2.3
Commercial real estate, domestic	0.1	2.8
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.0	9.6
Other loans <sup>4</sup>	0.3	2.4

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	74.0	80.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	3.2	2.6
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	1.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	2.2	1.8
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.2	-0.4

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.25.A. The PNC Financial Services Group, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.6	7.6	7.6
Tier 1 capital ratio	12.0	8.7	8.7
Total capital ratio	14.6	11.0	11.0
Tier 1 leverage ratio	10.2	7.4	7.4

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	11.4	5.3
First-lien mortgages, domestic	0.9	3.4
Junior liens and HELOCs, domestic	1.5	6.6
Commercial and industrial <sup>2</sup>	4.7	6.7
Commercial real estate, domestic	2.4	6.8
Credit cards	0.5	12.2
Other consumer <sup>3</sup>	0.8	3.8
Other loans <sup>4</sup>	0.6	1.7

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	295.9	321.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	10.8	2.9
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	13.0	
Realized losses/gains on securities (AFS/HTM)	0.2	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.2	
<i>equals</i>		
Net income before taxes	-2.6	-0.7
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.7	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.2	0.4

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.25.B. The PNC Financial Services Group, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.6	9.2	9.2
Tier 1 capital ratio	12.0	10.3	10.3
Total capital ratio	14.6	12.1	12.1
Tier 1 leverage ratio	10.2	8.7	8.7

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	7.1	3.3
First-lien mortgages, domestic	0.6	2.3
Junior liens and HELOCs, domestic	1.1	4.9
Commercial and industrial <sup>2</sup>	2.9	4.1
Commercial real estate, domestic	1.1	3.0
Credit cards	0.4	9.2
Other consumer <sup>3</sup>	0.7	3.0
Other loans <sup>4</sup>	0.3	1.0

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	295.9	327.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	13.4	3.5
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	7.2	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.2	
<i>equals</i>		
Net income before taxes	5.9	1.6
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.3	
<i>Other effects on capital</i>		
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.2	-0.6

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.26.A. Regions Financial Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.9	7.3	7.3
Tier 1 capital ratio	11.7	7.9	7.9
Total capital ratio	13.9	10.0	10.0
Tier 1 leverage ratio	10.3	6.9	6.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	5.2	6.1
First-lien mortgages, domestic	0.7	4.6
Junior liens and HELOCs, domestic	0.5	5.3
Commercial and industrial <sup>2</sup>	1.6	6.3
Commercial real estate, domestic	1.6	9.9
Credit cards	0.2	14.3
Other consumer <sup>3</sup>	0.4	6.5
Other loans <sup>4</sup>	0.3	2.7

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	105.6	113.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	3.1	2.4
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	5.8	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-2.8	-2.1
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.26.B. Regions Financial Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.9	9.6	9.6
Tier 1 capital ratio	11.7	10.2	10.2
Total capital ratio	13.9	12.1	12.1
Tier 1 leverage ratio	10.3	8.8	8.8

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	3.2	3.8
First-lien mortgages, domestic	0.5	3.2
Junior liens and HELOCs, domestic	0.3	3.9
Commercial and industrial <sup>2</sup>	0.9	3.7
Commercial real estate, domestic	0.8	5.0
Credit cards	0.1	10.7
Other consumer <sup>3</sup>	0.3	4.9
Other loans <sup>4</sup>	0.2	1.6

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	105.6	114.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	4.0	3.0
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	0.7	0.5
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.27.A. Santander Holdings USA, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.0	11.8	11.8
Tier 1 capital ratio	13.5	12.7	12.7
Total capital ratio	15.3	14.2	14.2
Tier 1 leverage ratio	11.6	10.0	10.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	7.1	8.2
First-lien mortgages, domestic	0.3	3.8
Junior liens and HELOCs, domestic	0.2	3.8
Commercial and industrial <sup>2</sup>	0.8	3.9
Commercial real estate, domestic	1.0	5.2
Credit cards	0.1	15.6
Other consumer <sup>3</sup>	4.4	16.5
Other loans <sup>4</sup>	0.3	4.2

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	108.5	117.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	6.3	4.4
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	6.3	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.1	
<i>equals</i>		
Net income before taxes	-0.2	-0.2
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).



**Table C.27.B. Santander Holdings USA, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.0	13.8	12.2
Tier 1 capital ratio	13.5	14.8	13.4
Total capital ratio	15.3	16.3	15.1
Tier 1 leverage ratio	11.6	11.6	11.3

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	4.9	5.5
First-lien mortgages, domestic	0.2	2.5
Junior liens and HELOCs, domestic	0.2	2.6
Commercial and industrial <sup>2</sup>	0.5	2.4
Commercial real estate, domestic	0.5	2.4
Credit cards	0.1	11.6
Other consumer <sup>3</sup>	3.3	12.3
Other loans <sup>4</sup>	0.2	2.3

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	108.5	119.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	6.9	4.8
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.1	
<i>equals</i>		
Net income before taxes	3.5	2.4
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.28.A. State Street Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.0	9.6	9.6
Tier 1 capital ratio	15.9	12.8	12.8
Total capital ratio	18.2	14.7	14.7
Tier 1 leverage ratio	6.9	5.4	5.4

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	0.4	1.9
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial <sup>2</sup>	0.2	5.4
Commercial real estate, domestic	0.0	5.7
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.0	0.6
Other loans <sup>4</sup>	0.2	1.2

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	95.9	101.4

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	2.9	1.1
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	0.4	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses <sup>4</sup>	1.5	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	0.6	0.2
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.2	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-1.4	-1.6

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.28.B. State Street Corporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.0	10.6	10.6
Tier 1 capital ratio	15.9	13.7	13.7
Total capital ratio	18.2	15.6	15.6
Tier 1 leverage ratio	6.9	5.7	5.7

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	0.2	1.2
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial <sup>2</sup>	0.1	3.0
Commercial real estate, domestic	0.0	2.3
Credit cards	0.0	0.0
Other consumer <sup>3</sup>	0.0	0.6
Other loans <sup>4</sup>	0.1	0.8

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	95.9	102.6

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	4.9	1.9
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	0.3	
Realized losses/gains on securities (AFS/HTM)	0.2	
Trading and counterparty losses <sup>4</sup>	0.7	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	3.7	1.4
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-1.1	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-1.4	-2.6

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.29.A. SunTrust Banks, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.0	7.5	7.5
Tier 1 capital ratio	10.8	8.2	8.2
Total capital ratio	12.5	9.9	9.9
Tier 1 leverage ratio	9.7	7.4	7.4

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	6.4	4.5
First-lien mortgages, domestic	1.0	3.9
Junior liens and HELOCs, domestic	0.8	5.6
Commercial and industrial <sup>2</sup>	2.2	4.7
Commercial real estate, domestic	1.0	5.4
Credit cards	0.2	14.0
Other consumer <sup>3</sup>	1.1	4.9
Other loans <sup>4</sup>	0.2	1.7

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	164.9	180.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	5.1	2.6
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	7.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.4	
<i>equals</i>		
Net income before taxes	-2.4	-1.2
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.29.B. SunTrust Banks, Inc.**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	10.0	9.2	9.2
Tier 1 capital ratio	10.8	9.9	9.9
Total capital ratio	12.5	11.3	11.3
Tier 1 leverage ratio	9.7	8.8	8.8

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	4.0	2.8
First-lien mortgages, domestic	0.7	2.6
Junior liens and HELOCs, domestic	0.5	3.9
Commercial and industrial <sup>2</sup>	1.3	2.7
Commercial real estate, domestic	0.5	2.6
Credit cards	0.1	10.5
Other consumer <sup>3</sup>	0.8	3.6
Other loans <sup>4</sup>	0.1	1.0

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	164.9	182.1

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	6.9	3.4
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	4.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.4	
<i>equals</i>		
Net income before taxes	2.6	1.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.30.A. TD Group US Holdings LLC**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.1	8.4	8.4
Tier 1 capital ratio	13.2	8.4	8.4
Total capital ratio	14.3	9.8	9.8
Tier 1 leverage ratio	8.3	5.0	5.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	9.3	6.5
First-lien mortgages, domestic	0.8	3.7
Junior liens and HELOCs, domestic	0.6	6.4
Commercial and industrial <sup>2</sup>	2.2	6.7
Commercial real estate, domestic	2.4	9.6
Credit cards	2.0	18.2
Other consumer <sup>3</sup>	0.5	2.5
Other loans <sup>4</sup>	0.8	3.8

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	157.3	191.5

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	4.3	1.4
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	11.1	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-6.9	-2.2
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.2	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	-0.2

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.30.B. TD Group US Holdings LLC**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	13.1	11.8	11.7
Tier 1 capital ratio	13.2	11.8	11.8
Total capital ratio	14.3	13.0	13.0
Tier 1 leverage ratio	8.3	7.0	6.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	5.8	4.0
First-lien mortgages, domestic	0.5	2.4
Junior liens and HELOCs, domestic	0.5	4.9
Commercial and industrial <sup>2</sup>	1.2	3.8
Commercial real estate, domestic	1.1	4.3
Credit cards	1.6	14.8
Other consumer <sup>3</sup>	0.4	1.7
Other loans <sup>4</sup>	0.5	2.3

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	157.3	198.1

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	5.5	1.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	6.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-1.0	-0.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.4	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	-0.4

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.31.A. U.S. Bancorp**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	9.6	7.5	7.5
Tier 1 capital ratio	11.3	8.9	8.9
Total capital ratio	13.3	10.8	10.8
Tier 1 leverage ratio	9.5	7.6	7.6

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	18.9	7.0
First-lien mortgages, domestic	1.6	2.8
Junior liens and HELOCs, domestic	0.9	5.1
Commercial and industrial <sup>2</sup>	6.4	9.0
Commercial real estate, domestic	4.2	10.5
Credit cards	3.3	15.0
Other consumer <sup>3</sup>	1.4	3.8
Other loans <sup>4</sup>	1.1	4.8

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	341.4	371.7

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	21.4	4.9
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	21.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-0.2	-0.1
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	1.1	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.4	0.2

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).



**Table C.31.B. U.S. Bancorp**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	9.6	9.1	9.0
Tier 1 capital ratio	11.3	10.6	10.5
Total capital ratio	13.3	12.4	12.4
Tier 1 leverage ratio	9.5	8.9	8.9

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	12.0	4.4
First-lien mortgages, domestic	1.1	1.8
Junior liens and HELOCs, domestic	0.6	3.3
Commercial and industrial <sup>2</sup>	4.1	5.7
Commercial real estate, domestic	2.0	4.9
Credit cards	2.6	11.8
Other consumer <sup>3</sup>	1.0	2.7
Other loans <sup>4</sup>	0.7	2.9

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	341.4	377.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	24.6	5.5
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	12.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	12.0	2.7
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.2	
<i>Other effects on capital</i>		
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.4	-1.1

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.32.A. Wells Fargo & Company**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	7.2	7.2
Tier 1 capital ratio	12.6	8.7	8.7
Total capital ratio	15.8	11.7	11.7
Tier 1 leverage ratio	9.4	6.6	6.6

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	51.8	5.4
First-lien mortgages, domestic	7.3	2.8
Junior liens and HELOCs, domestic	4.7	6.5
Commercial and industrial <sup>2</sup>	12.0	6.3
Commercial real estate, domestic	10.0	7.4
Credit cards	5.4	15.2
Other consumer <sup>3</sup>	6.5	6.7
Other loans <sup>4</sup>	5.8	3.4

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	1,303.1	1,455.3

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	51.0	2.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	60.5	
Realized losses/gains on securities (AFS/HTM)	4.6	
Trading and counterparty losses <sup>4</sup>	9.7	
Other losses/gains <sup>5</sup>	1.4	
<i>equals</i>		
Net income before taxes	-25.2	-1.3
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-0.7	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.2	-1.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.32.B. Wells Fargo & Company**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	9.1	9.1
Tier 1 capital ratio	12.6	10.6	10.6
Total capital ratio	15.8	13.2	13.2
Tier 1 leverage ratio	9.4	8.0	8.0

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	31.2	3.2
First-lien mortgages, domestic	3.8	1.4
Junior liens and HELOCs, domestic	2.9	3.9
Commercial and industrial <sup>2</sup>	7.5	3.9
Commercial real estate, domestic	4.5	3.3
Credit cards	4.3	12.0
Other consumer <sup>3</sup>	5.0	5.1
Other loans <sup>4</sup>	3.3	1.9

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	1,303.1	1,467.2

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	63.8	3.3
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	32.5	
Realized losses/gains on securities (AFS/HTM)	2.0	
Trading and counterparty losses <sup>4</sup>	4.0	
Other losses/gains <sup>5</sup>	1.6	
<i>equals</i>		
Net income before taxes	23.8	1.2
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	-3.7	
<i>Other effects on capital</i>		
AOCI included in capital (billions of dollars) <sup>7</sup>	-0.2	-4.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.33.A. Zions Bancorporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Severely adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.2	6.6	6.6
Tier 1 capital ratio	14.1	8.3	8.3
Total capital ratio	16.1	10.1	10.1
Tier 1 leverage ratio	11.3	6.5	6.5

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	2.6	6.3
First-lien mortgages, domestic	0.1	1.1
Junior liens and HELOCs, domestic	0.1	3.4
Commercial and industrial <sup>2</sup>	1.1	8.5
Commercial real estate, domestic	1.2	6.7
Credit cards	0.0	15.0
Other consumer <sup>3</sup>	0.1	10.9
Other loans <sup>4</sup>	0.1	5.5

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	46.7	49.8

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	0.7	1.1
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	3.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-2.3	-3.7
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).

**Table C.33.B. Zions Bancorporation**

Projected stressed capital ratios, risk-weighted assets, losses, revenues, net income before taxes, and loan losses

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2015:Q4 and projected 2016:Q1–2018:Q1			
Percent			
Regulatory ratio	Actual 2015:Q4	Stressed capital ratios <sup>1</sup>	
		Ending	Minimum
Common equity tier 1 capital ratio	12.2	10.0	10.0
Tier 1 capital ratio	14.1	11.7	11.7
Total capital ratio	16.1	13.2	13.2
Tier 1 leverage ratio	11.3	9.2	9.2

<sup>1</sup> The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2016:Q1 to 2018:Q1.

Projected loan losses, by type of loan, 2016:Q1–2018:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) <sup>1</sup>
Loan losses	1.5	3.5
First-lien mortgages, domestic	0.0	0.5
Junior liens and HELOCs, domestic	0.1	1.9
Commercial and industrial <sup>2</sup>	0.7	5.3
Commercial real estate, domestic	0.6	3.2
Credit cards	0.0	12.0
Other consumer <sup>3</sup>	0.0	8.2
Other loans <sup>4</sup>	0.1	3.3

<sup>1</sup> Average loan balances used to calculate portfolio loss rates exclude loans held for sale and loans held for investment under the fair-value option, and are calculated over nine quarters.

<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.

Risk-weighted assets, actual 2015:Q4 and projected 2018:Q1		
Billions of dollars		
Item	Actual 2015:Q4	Projected 2018:Q1
Risk-weighted assets <sup>1</sup>	46.7	51.0

<sup>1</sup> For each quarter, risk-weighted assets are calculated under the Board's standardized capital risk-based approach in 12 CFR part 217, subpart D.

Projected losses, revenue, and net income before taxes through 2018:Q1		
Item	Billions of dollars	Percent of average assets <sup>1</sup>
Pre-provision net revenue <sup>2</sup>	1.1	1.7
Other revenue <sup>3</sup>	0.0	
<i>less</i>		
Provisions	1.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses <sup>4</sup>	0.0	
Other losses/gains <sup>5</sup>	0.0	
<i>equals</i>		
Net income before taxes	-0.4	-0.6
<b>Memo items</b>		
Other comprehensive income <sup>6</sup>	0.0	
<i>Other effects on capital</i>	<i>Actual 2015:Q4</i>	<i>2018:Q1</i>
AOCI included in capital (billions of dollars) <sup>7</sup>	0.0	0.0

<sup>1</sup> Average assets is the nine-quarter average of total assets.

<sup>2</sup> Pre-provision net revenue includes losses from operational-risk events, mortgage repurchase expenses, and other real estate owned (OREO) costs.

<sup>3</sup> Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.

<sup>4</sup> Trading and counterparty losses include mark-to-market and credit valuation adjustments (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

<sup>5</sup> 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.

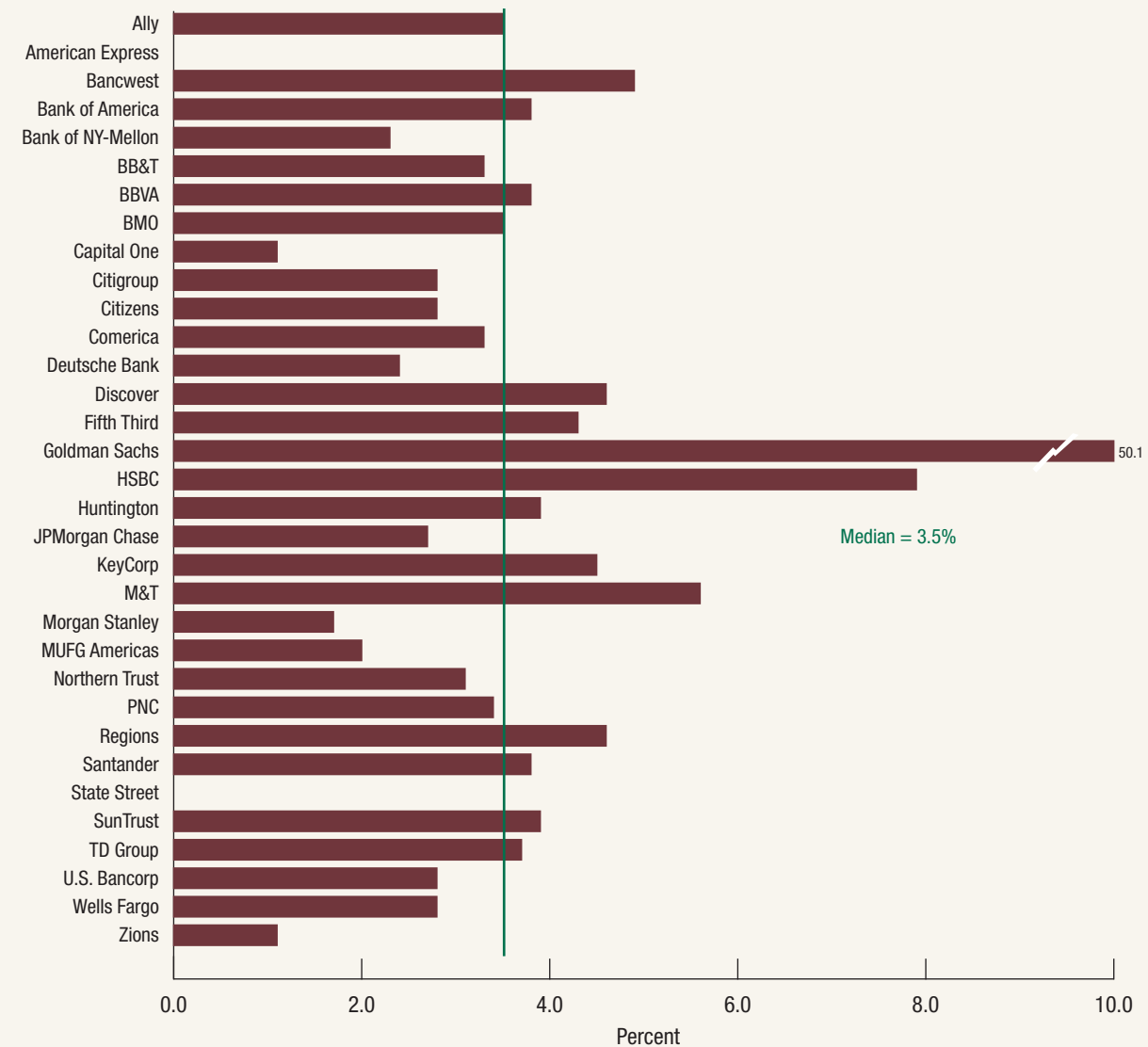
<sup>6</sup> Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.

<sup>7</sup> Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 40 percent included in projected regulatory capital for 2015, 60 percent included in projected regulatory capital for 2016, 80 percent included in projected regulatory capital for 2017, and 100 percent included in projected regulatory capital for 2018. See 12 CFR 217.300(b)(3).



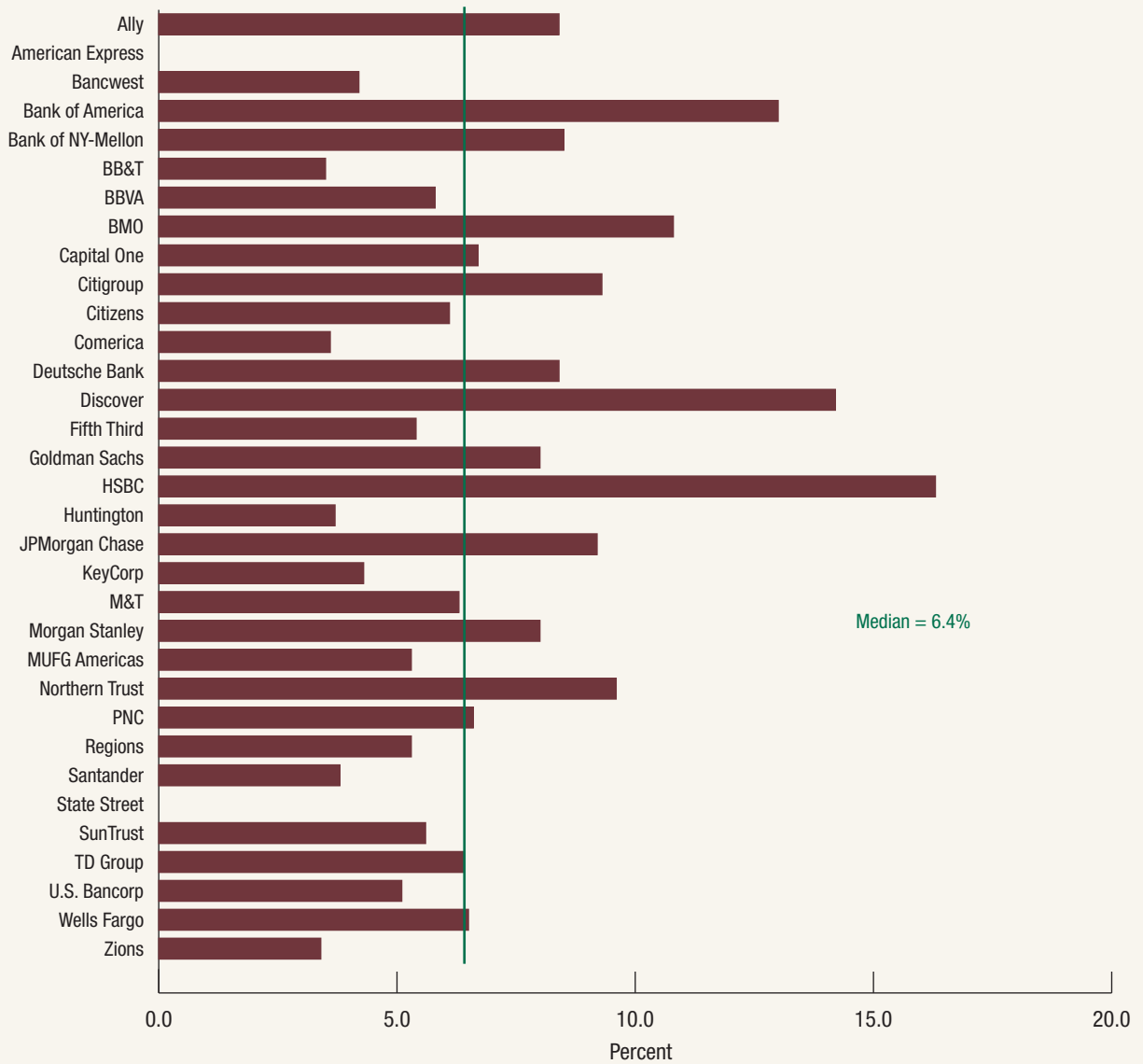
# Appendix D: Additional Aggregate Results

Figure D.1. First-lien mortgages, domestic loss rates in the severely adverse scenario



Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

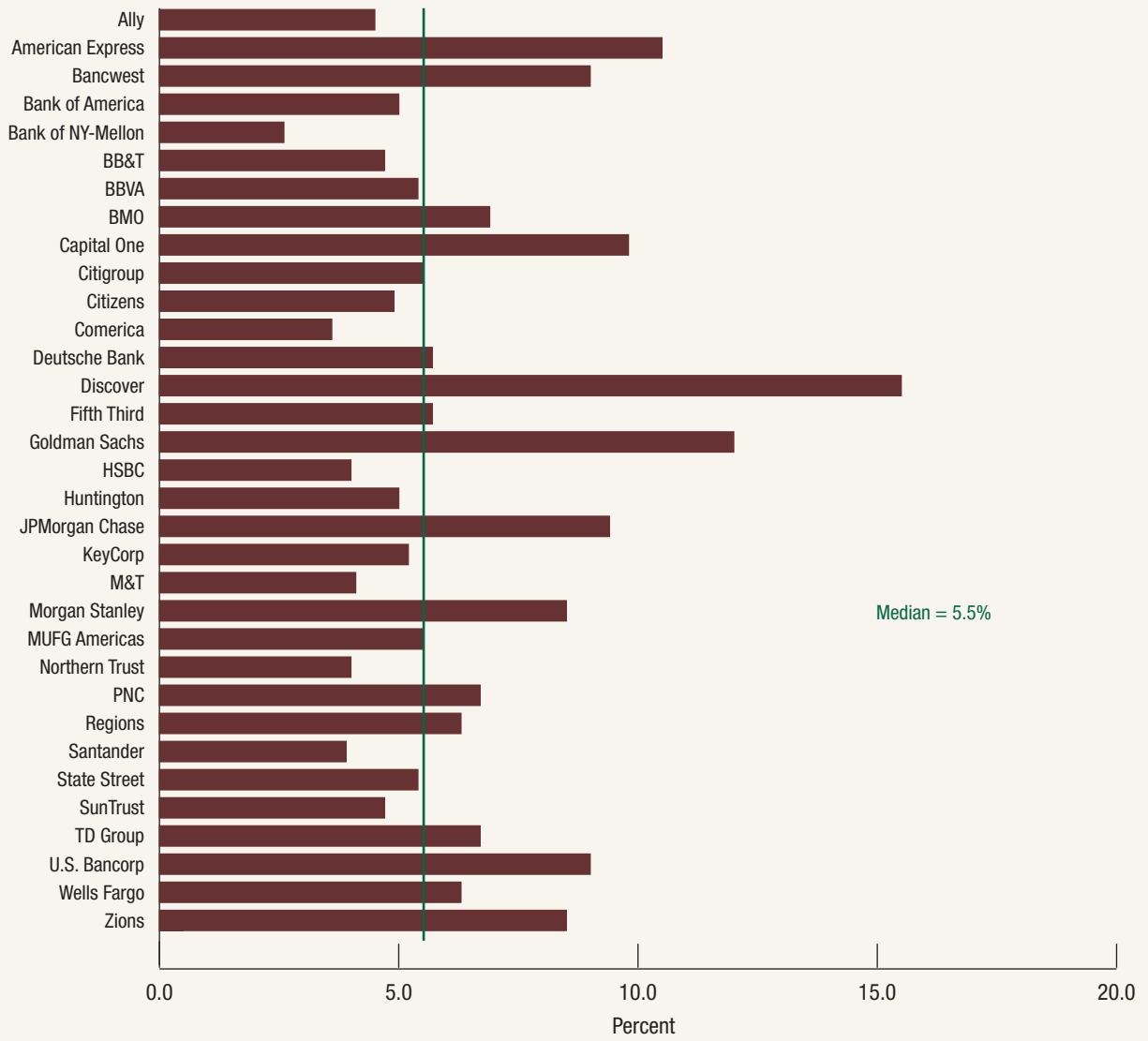
**Figure D.2. Junior liens and HELOCs, domestic loss rates in the severely adverse scenario**



Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.



**Figure D.3. Commercial and industrial loss rates in the severely adverse scenario**



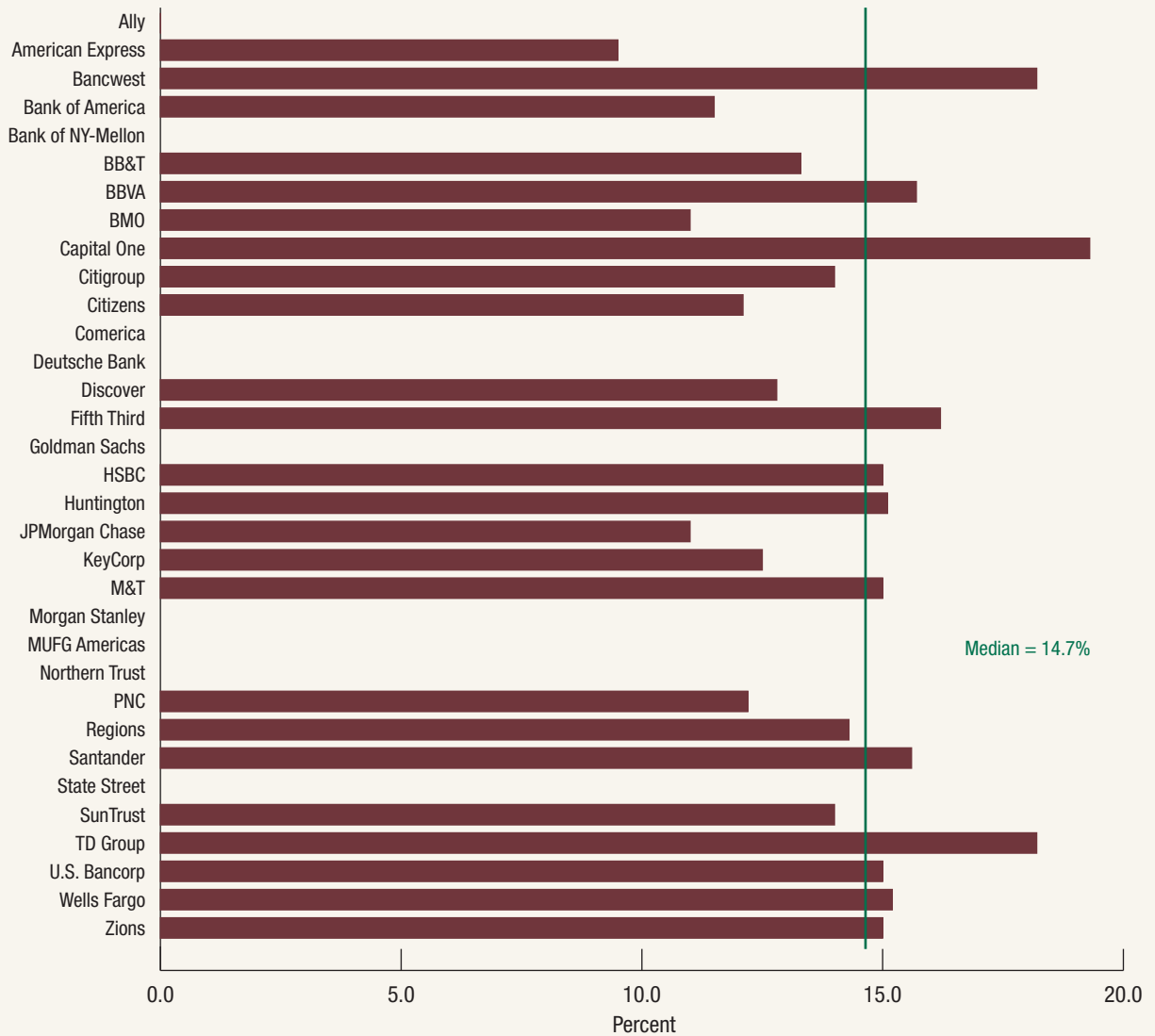
Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances. Losses are calculated based on the exposure at default, which includes both outstanding balances and any additional drawdown of the credit line that occurs prior to default, while loss rates are calculated as a percent of outstanding balances.

**Figure D.4. Commercial real estate, domestic loss rates in the severely adverse scenario**



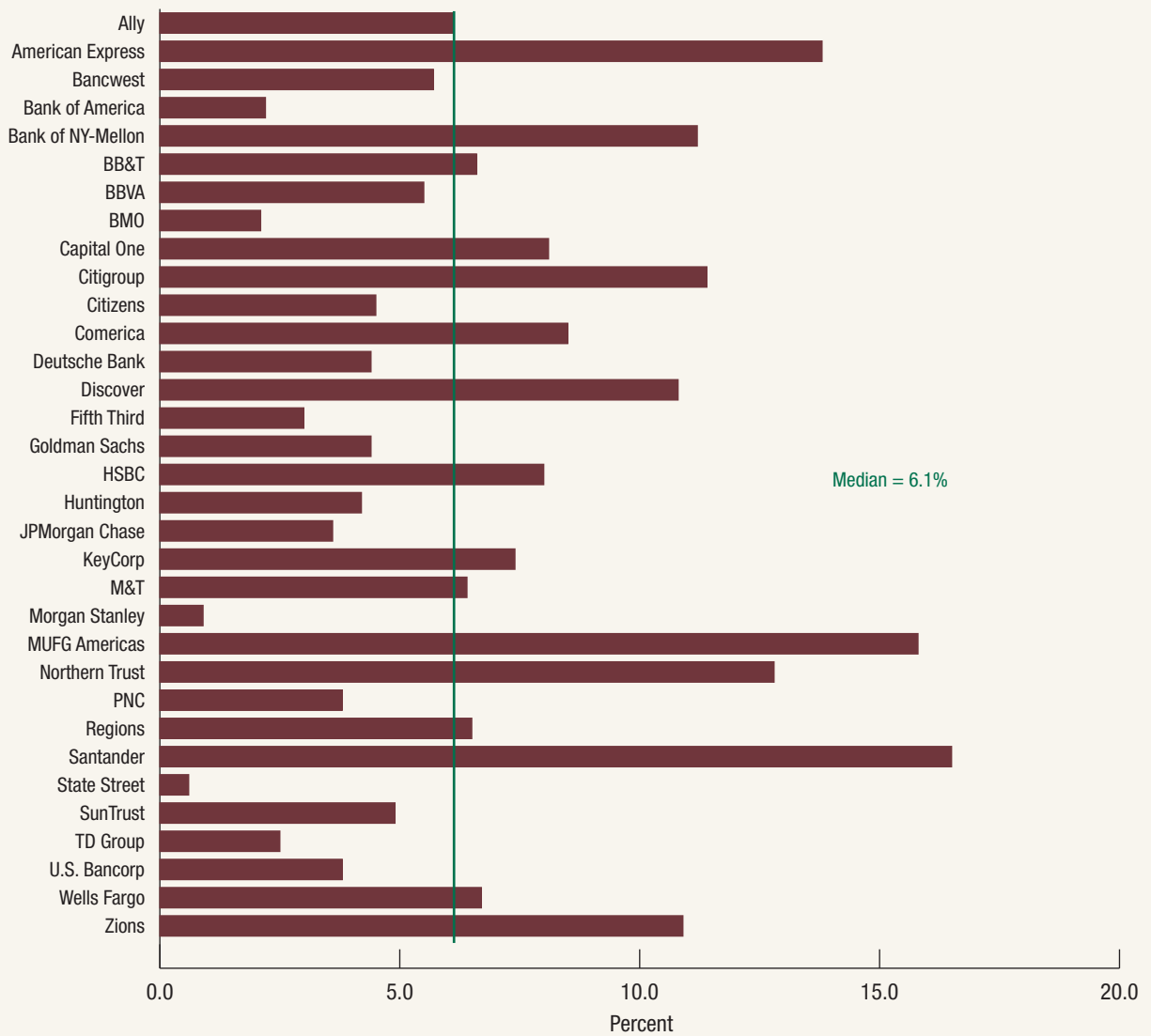
Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

**Figure D.5. Credit card loss rates in the severely adverse scenario**



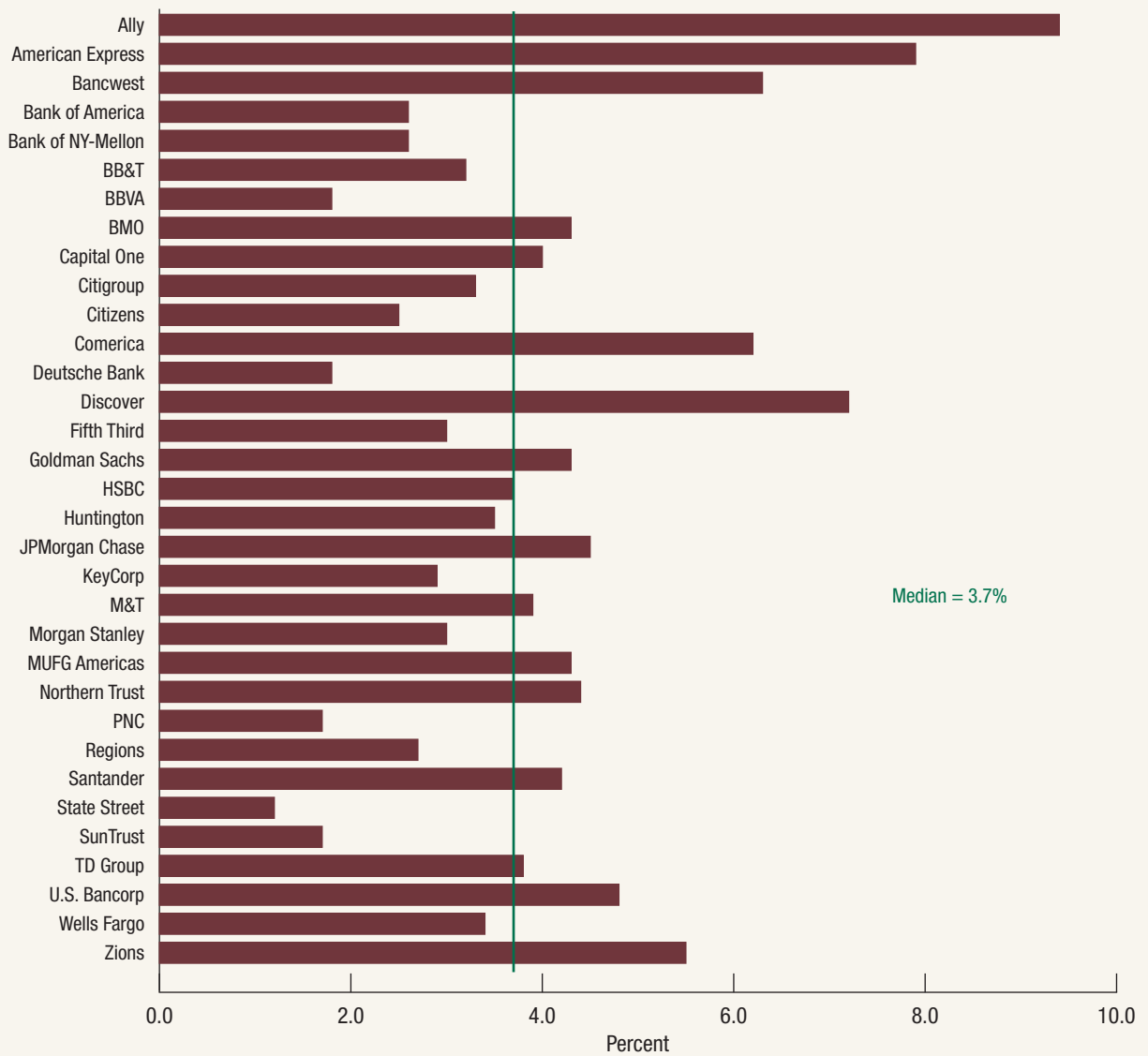
Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

**Figure D.6. Other consumer loss rates in the severely adverse scenario**



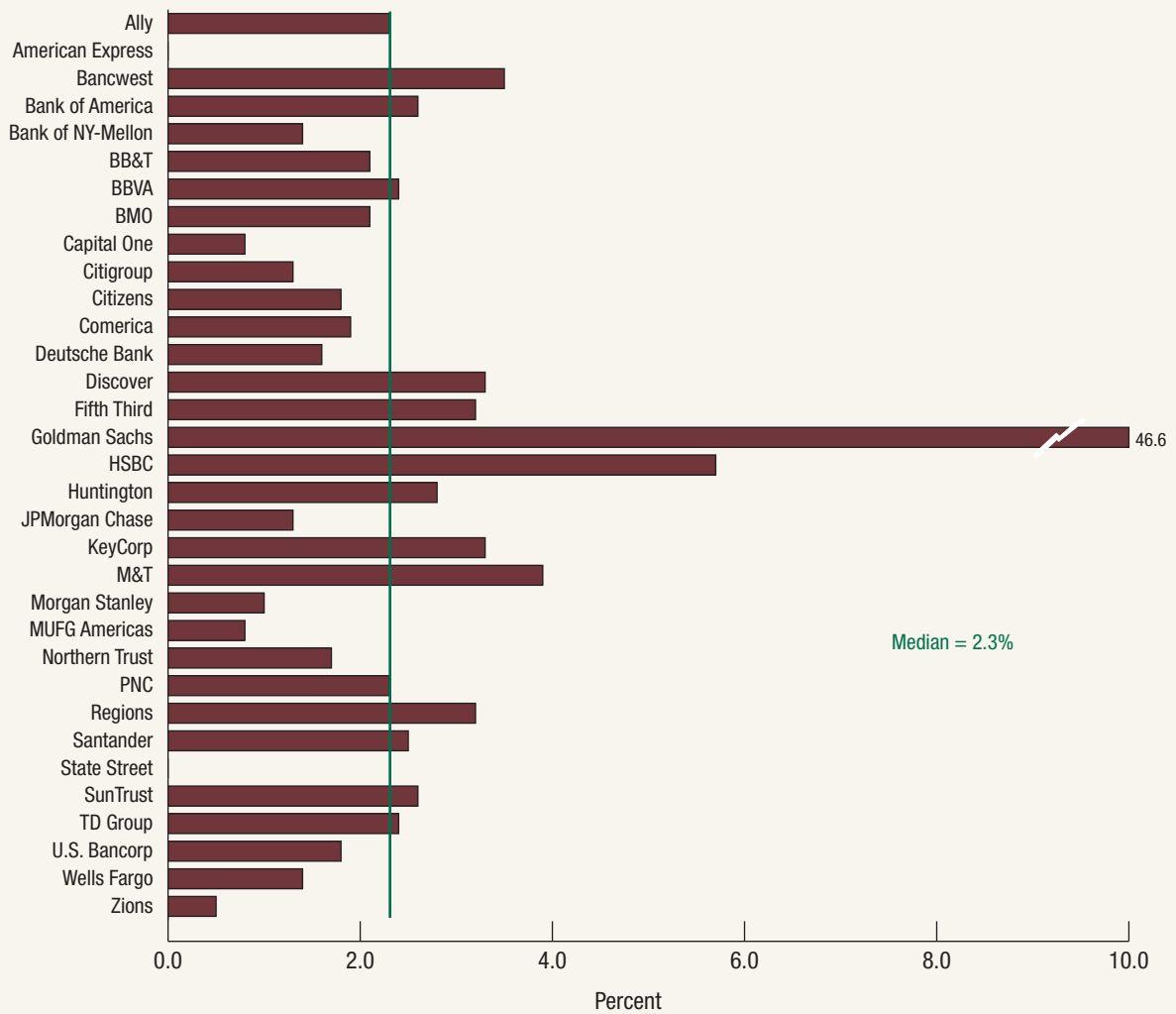
Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

**Figure D.7. Other loans loss rates in the severely adverse scenario**



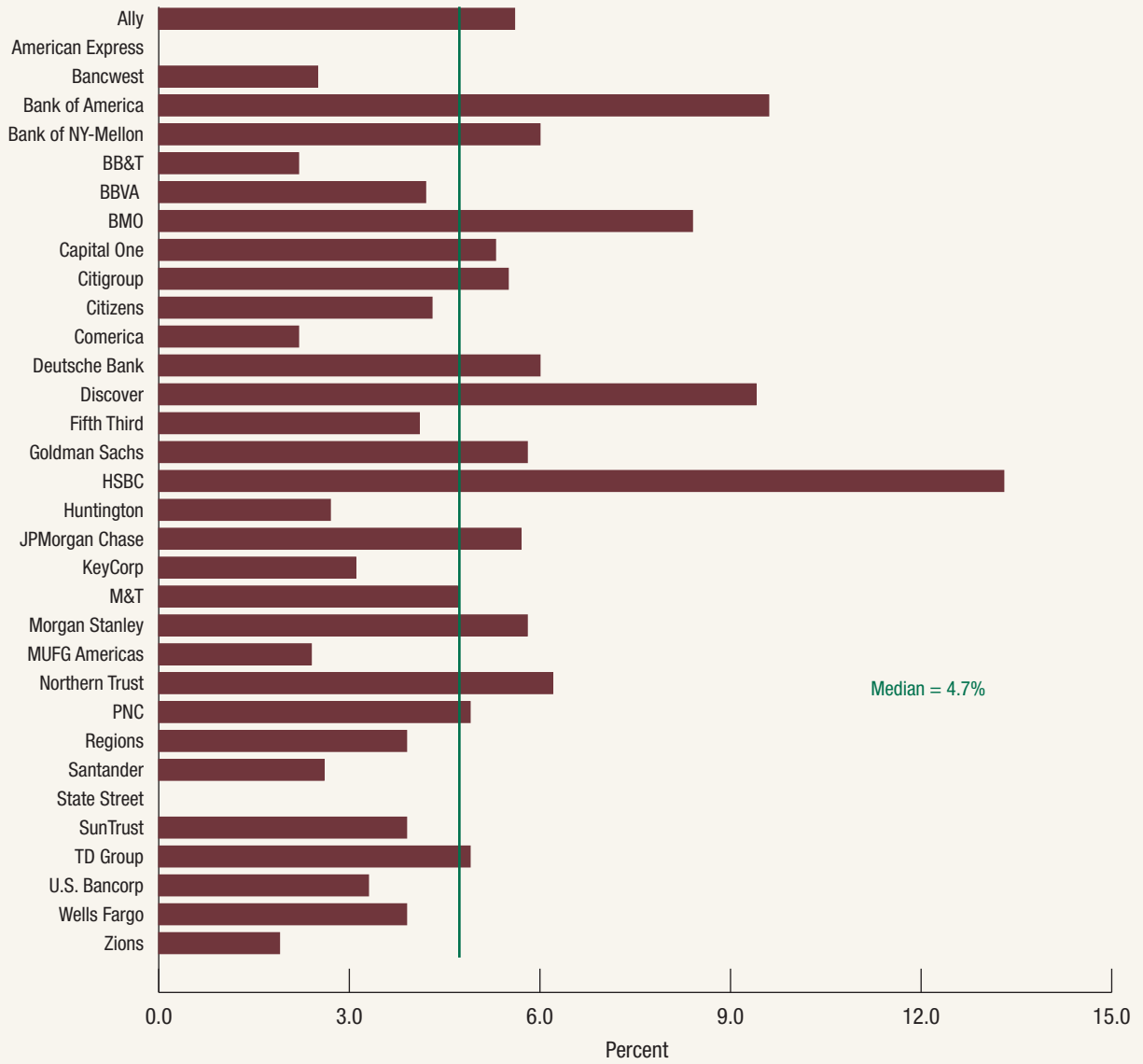
Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

Figure D.8. First-lien mortgages, domestic loss rates in the adverse scenario



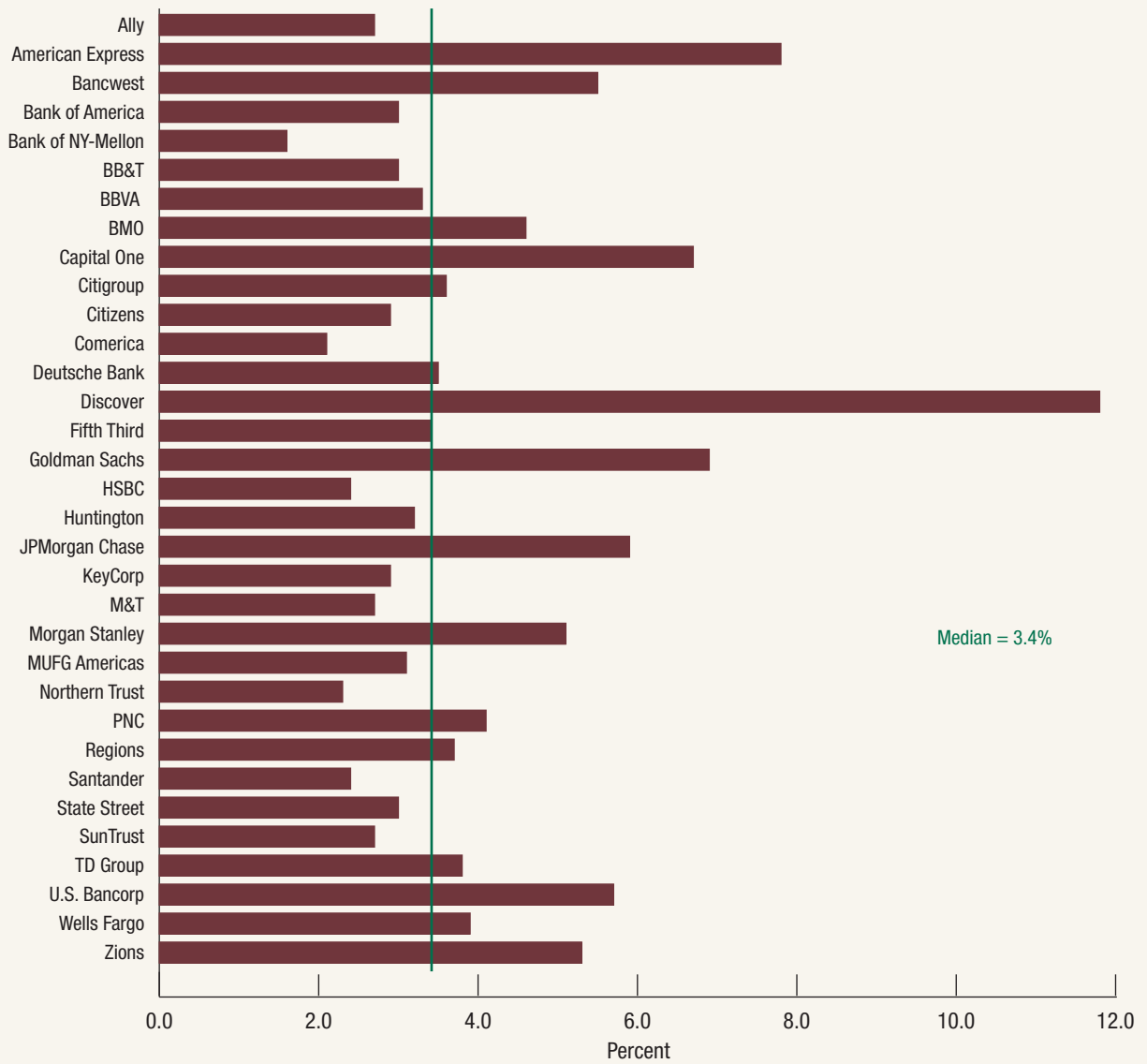
Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

**Figure D.9. Junior liens and HELOCs, domestic loss rates in the adverse scenario**



Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

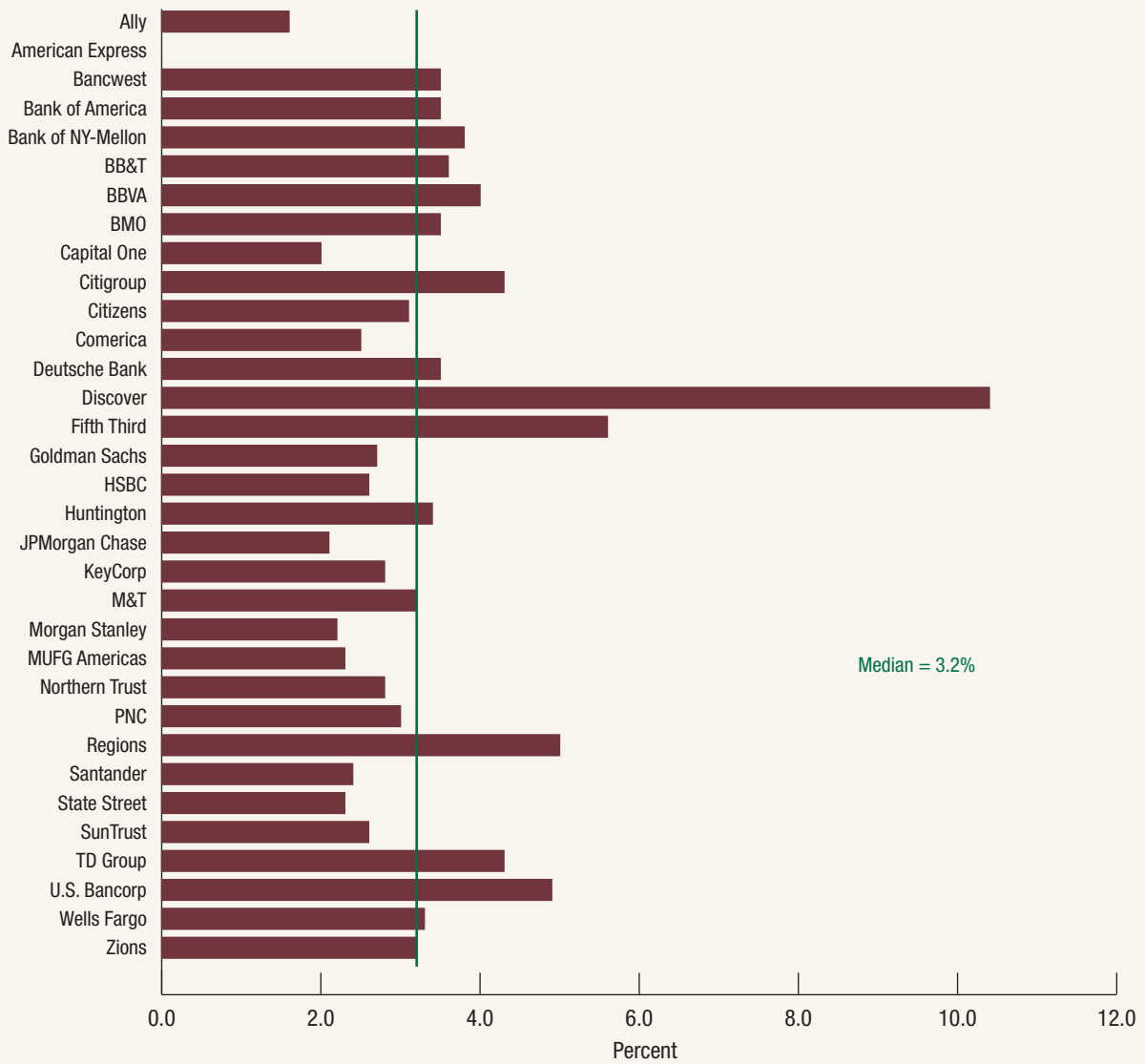
**Figure D.10. Commercial and industrial loss rates in the adverse scenario**



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances. Losses are calculated based on the exposure at default, which includes both outstanding balances and any additional drawdown of the credit line that occurs prior to default, while loss rates are calculated as a percent of outstanding balances.

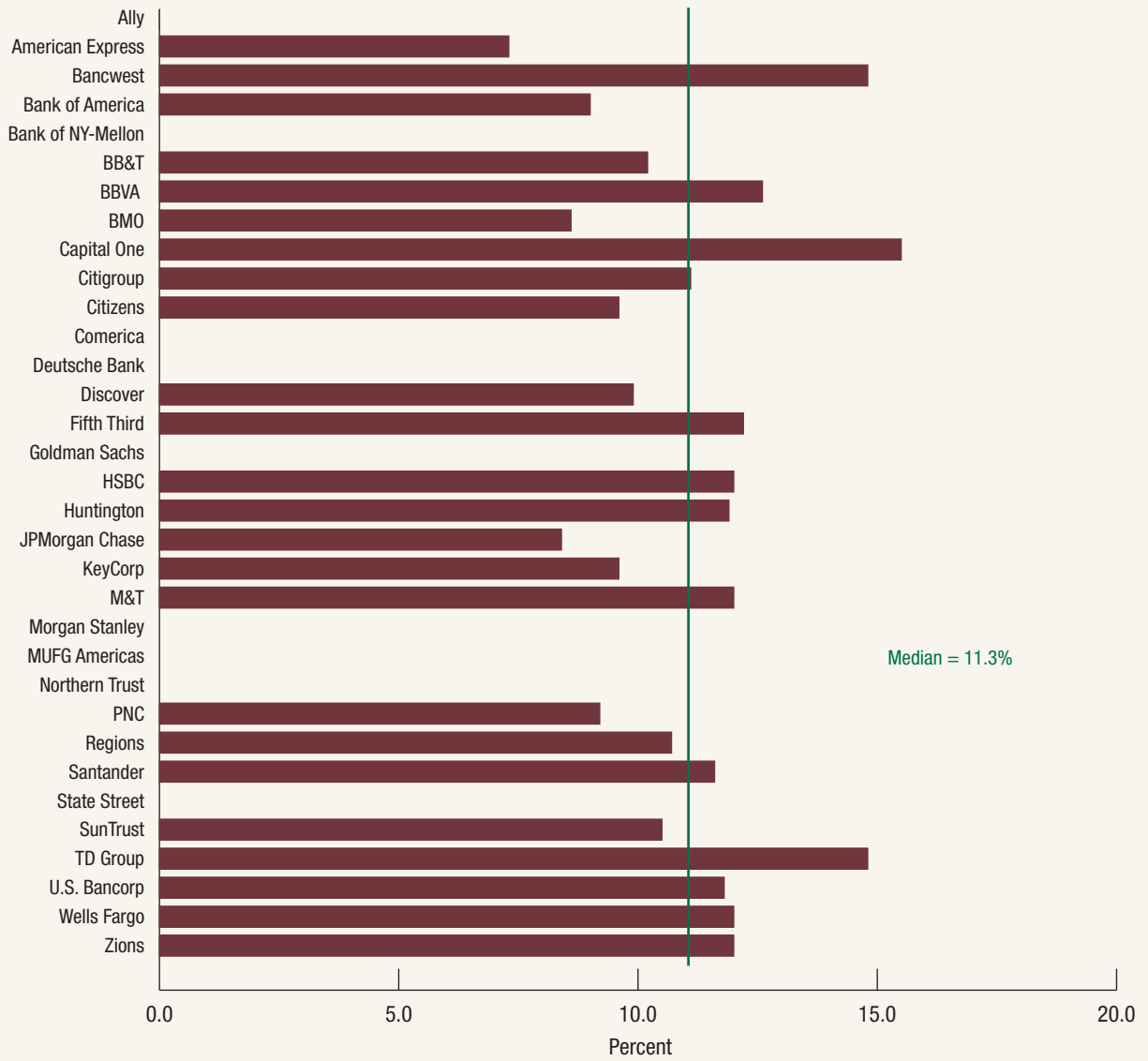


**Figure D.11. Commercial real estate, domestic loss rates in the adverse scenario**



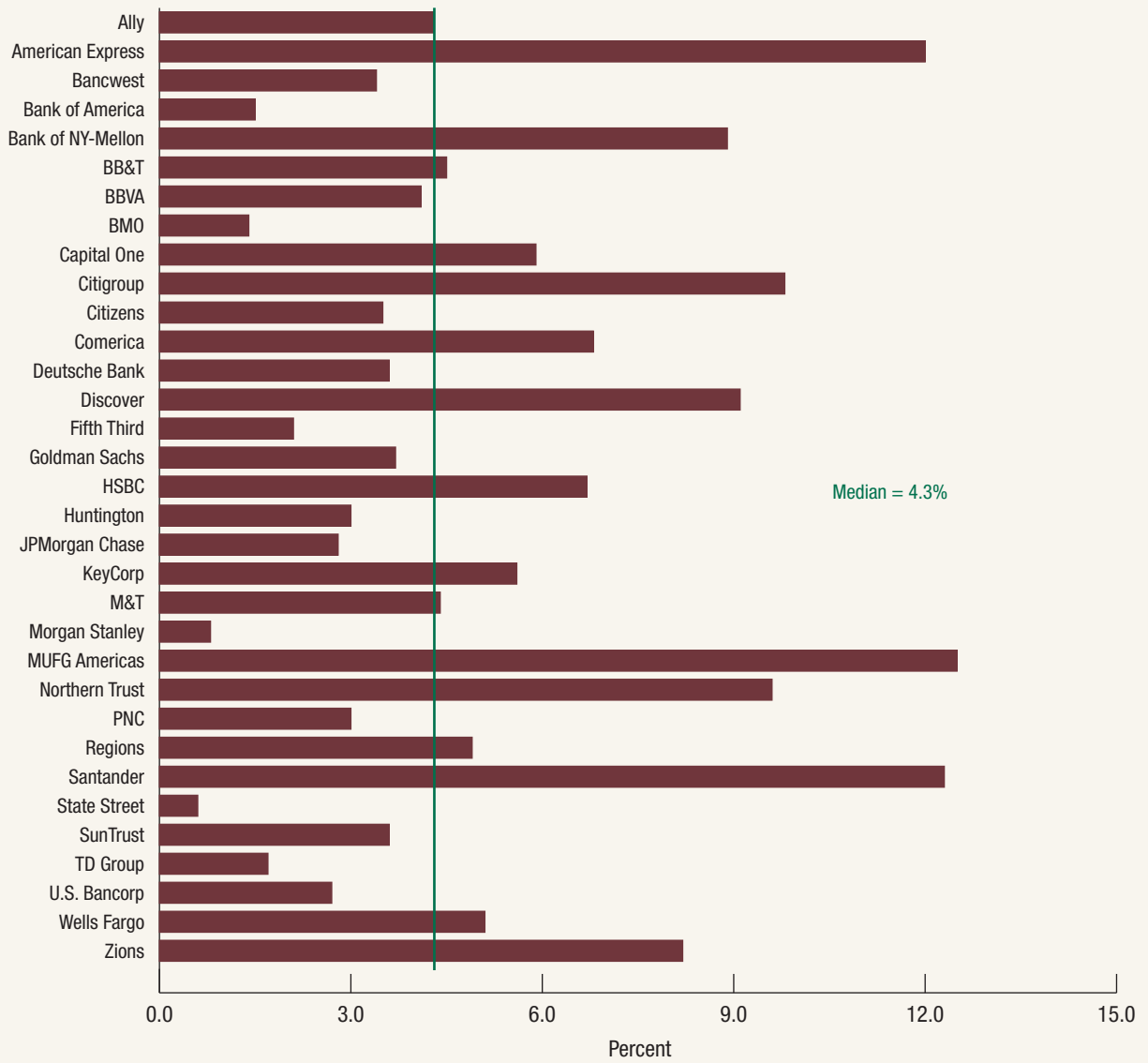
Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

**Figure D.12. Credit card loss rates in the adverse scenario**



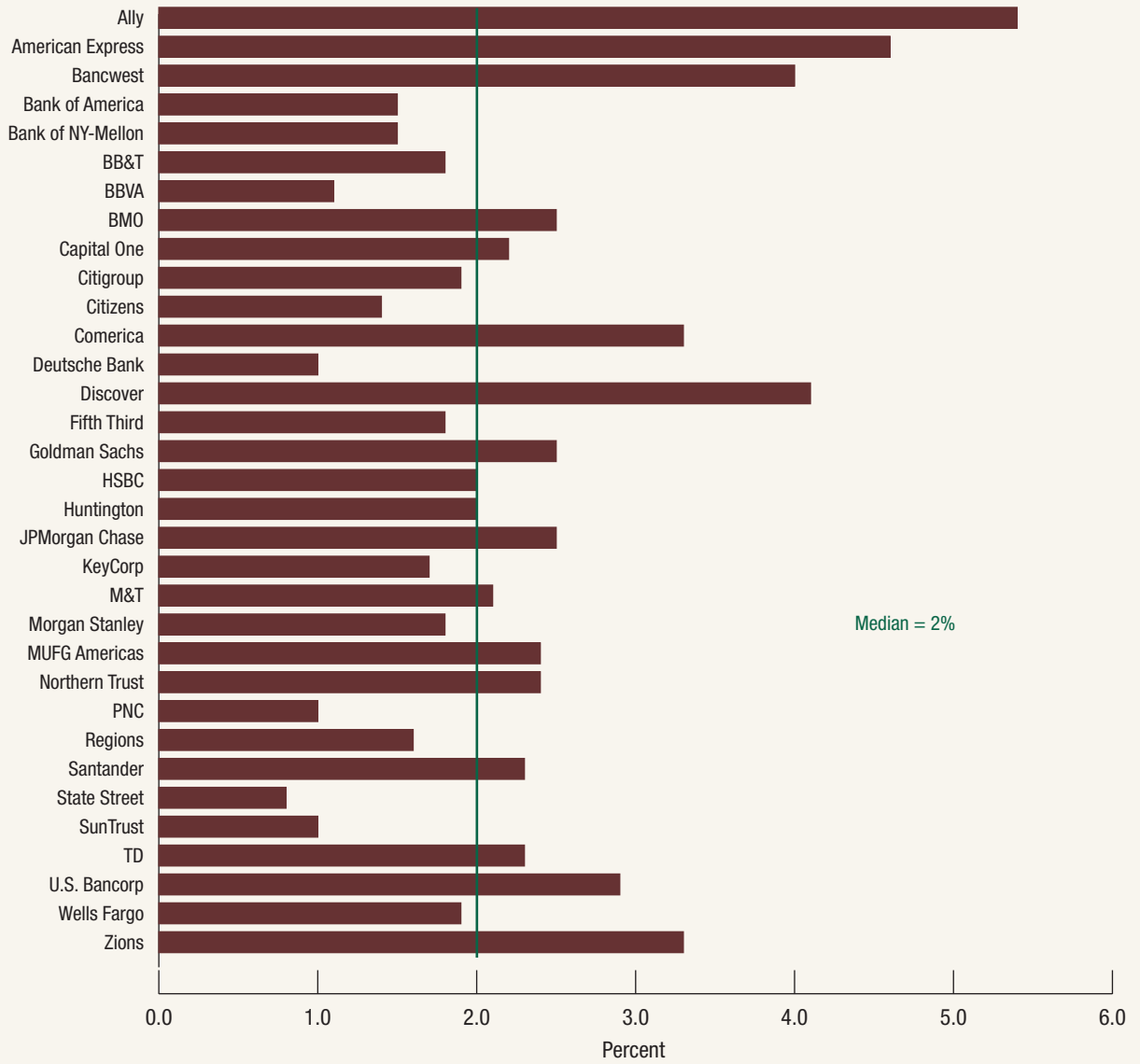
Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

**Figure D.13. Other consumer loss rates in the adverse scenario**



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.

**Figure D.14. Other loans loss rates in the adverse scenario**



Note: Estimates are for the nine-quarter period from 2016:Q1–2018:Q1 as a percent of average balances.



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