



Dodd-Frank Act Stress Test 2017: Supervisory Stress Test Methodology and Results

June 2017

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), U.S. intermediate holding companies (IHCs), 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 (Board).¹

The Federal Reserve has established frameworks and programs for the supervision of its largest and most complex financial institutions to achieve its supervisory objectives, incorporating the lessons learned from the 2007 to 2009 financial crisis and in the period since. As part of these supervisory frameworks and programs, the Federal Reserve annually assesses whether financial firms with \$50 billion or more in total consolidated assets are sufficiently capitalized to absorb losses during stressful conditions, while meeting obligations to creditors and counterparties and continuing to be able to lend to households and businesses. The Federal Reserve's expectations for capital planning practices are tailored to the size, scope of operations, activities, and systemic importance of a particular firm. In particular, the Federal Reserve has significantly heightened expectations for BHCs and U.S. IHCs supervised by the Large Institution Supervision Coordinating Committee (LISCC firms) and large and complex firms.²

This annual assessment includes two related programs:

- **Dodd-Frank Act supervisory stress testing** is a forward-looking quantitative evaluation of the impact of stressful economic and financial market conditions on BHCs' capital. The supervisory stress test that is carried out pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) and the Board's rules³ serves to inform the Federal Reserve, BHCs, and the general public of how institutions' capital ratios might change under a hypothetical set of stressful economic conditions developed by the Federal Reserve.⁴ The supervisory stress test results, after incorporating firms' planned capital actions, are also used for the quantitative assessment in the Comprehensive Capital Analysis and Review (CCAR). All BHCs and U.S. IHCs with \$50 billion or more in total consolidated assets are currently subject to Dodd-Frank supervisory stress testing.⁵
- **The Comprehensive Capital Analysis and Review (CCAR)** consists of a quantitative assessment for all BHCs with \$50 billion or more in total consolidated assets and a qualitative assessment for BHCs that are LISCC or large and complex firms. The quantitative assessment evaluates a firm's capital adequacy and planned capital distributions, such

³ Pub. L. No. 111-203, 124 Stat. 1376 (2010); 12 CFR part 252, subpart E.

⁴ In addition to an annual supervisory stress test conducted by the Federal Reserve, each participating institution 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.

⁵ Certain newly formed U.S. IHCs are not yet subject to Dodd-Frank Act supervisory stress testing, but are required under the capital plan rule to submit a capital plan to the Federal Reserve that will be subject to a confidential review process. These firms are Barclays US LLC; BNP Paribas USA, Inc.; Credit Suisse Holdings (USA) LLC; Deutsche Bank USA Corp; RBC USA Holdco Corporation; and UBS Americas Holdings LLC. This set of firms will be subject to Dodd-Frank stress testing beginning January 1, 2018. Deutsche Bank Trust Corporation is a subsidiary of a newly formed U.S. IHC that has participated in DFAST and CCAR in previous years and is subject to the supervisory stress test. See 12 CFR 225.8(c)(2); 12 CFR 252.153(e)(1)(ii)(c). Currently, no nonbank financial companies supervised by the Board are subject to the capital planning or stress test requirements.

¹ 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/supervisionreg.htm.

² Large and complex firms are BHCs or U.S. IHCs that (i) have average total consolidated assets over \$250 billion or (ii) have average total nonbank assets of \$75 billion or more, and (iii) are not LISCC firms.

as any dividend payments and common stock repurchases. The Federal Reserve assesses whether firms have sufficient capital to continue operating and lending to creditworthy households and businesses throughout times of economic and financial market stress. CCAR also includes a qualitative assessment of capital planning practices at the largest and most complex firms. As part of the qualitative assessment, the Federal Reserve evaluates the reliability of each firm's analyses and other processes for capital planning, focusing on the areas that are most critical to sound capital planning—namely, how a firm identifies, measures, and determines capital needs for its material risks, and a firm's controls and governance around those

processes. The Federal Reserve recently further tailored its rules to remove large and noncomplex firms from the qualitative objection process.⁶ At the conclusion of the process, the Federal Reserve either does not object or objects to a firm's capital plan. If the Federal Reserve objects to a firm's capital plan, the firm may only make capital distributions that the Federal Reserve has not objected to in writing.

⁶ Large and noncomplex firms are BHCs or U.S. IHCs that (i) have average total consolidated assets between \$50 billion and \$250 billion, (ii) have average total nonbank assets of less than \$75 billion, and (iii) are not U.S. global systemically important banks.

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Executive Summary

The Dodd-Frank Act requires the Federal Reserve to conduct an annual stress test of BHCs and U.S. IHCs⁷ with \$50 billion or more in total consolidated assets and any nonbank financial company that the FSO has determined shall be supervised by the Board.⁸ The Board first adopted rules implementing this requirement in October 2012 and most recently modified these rules in February 2017.⁹

For this year's stress test cycle (DFAST 2017), which began January 1, 2017, the Federal Reserve conducted supervisory stress tests of 34 BHCs.

This report provides

- [background](#) on Dodd-Frank Act stress testing;
- details of the [adverse and severely adverse supervisory scenarios](#) used in DFAST 2017;
- 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 2017 program, presented both in the aggregate and for individual institutions.

The adverse and severely adverse supervisory scenarios used in DFAST 2017 feature U.S. and global recessions. In particular, the severely adverse scenario is characterized by a severe global recession in which the U.S. unemployment rate rises by about 5.25 percentage points to 10 percent, accompanied by a period of heightened stress in corporate loan markets and commercial real estate markets. The adverse scenario features a moderate recession in the

United States, as well as weakening economic activity across all countries included in the scenario.

In conducting its supervisory stress tests, the Federal Reserve calculated its projections of each 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. For DFAST 2017, the Federal Reserve updated the calculation of projected capital to incorporate the supplementary leverage ratio, which will become effective starting in 2018. As in past years, the Federal Reserve also enhanced some of the supervisory models to improve model stability and performance and incorporated new data, where available. The enhanced models generally exhibit an increased sensitivity to economic conditions compared to past years' models. These changes are highlighted in [box 1](#). A description of enhancements to the models used to project pre-provision net revenue (PPNR) 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 2017 projections suggest that, in the aggregate, the 34 BHCs would experience substantial losses under both the adverse and the severely adverse scenarios but, in the aggregate, could continue lending to businesses and households, thanks to the capital built up by the sector following the financial crisis.

Over the nine quarters of the planning horizon, aggregate losses at the 34 BHCs under the severely adverse scenario are projected to be \$493 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 pre-provision net revenue is \$418 billion, and net income before taxes is projected to be -\$111 billion.

⁷ U.S. IHCs of foreign banking organizations are subject to the annual stress test in accordance with the transition provisions under the capital plan rule and subpart O of the Federal Reserve's Regulation YY (12 CFR part 252).

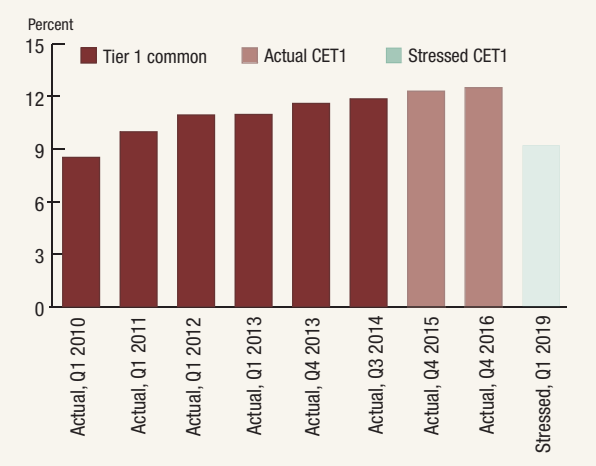
⁸ 12 USC 5365(i)(1).

⁹ See 82 Fed. Reg. 9308 (February 3, 2017).

As illustrated in [figure 1](#), in the severely adverse scenario, the aggregate Common Equity Tier 1 (CET1) capital ratio would fall from an actual 12.5 percent in the fourth quarter of 2016 to its minimum of 9.2 percent over the planning horizon.

In the adverse scenario, aggregate projected losses, PPNR, and net income before taxes are \$322 billion, \$541 billion, and \$214 billion, respectively. The aggregate CET1 capital ratio under the adverse scenario would fall to its minimum of 10.7 percent over the planning horizon. Details of the results are provided in the [Supervisory Stress Test Results](#) section of this report.

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.

Background on Dodd-Frank Act Stress Testing

In the wake of the financial crisis, Congress enacted the Dodd-Frank Act,¹⁰ which, among other provisions, requires the Federal Reserve to conduct an annual supervisory stress test. The Dodd-Frank Act also requires the same firms that are subject to the supervisory stress test to conduct their own stress tests and report the results to the Federal Reserve twice a year (company-run stress test).¹¹ LISCC firms are subject to Dodd-Frank Act supervisory stress testing, as are large and complex firms¹² and large and noncomplex firms.¹³

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.¹⁴ For the annual company-run stress test, the BHCs use the same planning horizon, capital action assumptions, and scenarios¹⁵ as those used in the supervisory stress test.¹⁶ The use of common capital action assumptions and scenarios enhances the comparability of the supervisory and company-run results.

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 lend. 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.¹⁷ The Federal Reserve must publicly disclose supervisory stress test results by June 30 of the calendar year in which the stress test was conducted, and each BHC must disclose a summary of its company-run stress test within the 15 calendar days following.¹⁸

¹⁰ Pub. L. No. 111-203, 124 Stat. 1376 (2010).

¹¹ 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 covered companies, defined as BHCs, U.S. IHCs, or nonbank financial companies with average total consolidated assets of \$50 billion or more, are subject to the additional mid-cycle stress test and the supervisory stress test. See 12 USC 5365(i)(2) and 12 CFR 252.52(g).

¹² The LISCC or large and complex firms required to participate in DFAST 2017 are Bank of America Corporation; The Bank of New York Mellon Corporation; Capital One Financial Corporation; Citigroup Inc.; The Goldman Sachs Group, Inc.; HSBC North America Holdings Inc.; JPMorgan Chase & Co.; Morgan Stanley; The PNC Financial Services Group, Inc.; State Street Corporation; TD Group US Holdings LLC; U.S. Bancorp; and Wells Fargo & Company.

¹³ The large and noncomplex firms participating in DFAST 2017 are Ally Financial Inc.; American Express Company; BancWest Corporation; BB&T Corporation; BBVA Compass Bancshares, Inc.; BMO Financial Corp.; CIT Group Inc.; Citizens Financial Group, Inc.; Comerica Incorporated; Discover Financial Services; Fifth Third Bancorp; Huntington Bancshares Incorporated; KeyCorp; M&T Bank Corporation; MUFG Americas Holdings Corporation; Northern Trust Corporation; Regions Financial Corporation; Santander Holdings USA, Inc.; SunTrust Banks, Inc.; and Zions Bancorporation.

¹⁴ 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 (12 CFR part 252, appendix A).

¹⁵ Under the stress test rules, the Federal Reserve was required to provide the scenarios to companies no later than February 15, 2017, for DFAST 2017. See 12 CFR 252.54(b)(1).

¹⁶ See 12 CFR 252.54.

¹⁷ 12 USC 5365(i)(1)(B)(v) and 5365(i)(2)(C)(iv).

¹⁸ See 12 CFR 252.46(b) and 12 CFR 252.58(a)(i).

Supervisory Scenarios

On February 3, 2017, the Federal Reserve released the three supervisory scenarios: baseline, adverse, and severely adverse.¹⁹ 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.²⁰ 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 blocks.

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](#)).

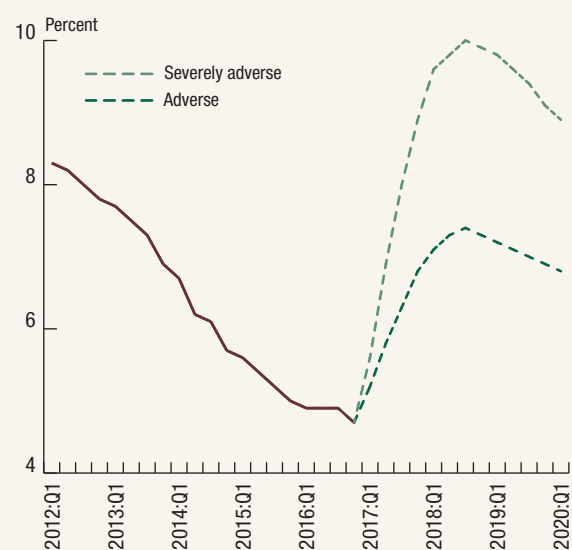
Severely Adverse Scenario

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.

¹⁹ See Board of Governors of the Federal Reserve System (2017), "2017 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, February 3), <https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20170203a5.pdf> for additional information and for the details of the supervisory scenarios.

²⁰ CFR part 252, appendix A.

Figure 2. Unemployment rate in the severely adverse and adverse scenarios, 2012:Q1–2020:Q1

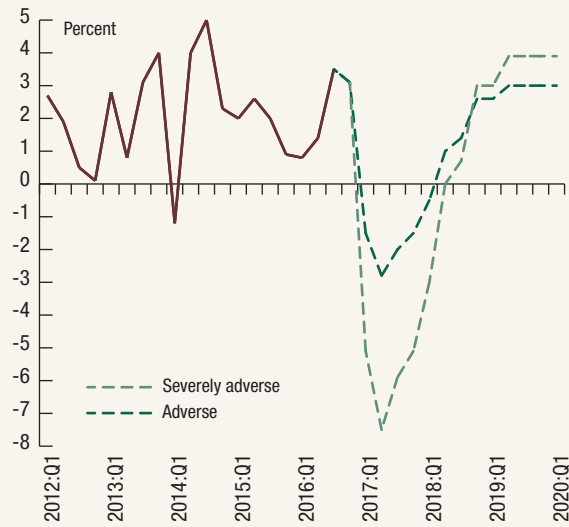


Source: Bureau of Labor Statistics and Federal Reserve assumptions in the supervisory scenarios.

The severely adverse scenario is characterized by a severe global recession that is accompanied by a period of heightened stress in corporate loan markets and commercial real estate markets. In this scenario, the level of U.S. real GDP begins to decline in the first quarter of 2017 and reaches a trough in the second quarter of 2018 that is about 6½ percent below the pre-recession peak. The unemployment rate increases by about 5¼ percentage points, to 10 percent, by the third quarter of 2018. Headline consumer price inflation falls to about 1¼ percent at an annual rate by the second quarter of 2017 and then rises to about 1¾ percent at an annual rate by the middle of 2018.

As a result of the severe decline in real activity, short-term Treasury rates fall and remain near zero through the end of the scenario period. The 10-year Treasury yield drops to ¾ percent in the first quarter of 2017, rising gradually thereafter to around

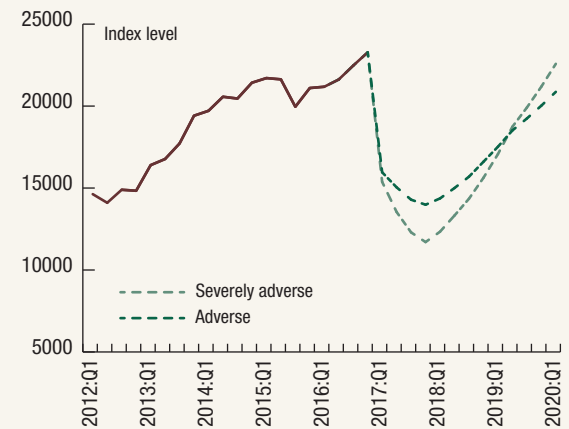
Figure 3. Real GDP growth rate in the severely adverse and adverse scenarios, 2012:Q1–2020:Q1



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

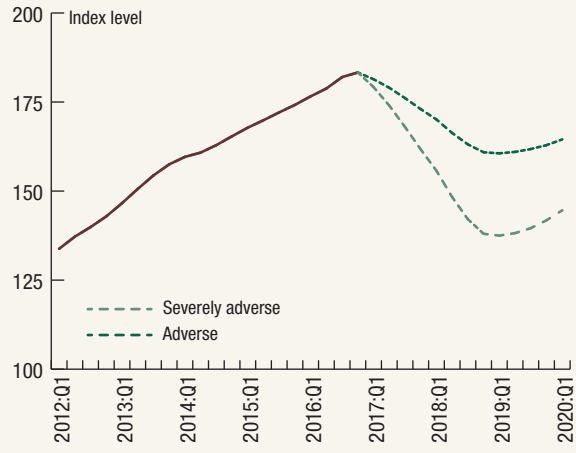
1½ percent by the first quarter of 2019 and to about 1¾ percent by the first quarter of 2020. Financial conditions in corporate and real estate lending markets are stressed severely. The spread between yields on investment-grade corporate bonds and yields on long-term Treasury securities widens to about 5½ percentage points by the end of 2017, an increase of 3½ percentage points relative to the fourth quarter of 2016. The spread between mortgage rates and

Figure 4. Dow Jones Total Stock Market Index, end of quarter, in the severely adverse and adverse scenarios, 2012:Q1–2020: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, 2012:Q1–2020:Q1

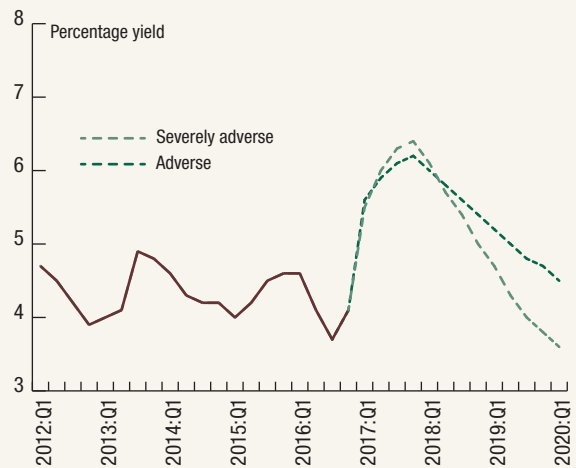


Source: CoreLogic (seasonally adjusted by Federal Reserve) and Federal Reserve assumptions in the supervisory scenarios.

10-year Treasury yields widens to over 3½ percent-age points over the same time period.

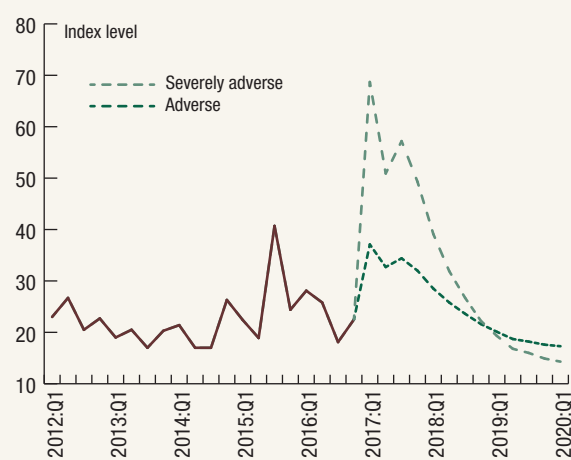
Asset prices drop sharply in this scenario. Equity prices fall by 50 percent through the end of 2017, accompanied by a surge in equity market volatility, which approaches the levels attained in 2008. House prices and commercial real estate prices also experience large declines, with house prices and commercial real estate prices falling by 25 percent and 35 percent, respectively, through the first quarter of 2019.

Figure 6. U.S. BBB corporate yield, quarterly average in the severely adverse and adverse scenarios, 2012:Q1–2020:Q1



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

Figure 7. U.S. Market Volatility Index (VIX) in the severely adverse and adverse scenarios, 2012:Q1–2020: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.

The international component of this scenario features severe recessions in the euro area, the United Kingdom, and Japan and a marked growth slowdown in developing Asia. As a result of the sharp contraction in economic activity, all foreign economies included in the scenario experience a decline in consumer prices. As in this year's adverse scenario, the U.S. dollar appreciates against the euro, the pound sterling, and the currencies of developing Asia but depreciates modestly against the yen because of flight-to-safety capital flows.

This year's severely adverse scenario features a slightly more severe downturn in the U.S. economy as compared to the DFAST 2016 scenario. Under the scenario design 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 the further the starting unemployment rate is below 6 percent. Furthermore, this year's scenario does not feature a path of negative short-term U.S. Treasury rates that was featured in last year's scenario. In addition, this year's severely adverse scenario features a larger decline in commercial real estate prices. The international dimension of the scenarios shows recessionary episodes that, relative to last year's scenario, are more severe in the euro area and United Kingdom but less severe in developing Asia.

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 of the economies included in the scenario. This economic downturn is accompanied by a global aversion to long-term fixed-income assets that, despite lower short rates, brings about a near-term rise in long-term rates and steepening yield curves in the United States and the four countries/country blocks in the scenario.

In the adverse scenario, the U.S. economy experiences a moderate recession that begins in the first quarter of 2017. Real GDP falls slightly more than 2 percent from the pre-recession peak in the fourth quarter of 2016 to the recession trough in the first quarter of 2018, while the unemployment rate rises steadily, peaking at about 7¼ percent in the third quarter of 2018. The U.S. recession is accompanied by an initial fall in inflation through the third quarter of 2017, with the rate of increase in consumer prices then rising steadily and reaching 2 percent by the middle of 2018.

Reflecting weak economic conditions, short-term interest rates in the United States fall and remain near zero for the rest of the scenario period. With the increase in term premiums, 10-year Treasury yields gradually rise to a little less than 2¾ percent by the second half of 2018. Financial conditions tighten for corporations and households during the recession. Spreads between investment-grade corporate bond yields and 10-year Treasury yields widen to about 3¾ percentage points by the end of 2017, while spreads between mortgage rates and 10-year Treasury yields widen to about 2½ percentage points over the same period.

Asset prices decline in the adverse scenario. Equity prices fall approximately 40 percent through the fourth quarter of 2017, accompanied by a rise in equity market volatility. Aggregate house prices and commercial real estate prices experience less sizable but more sustained declines compared to equity prices; house prices fall 12 percent through the first quarter of 2019 and commercial real estate prices fall 15 percent through the fourth quarter of 2018.

Following the recession in the United States, real activity picks up slowly at first and then gains momentum; growth in real U.S. GDP accelerates from an increase of 1 percent at an annual rate in the second quarter of 2018 to an increase of 3 percent at an annual rate by the middle of 2019. The unemployment rate declines modestly, from its peak of about 7¼ percent in the third quarter of 2018 to under 7 percent by the end of the scenario period. Consumer price inflation remains at roughly 2 percent from the middle of 2018 through the end of the scenario period. Ten-year Treasury yields show little change after the second half of 2018 and remain around 2¾ percent.

Outside of the United States, the adverse scenario features recessions in the euro area, the United Kingdom, and Japan, as well as below-trend growth in developing Asia. The declines in activity in the euro area and the United Kingdom are broadly similar and less pronounced than in Japan.

Weakness in global demand results in a slowing in inflation in all of the foreign economies under consideration. Japan experiences outright deflation through the first quarter of 2019. Reflecting flight-to-safety capital flows, the U.S. dollar appreciates against the euro, the pound sterling, and the currencies of developing Asia. The dollar depreciates modestly against the yen, also in line with flight-to-safety capital flows.

The main difference relative to the 2016 adverse scenario is that this year's adverse scenario features higher long-term rates and a steeper yield curve across all of the economies during the recession. Another difference from last year's scenario is the incidence and extent of deflationary episodes. The 2016 adverse scenario featured wide-spread deflation across all of the economies included in the scenario. In this year's adverse scenario, deflation is regionally concentrated—more pronounced in Japan, less severe in the euro area and developing Asia, and absent in the United Kingdom and United States.

Global Market Shock and Counterparty Default Components

The Federal Reserve applied a global market shock to the trading portfolios of six BHCs with large trad-

ing and private equity exposures.²¹ In addition, the 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.²² These components are an add-on to the economic conditions and financial market environment specified in the adverse and severely adverse scenarios.

The global market shock is a set of instantaneous, hypothetical shocks to a large set of risk factors. Generally, these shocks involve large and sudden changes in asset prices, interest rates, and spreads, reflecting general market dislocation and heightened uncertainty.²³ The Federal Reserve published the global market shock for the adverse and severely adverse scenarios on February 3, 2017; the as-of date for the global market shock and the counterparty default is January 3, 2017.

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 non-agency securitized products, corporate debt, and private equity, and is less pronounced in those markets that are typically more liquid, such as foreign exchange, 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 2007–2009 period. The severity of dete-

²¹ The six BHCs subject to the global market shock are Bank of America Corporation; Citigroup Inc.; The Goldman Sachs Group, Inc.; JPMorgan Chase & Co.; Morgan Stanley; and Wells Fargo & Co. See 12 CFR 252.54(b)(2).

²² 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).

²³ See CCAR 2017: Severely Adverse Global Market Shocks at <https://www.federalreserve.gov/econres/files/ccar-2017-severely-adverse-market-shocks.xlsx>, and CCAR 2017: Adverse Global Market Shocks at <https://www.federalreserve.gov/econres/files/ccar-2017-adverse-market-shocks.xlsx>.

rioration 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 or moderate the price dislocations. 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 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 (MBSs) increase significantly.

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 push risk-free rates down in the United States. The yield curves for government bonds flatten or invert across Europe and Asia while volatility increases across the term structure. Emerging market countries with deteriorating economic and fiscal accounts would also experience a sharp increase in sovereign spreads.

The major differences between the global market shock under the 2017 and 2016 severely adverse scenarios include (1) dampened shocks to interest rates and other liquid markets, (2) increased shocks to

select commodities and equities basis risks, and (3) a less severe widening in spreads between agency MBSs and to-be-announced (TBA) forwards.

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. Generally, domestic government yields and associated volatility move lower, while swap spreads widen. Due to reduced demand, global commodity prices decline moderately, while MBSs and domestic 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 2017 adverse scenario addresses themes similar to those of the 2016 adverse scenario.

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

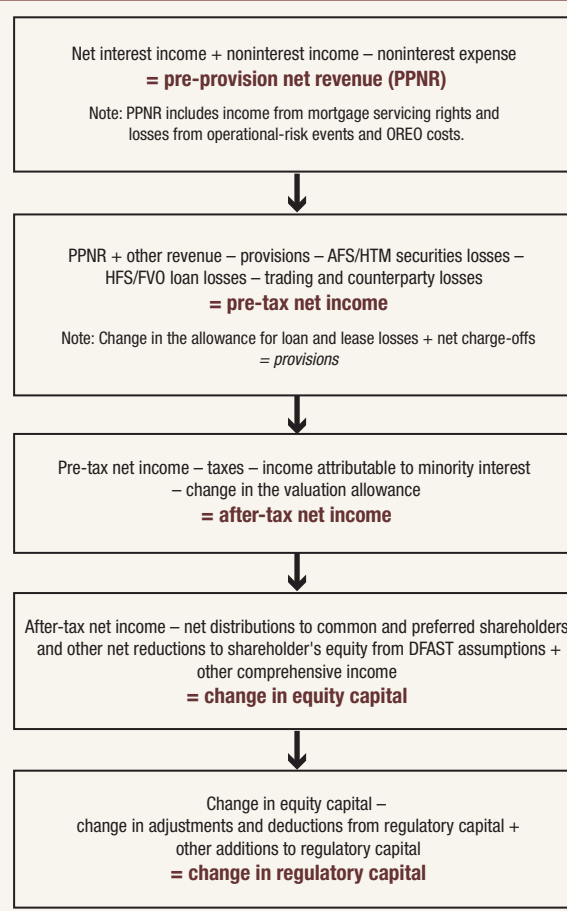
The Federal Reserve estimated the effect of the supervisory scenarios on the regulatory capital ratios of the 34 BHCs participating in DFAST 2017 by projecting the balance sheet, RWAs, net income, and resulting capital for each BHC over a nine-quarter planning horizon, which for DFAST 2017 begins in the first quarter of 2017 and ends in the first quarter of 2019. Projected net income, adjusted for the effect of taxes, is combined with capital action assumptions to project changes in equity capital. The approach followed U.S. generally accepted accounting principles (GAAP) and regulatory revised capital framework.²⁴ Figure 8 illustrates the framework used to calculate changes in net income and regulatory capital.

Projected net income for the 34 BHCs is generated from projections of revenue, expenses, and various types of losses and provisions that flow into pre-tax net income, including

- pre-provision net revenue (PPNR);
- loan losses and changes in the allowance for loan and lease losses (ALLL);
- losses on loans held for sale (HFS) or for investment and measured under the fair-value option (FVO);
- 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.

²⁴ CFR part 217.

Figure 8. Projecting net income and regulatory capital



PPNR equals net interest income plus noninterest income minus noninterest expense. Consistent with U.S. GAAP, the projection of noninterest expense includes projected losses due to operational-risk events such as fraud, computer system or other operating disruptions, and litigation-related costs 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 the Board's capital adequacy rules, 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.²⁵ 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

²⁵ A security is considered impaired when the fair value of the security falls below its amortized cost.

reductions in compensation or other expenses in reaction to the global market shock. In addition, 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 while demand for credit changes in response to conditions 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.²⁶ Only divestitures that had been completed or contractually agreed to prior to April 5, 2017, are incorporated. Once adjusted, assets are assumed to grow at the same rate as the pre-adjusted balance sheet.

Model Methodology

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 34 BHCs participating in DFAST 2017 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

²⁶ 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.

characteristics of the BHCs' loans and securities portfolios; trading, private equity, and counterparty exposures from derivatives and SFTs; business activities; and other relevant factors.²⁷

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

Models were developed using multiple data sources, including pooled historical data from financial institutions. An industrywide approach was generally adhered to, in which the estimated model parameters are the same for all BHCs and reflect the industrywide, portfolio-specific, instrument-specific response to variation in the macroeconomic and financial market variables. This approach reflects both the challenge in estimating separate statistically robust models for each of the 34 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 when the historical data used to estimate the model were not sufficiently granular to capture the impact of firm-specific risk factors, and BHC-specific indicator variables (fixed effects) representing the firm's average longer-term history were more predictive of the firm's future performance than industry variables. For example, the models to project components of PPNR feature BHC-specific indicator variables because available data are not sufficiently granular and a BHC's own history, after controlling for structural changes over time, is proven to be more predictive of the BHC's revenues and expenses under stress than industry-level history (see [box 2](#)). In some other cases, such as the projections of trading and counterparty losses, sensitivities to risk factors and other information generated by the BHCs from their internal pricing models are used due to the lack of position-level data and modeling complexity.

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.

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 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

²⁷ 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.

Box 1. Model Changes for DFAST 2017

Each year, the Federal Reserve has refined both the substance and process of the Dodd-Frank Act supervisory stress tests, including its development and enhancement of independent supervisory models. The supervisory stress test models may be revised to reflect advances in modeling techniques, enhancements in response to model validation findings, the incorporation of richer and more detailed data, and identification of more stable models or models with improved performance, particularly under stressful economic conditions.

For DFAST 2017, the Federal Reserve's operational risk and commercial real estate (CRE) loan loss models were enhanced, the mortgage repurchase model was retired due to the decline in repurchase risk, and the supplementary leverage ratio was added to the calculation of projected capital. Each of these modifications are described in more detail below. In addition, the Federal Reserve began to phase in material enhancements to the model that estimates certain components of PPNR.

In addition to the model changes described below, overall changes in PPNR projections and CRE loan losses are attributable to several other factors, including portfolio composition changes, changes in the macroeconomic scenario, and changes in the historical data used to estimate the models.

Enhancement of PPNR Models

Operational Risk Model Enhancements

Operational risk events and expenses related to mortgage repurchases represent two significant components of PPNR. For DFAST 2017, the Federal Reserve used an enhanced operational risk

model to capture losses from both of these components, and discontinued the use of the mortgage repurchase model used in prior years. Mortgage repurchase risk has declined in recent years due to improved underwriting standards and settlements relating to representations and warranties for pre-crisis vintages. Further, new data from recent mortgage repurchase settlements have allowed the operational risk model to better incorporate mortgage repurchase risk, reducing the need to have a separate mortgage repurchase model.

The Federal Reserve's operational risk model forecasts losses using an average of estimates from two models—a historical simulation model, which remains unchanged, and a regression-based model, which relates operational risk to economic conditions. The regression-based model used in previous stress testing cycles determined total losses from loss frequency and severity separately. Loss frequency was modeled as a function of economic conditions, while loss severity was based on a firm-specific, long-run average for each type of operational risk event. This dampened the sensitivity of projected losses to economic conditions.

For DFAST 2017, the Federal Reserve used an enhanced regression-based model that forecasts total losses at the industry level and then distributes those losses to each firm based on its asset size. The use of the industry model allows the Federal Reserve to account for operational-risk losses more consistently across BHCs. In addition, this approach simplifies the methodology and increases the sensitivity of projected losses to economic conditions.

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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 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 generally 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 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

Box 1. Model Changes for DFAST 2017 (continued)

Enhancements to Other PPNR Component Models

The models that estimate certain components of PPNR—such as net interest income, noninterest income, and noninterest expense—have been enhanced for DFAST 2017 to better account for differences in post-crisis performance across firms. The enhancements to this model and the timeline for their completion are described in more detail in box 2.

The enhanced models have material effects on the projections for individual firms. As a result, the Federal Reserve will phase in the change over two years to smooth the effect on post-stress capital ratios. For the 2017 stress test, PPNR estimates reflect the average of the model used during DFAST 2016 and the enhanced model. PPNR estimates for the 2018 stress test will reflect the updated model only.

Impact of Changes to PPNR Models

The combined effect of PPNR model changes in DFAST 2017 is a slight decrease in industry PPNR under the supervisory severely adverse scenario. However, certain firms experienced material increases or decreases in projected PPNR.

CRE Loan Loss Model Enhancement

The CRE loan loss model projects losses on loans collateralized by income-producing properties as well as construction and land development loans. The model used in previous stress test cycles relied on parameters estimated separately, using Capital Assessments and Stress Testing (FR Y-14Q) data

and commercial mortgage-backed securities data, respectively, to capture the losses from the financial crisis and more recent times. Assumptions were required to combine those parameters in a consistent fashion.

For DFAST 2017, the Federal Reserve streamlined the estimation process by combining the two datasets before model estimation. In addition, in the process of re-estimating the model, the Federal Reserve updated the model's macroeconomic variables to better capture loan losses under stress.

Addition of the Supplementary Leverage Ratio (SLR) to the Calculation of Projected Capital

The calculation of projected capital incorporates a firm's projected losses, revenue, balances, RWAs, and applicable capital actions to construct projected supervisory capital ratios. For DFAST 2017, the Federal Reserve updated the capital calculation to include post-stress projections of the SLR. Under the Federal Reserve's capital regulations, advanced approaches BHCs are required to maintain at least a 3 percent SLR, starting in 2018.

The SLR is defined as tier 1 capital divided by total leverage exposure, which includes both on- and off-balance sheet items. The calculation of projected SLR incorporates the projections of tier 1 capital and on-balance sheet assets included in the tier 1 leverage ratio, as well as the projected path of off-balance sheet exposures. The path of those off-balance sheet items is based on the bank-reported off-balance sheet SLR exposure, and is assumed to grow at the supervisory model-projected total asset growth rate.

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.²⁸

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 (DTAs) and income attributable to minority interests.

²⁸ *Financial Accounts of the United States* (Z.1) is available on the Federal Reserve website at www.federalreserve.gov/releases/z1/.

Model Risk Management, Governance, and Validation

The Federal Reserve places great emphasis on the credibility of its supervisory stress testing process, which is supported by a rigorous program of supervisory model risk management. The Federal Reserve's supervisory model risk management program includes effective oversight of model development to ensure adherence to consistent development principles; rigorous and independent model validation; a strong supervisory model governance structure; and annual communication of the state of model risk in the overall program to the Board of Governors. Several aspects of the Federal Reserve's supervisory stress testing program, including its

Box 2. Changes to the Models Used to Estimate PPNR in DFAST 2017

A key component of the DFAST results is pre-provision net revenue (PPNR).¹ A firm's PPNR can offset losses, and PPNR itself is sensitive to the state of the economy. As a result, PPNR projections are important in assessing whether a firm can absorb losses and remain adequately capitalized under stressful economic conditions.

As noted in box 1, the Federal Reserve has enhanced the models it uses to estimate PPNR. For DFAST 2017, the Federal Reserve applied an enhanced operational risk model to capture losses from both operational risk events and expenses related to mortgage repurchases, which are both components of PPNR.² The Federal Reserve has also enhanced models used to estimate other components of PPNR, key details of which are described below. The Federal Reserve expects these changes to lead to more accurate revenue and expense projections under stress.

For other components of PPNR, the projections previously depended on several factors: the firm's own

¹ PPNR is defined as net interest income plus non-interest income minus noninterest expense. Specific descriptions of the components of net interest income, noninterest income, and noninterest expense can be found in appendix B.

² The separate mortgage repurchase model has been retired. See Box 1 for further information and for a description of the enhanced operational risk model.

performance over the most recent quarter or two; the longer-run average performance of similar firms; and relevant measures of economic conditions, such as Treasury yields. Enhancements to the models, which project those other components of PPNR, are described below.

Under the original models—as illustrated in figure A—revenues or expenses for firms with a similar mix of assets would be projected to converge over time, even if a particular firm had consistently outperformed or underperformed its peers in the past. Since persistent strong or weak performance relative to peers was not being taken into account, this approach somewhat benefitted firms who underperformed their peers and impaired firms who outperformed their peers.

In the hypothetical example presented in figure A, although Firm A and Firm B hold similar assets, Firm A consistently earns more revenue than Firm B. The dashed lines represent the projected future revenues under the original models, which predict that the firms' revenues converge over time. As a result, the revenue (scaled by assets) of Firm A is projected to reach a level below its own historical average while the revenue of Firm B is projected to reach a level above its own historical average.

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model risk management framework, have been reviewed by external parties.

Most of the models used for supervisory stress testing were developed by Federal Reserve staff, although certain models were developed by third parties.²⁹ In developing the supervisory models, Federal Reserve staff draws on economic research as well as industry practice in modeling the effects of borrower, instrument, collateral characteristics, and macroeconomic factors on revenues, expenses, and losses. Three groups are, collectively, responsible for managing and validating the Federal Reserve's supervisory stress testing models: the Model Oversight Group (MOG), the System Model Validation unit, and the Supervisory Stress Test Model Governance Committee.

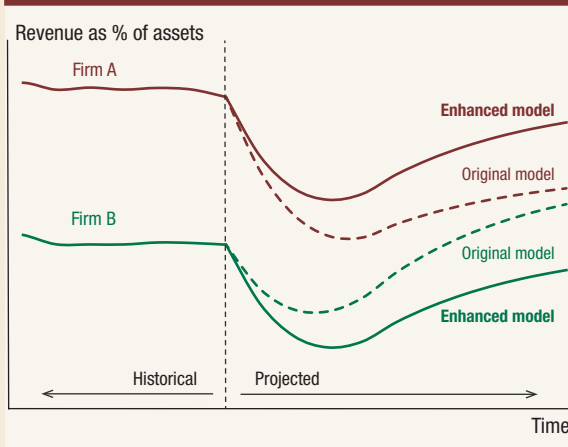
²⁹ A list of providers of the proprietary models and data used by the Federal Reserve in connection with DFAST 2017 is available in appendix B. In some instances, the Federal Reserve relies on firm-provided estimates in place of model output.

Supervisory model development, implementation, and use is overseen by the MOG, a national committee of senior staff drawn from across the Federal Reserve System. The MOG strives to produce supervisory stress test results that reflect likely outcomes under the supervisory scenarios and ensures that model design across the system of supervisory stress testing models result in projections that are

- from an independent supervisory perspective;
- forward-looking and may incorporate outcomes outside of historical experience, where appropriate;
- based on the same set of models and assumptions across BHCs;
- generated from simpler and more transparent approaches, where appropriate;
- stable such that changes in model projections over time reflect underlying risk factors, scenarios, and model enhancements, rather than transitory factors;

Box 2. Changes to the Models Used to Estimate PPNR in DFAST 2017 (continued)

Figure A. Hypothetical revenue projections from the original and enhanced PPNR models



Under the enhanced models, each BHC's projected revenue and expenses are more closely tied to the BHC's own post-crisis average performance.³ As shown by the solid lines in the chart above, Firm A should have higher projected revenue following a

³ The post-crisis average performance is defined as the fourth quarter of 2009 onwards.

stress event under the enhanced model because its historical performance exceeds that of its peers. Similarly, the enhanced model will better reflect that Firm B should have lower projected revenue following a stress event because its historical performance is lower than that of its peers.

The enhanced models perform better than the original models used in DFAST 2016 according to several metrics. First, they fit historical patterns in PPNR more closely than the original models, based on statistical measures of fit. Second, the models perform better in 'out-of-sample' performance testing, or testing model performance using a data sample other than that used to estimate the models. Third, the enhanced models are more responsive to economic conditions. Fourth, the enhanced models are less sensitive to the most recent historical value of the BHC's revenues and expenses, improving model stability for individual firms over time.

Because the enhanced PPNR models materially affect the projections of PPNR for some firms, the Federal Reserve is phasing in these changes over two years. For DFAST 2017, PPNR estimates reflect the average of the original model used during DFAST 2016 and the enhanced model. PPNR estimates for DFAST 2018 will reflect the enhanced model only.

- appropriately conservative; and
- consistent with the purpose of a stress testing exercise.

In overseeing the development of supervisory models, the MOG considers whether modeling choices and structures adhere to the above principles, reviews the results of common model risk management tools,³⁰ and assesses potential model limitations and sources of uncertainty surrounding final outputs. Assisting the MOG in these efforts is the Model Risk Management Group, which reviews, assesses, and implements industry standards and best practices for model risk management in stress testing operations. This group is composed of Federal Reserve staff and helps set internal policies, procedures, and standards related to the management of model risk stemming from individual models as well as the system of

³⁰ Those tools include the use of benchmark models, where applicable, performance testing, and sensitivity analysis, which isolates the effect of a change in one model input on the eventual model output.

supervisory models used to project post-stress capital ratios. In this way, the Federal Reserve's approach reflects the same standards for model risk management to which banking organizations are expected to adhere.

Each year, the supervisory stress testing models are validated by an independent System Model Validation unit comprised of dedicated full-time staff members not involved in supervisory modeling, supplemented by subject matter experts from across the Federal Reserve System. This group's model validation process includes reviews of model performance and conceptual soundness and reviews of the processes, procedures, and controls used in model development, implementation, and the production of results. For each model, the group assesses on an annual basis the model's reliability, based on its underlying assumptions, theory, and methods, and determines whether there are any issues requiring remediation as a result of that assessment. The Model Validation Council, a group of academic experts not affiliated with the Federal Reserve, pro-

vides advice to the Federal Reserve on the validation program and activities.³¹

The MOG and the System Model Validation unit are overseen by the Director of the Federal Reserve Board's Division of Supervision and Regulation. The Supervisory Stress Test Model Governance Committee, a committee of senior Federal Reserve staff that includes representatives from model development, implementation, and validation, advises the Director on matters related to the governance of supervisory stress test models and facilitates the Director's oversight role by providing a regular forum to present and discuss relevant issues. This committee also identifies key model risk issues in the supervisory stress testing program and elevates these issues to the Director and the Board of Governors. In 2016, the committee initiated an annual formal communication to the Board of Governors on the structure of the supervisory stress test model risk management program and the state of model risk as determined by each year's model validation process.

The development and validation of the supervisory stress testing models have been subject to rigorous review by both internal and external parties. In 2015, the Federal Reserve Office of the Inspector General (OIG) reviewed supervisory stress testing model validation activities and recommended improvements in staffing, model inventories, and communication with management.³² As of this year, each of the suggested improvements recommended by the OIG have been implemented, and the OIG has formally closed its findings. In 2016, the Government Accountability Office (GAO) issued a report on the Federal Reserve's stress testing and capital planning programs.³³ The GAO's report recognized that the Federal Reserve's stress testing program has played a key role in evaluating and maintaining the stability of the U.S. financial system during and since the most recent financial crisis. The GAO report included five recommendations as to how the Federal Reserve could improve its management of model risk and

ensure that decisions based on supervisory stress test results are informed by an understanding of model risk. The Federal Reserve is actively addressing these recommendations and views these evaluations as opportunities to continue to strengthen the credibility of the supervisory stress test.

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) information collection, which include a set of annual, quarterly, or monthly schedules.³⁴ 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 34 BHCs participating in DFAST 2017 submitted data as of December 31, 2016, through the FR Y-14M and FR Y-14Q reports in February, March, and April 2017. The same BHCs submitted the FR Y-14A reports, which also include projected data, on April 5, 2017.

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 for LISCC and large and complex firms. Portfolios are deemed to be material for large and noncomplex firms if the size of the portfolio exceeds either 10 percent of the BHC's tier 1 capital or \$5 billion.³⁵ The portfolio categories

³¹ See "Federal Reserve Board announces the formation of the Model Validation Council," April 20, 2012, <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20120420a.htm>.

³² See "The Board Identified Areas of Improvement for Its Supervisory Stress Testing Model Validation Activities, and Opportunities Exist for Further Enhancement," October 29, 2015, <https://oig.federalreserve.gov/reports/board-supervisory-stress-testing-model-validation-reissue-oct2015.pdf>.

³³ See "Additional Actions Could Help Ensure the Achievement of Stress Test Goals," GAO-17-48, November 2016, <https://www.gao.gov/assets/690/681020.pdf>.

³⁴ The FR Y-14 reports are available on the Federal Reserve website at www.federalreserve.gov/apps/reportforms/default.aspx.

³⁵ The Federal Reserve raised the immateriality threshold for large and noncomplex firms from 5 percent of tier 1 capital or \$5 billion to 10 percent of tier 1 capital or \$5 billion. See Amendments to the Capital Plan and Stress Test Rules, 82 Fed. Reg.

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 the median loss rate on immaterial portfolios held at all firms subject to the supervisory stress test.

While BHCs are responsible for ensuring the completeness and accuracy of data reported in the FR Y-14 information collection, 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 revised capital framework.

The Dodd-Frank Act company-run stress test rules prescribe consistent capital action assumptions for all BHCs.³⁶ 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

9308 (February 3, 2017), <https://www.gpo.gov/fdsys/pkg/FR-2017-02-03/pdf/2017-02257.pdf>.

³⁶ 12 CFR 252.56(b).

Table 1. Applicable capital ratios and calculations for BHCs in the 2017 Dodd-Frank Act stress tests

Capital ratio	Calculation, by aspect of ratio	
	Capital in numerator	Denominator
Common equity tier 1 ratio	Revised capital framework	Standardized approach RWAs
Tier 1 ratio	Revised capital framework	Standardized approach RWAs
Total capital ratio	Revised capital framework	Standardized approach RWAs
Tier 1 leverage ratio	Revised capital framework	Average assets
Supplementary leverage ratio	Revised capital framework	Average assets and off-balance sheet exposures

the three preceding calendar quarters.³⁷ 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 zero, except for issuance of common or preferred stock associated with expensed employee compensation or in connection with a planned merger or acquisition.

³⁷ 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.

The five regulatory capital measures in DFAST 2017 are the common equity tier 1, tier 1 risk-based capital, total risk-based capital, tier 1 leverage, and supplementary 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, RWAs, and off-balance sheet exposures.

The denominator of each BHC's regulatory capital ratios, other than the leverage ratios, 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.³⁸

³⁸ See 12 CFR 252.42(m); 80 Fed. Reg. 75,419; 12 CFR part 217, subpart G.

Supervisory Stress Test Results

This section describes the Federal Reserve's projections of RWAs, losses, revenues, expenses, and capital positions for the 34 BHCs participating in DFAST 2017 under the severely adverse and adverse scenarios. Results are presented both in the aggregate for the 34 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](#).

Year-over-year changes in supervisory stress test results reflect changes in

- BHC starting capital positions;
- scenarios used for the supervisory stress test;
- portfolio composition and risk characteristics; and
- models used in the supervisory stress test.

In the aggregate, changes in portfolio composition and risk characteristics have contributed to lower loss rates in DFAST 2017 compared to DFAST 2016. However, the trend varied across the firms. In the aggregate, DFAST firms have increased the share of agency MBS and Treasuries in their securities portfolios and have reduced the holdings of less liquid assets like securitized products in their trading portfolios. Overall loan portfolios have grown, driven by strong growth in corporate, commercial real estate, and credit card loans. Residential mortgage growth lagged behind the overall loan growth, as healthy growth in first-lien mortgages was offset by a notable decline in home equity loans. The credit quality of some loan portfolios, including first-lien mortgages and commercial mortgages, has improved, in large part due to recent rises in real estate prices. However, improvements in portfolios collateralized

by real estate were partially offset by continued stress on certain corporate loans due to persistently low oil prices and a recent uptick in delinquency rates in credit card portfolios.

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 2016 declines over the course of the planning horizon, with first-quarter 2019 levels ranging from 2.1 percentage points to 3.2 percentage points lower than at the start of the planning horizon (see [table 2](#)).³⁹ [Tables 4.A, 4.B, and 4.C](#) present these ratios for each of the 34 BHCs.

The changes in post-stress capital ratios vary considerably across BHCs (see [figure 10](#)). The capital ratios for all firms decline 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 horizon. 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 34 BHCs as a group would experience significant losses on positions and loans under the severely adverse scenario.

³⁹ In [table 2](#), the decline from starting to ending aggregate tier 1 leverage ratio is 2.2 percentage points. The difference is due to rounding.

In this scenario, losses are projected to be \$493 billion for the 34 BHCs in the aggregate over the nine quarters of the planning horizon. These losses include

- \$383 billion in accrual loan portfolio losses;
- \$5 billion in OTTI and other realized securities losses;
- \$86 billion in trading and/or counterparty losses at the eight BHCs with substantial trading, processing, or custodial operations; and
- \$18 billion in additional losses from items such as loans booked under the fair-value option (see table 2).

The largest losses derive from two sources: (i) accrual loan portfolios and (ii) 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 34 BHCs in the severely adverse scenario (figure 9).

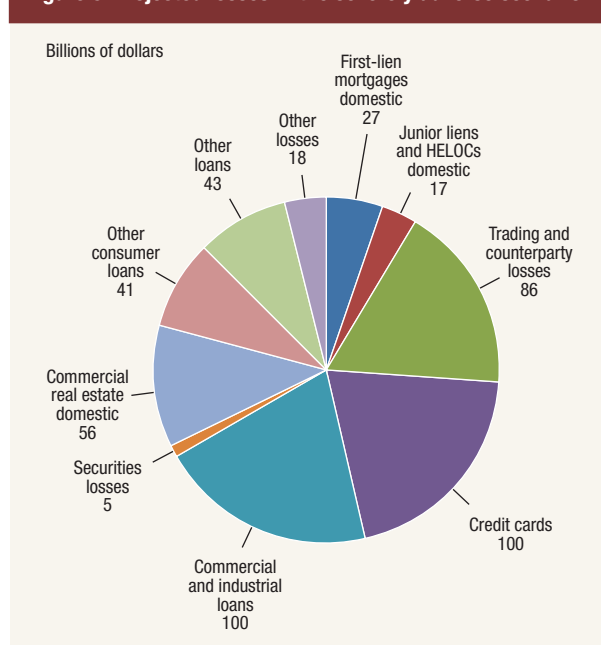
Loan Losses

Projected losses on consumer-related lending—domestic residential mortgages, credit cards, and other consumer loans—represent 48 percent of projected loan losses and 37 percent of total projected losses for the 34 BHCs (see table 2). This is consistent with the severely adverse scenario, which features high unemployment rates and significant declines in housing prices. Credit card and commercial and industrial loan losses are the two largest categories of losses at \$100 billion each, combined representing 52 percent of total projected loan losses. This is followed by \$56 billion of losses in domestic commercial real estate loans.

For the 34 BHCs as a group, the nine-quarter cumulative loss rate for all accrual loan portfolios is 5.8 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 2.5 percent and 13.0 percent across these institutions (see table 7 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

Figure 9. Projected losses in the severely adverse scenario



matters because projected loss rates vary significantly by loan type. In the aggregate, nine-quarter cumulative loss rates vary between 2.2 percent on domestic first-lien mortgages and 13.7 percent on credit cards, 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 7 and figures D.1 through D.7).⁴⁰ 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 and industrial loans is 6.0 percent, the rates among BHCs with commercial and industrial loans vary from a low of 3.4 percent to a high of 13.8 percent. For commercial

⁴⁰ 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.

real estate loans, the range of projected loss rates is from 2.2 percent to 15.5 percent, with a median of 7.4 percent.

Projected loss rates for first-lien residential mortgages and home equity loans declined significantly from DFAST 2016, continuing a downward trend in recent years. This decline reflects continued improvement in the quality of bank mortgage portfolios, including a higher share of loans drawn from recent vintages for which underwriting standards are significantly tighter than the pre-2008 period and recent house price appreciation. Also contributing to the lower loss rates are a number of refinements to the estimation of the first-lien mortgage and home equity models and the adjustment to default rates applied to home equity lines of credit reaching the end of their draw period.

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 \$86 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 \$0.4 billion and \$25 billion across the eight BHCs (see [table 5](#)), 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 3, 2017) 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 34 BHCs are projected to generate \$418 billion in PPNR cumulatively over the nine quarters of the planning horizon, equal to 2.6 percent of their combined average assets (see [table 2](#)). PPNR projections 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.⁴¹ In aggregate for the 34 banks, those operational risk losses of almost \$109 billion this year are within the range of losses projected over the past several stress test cycles.

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.⁴² Importantly, lower PPNR rates do not necessarily imply lower net income, since the same business focus and revenue risk characteristics determining differences in 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 5](#) 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 34 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

⁴¹ 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.

⁴² 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.

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 \$421 billion in total provisions includes \$383 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 34 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 -\$111 billion over the planning horizon for the 34 BHCs.

The ratio of pre-tax net income to average assets for each of the 34 BHCs ranges between -3.3 percent

and 2.9 percent (see [figure 13](#)). Projected cumulative net income for most of the BHCs (25 of 34) 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 2017.

Final capital ratios for advanced approaches firms and other BHCs that opt into advanced approaches treatment for AOCI are also impacted by other comprehensive income (OCI) ([table 5](#)), which is driven by unrealized gains and losses on securities in the supervisory stress test.

Table 2. 34 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.5	9.4	9.2
Tier 1 capital ratio	13.9	10.8	10.6
Total capital ratio	16.5	13.3	13.3
Tier 1 leverage ratio	9.2	7.0	7.0
Supplementary leverage ratio	n/a	5.5	5.4

Note: In accordance with the regulatory capital framework, all risk-based capital ratios are calculated using standardized RWAs, which became effective on January 1, 2015.

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (%) ¹
Loan losses	383.1	5.8
First-lien mortgages, domestic	26.5	2.2
Junior liens and HELOCs, domestic	16.6	4.5
Commercial and industrial ²	99.8	6.4
Commercial real estate, domestic	56.1	7.0
Credit cards	100.0	13.7
Other consumer ³	41.1	5.9
Other loans ⁴	43.1	3.6

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	9,745.3	10,548.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	417.6	2.6
Other revenue ³	1.6	
<i>less</i>		
Provisions	420.9	
Realized losses/gains on securities (AFS/HTM)	5.2	
Trading and counterparty losses ⁴	86.0	
Other losses/gains ⁵	18.3	
<i>equals</i>		
Net income before taxes	-111.3	-0.7
Memo items		
Other comprehensive income ⁶	2.1	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-50.6	-57.4

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ Other losses/gains include 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

**Table 3. Projected minimum common equity tier 1 ratio under the severely adverse scenario, 2017:Q1–2019:Q1
34 participating bank holding companies**

Percent

Bank holding company	Stressed ratios with DFA stress testing capital action assumptions
Ally Financial Inc.	6.5
American Express Company	10.6
BancWest Corporation	9.1
Bank of America Corporation	8.9
The Bank of New York Mellon Corporation	11.2
BB&T Corporation	7.9
BBVA Compass Bancshares, Inc.	7.7
BMO Financial Corp.	8.0
Capital One Financial Corporation	7.0
CIT Group Inc.	12.9
Citigroup Inc.	9.7
Citizens Financial Group, Inc.	7.7
Comerica Incorporated	9.4
Deutsche Bank Trust Corporation	60.2
Discover Financial Services	10.4
Fifth Third Bancorp	8.0
The Goldman Sachs Group, Inc.	8.4
HSBC North America Holdings Inc.	12.9
Huntington Bancshares Incorporated	7.0
JPMorgan Chase & Co.	9.1
KeyCorp	6.8
M&T Bank Corporation	7.9
Morgan Stanley	9.4
MUFG Americas Holdings Corporation	12.5
Northern Trust Corporation	10.9
The PNC Financial Services Group, Inc.	8.0
Regions Financial Corporation	8.2
Santander Holdings USA, Inc.	12.4
State Street Corporation	7.4
SunTrust Banks, Inc.	7.1
TD Group US Holdings LLC	11.3
U.S. Bancorp	7.6
Wells Fargo & Company	8.6
Zions Bancorporation	8.5

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank 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 2017:Q1 to 2019:Q1. In accordance with the regulatory capital framework, all risk-based capital ratios are calculated using standardized RWAs, which became effective on January 1, 2015.

Source: Federal Reserve estimates in the severely adverse scenario.

Table 4.A. Capital ratios, actual 2016:Q4 and projected 2017:Q1–2019:Q1 under the severely adverse scenario: Advanced approaches firms

Percent

Bank holding company	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio			Supplementary leverage ratio*		
	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum
American Express Company	12.3	10.8	10.6	13.5	11.9	11.7	15.2	13.6	13.4	11.6	10.3	10.3	n/a	8.9	8.9
Bank of America Corporation	12.1	8.9	8.9	13.6	10.5	10.5	16.3	13.2	13.2	8.9	6.8	6.8	n/a	5.4	5.4
The Bank of New York Mellon Corporation	12.3	12.8	11.2	14.5	15.0	13.4	15.2	15.6	14.1	6.6	6.7	6.0	n/a	6.1	5.5
Capital One Financial Corporation	10.1	7.0	7.0	11.6	8.4	8.4	14.3	11.6	10.9	9.9	7.3	7.3	n/a	6.3	6.3
Citigroup Inc.	14.9	10.8	9.7	15.8	12.3	11.3	19.1	15.4	14.5	10.1	7.8	7.3	n/a	5.9	5.5
The Goldman Sachs Group, Inc.	14.5	9.4	8.4	16.6	11.4	10.2	19.8	14.3	13.3	9.4	6.3	5.9	n/a	4.3	4.1
HSBC North America Holdings Inc.	17.9	12.9	12.9	20.1	15.6	15.6	25.3	19.3	19.3	9.6	7.1	7.1	n/a	5.4	5.4
JPMorgan Chase & Co.	12.5	9.3	9.1	14.2	10.9	10.7	16.4	13.3	12.9	8.4	6.4	6.4	n/a	5.0	5.0
Morgan Stanley	17.8	11.1	9.4	20.0	13.4	11.7	23.2	16.3	14.9	8.4	5.5	4.9	n/a	4.2	3.8
Northern Trust Corporation	11.8	11.0	10.9	12.9	12.1	12.1	14.5	13.7	13.7	8.0	7.4	7.4	n/a	6.2	6.2
The PNC Financial Services Group, Inc.	10.6	8.3	8.0	12.0	9.5	9.3	14.3	11.4	11.4	10.1	8.1	8.0	n/a	6.8	6.7
State Street Corporation	11.6	8.7	7.4	14.7	11.6	10.4	16.0	12.6	11.5	6.5	5.1	4.6	n/a	4.6	4.2
TD Group US Holdings LLC	13.6	11.9	11.3	13.7	11.9	11.3	14.8	13.1	12.7	7.8	6.6	6.4	n/a	6.0	5.8
U.S. Bancorp	9.4	7.6	7.6	11.0	9.0	9.0	13.2	11.0	11.0	9.0	7.4	7.4	n/a	6.0	6.0
Wells Fargo & Company	11.1	8.8	8.6	12.8	10.4	10.2	16.1	13.4	13.4	8.9	7.2	7.2	n/a	6.2	6.1

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. In accordance with the regulatory capital framework, all risk-based capital ratios are calculated using standardized RWAs, which became effective on January 1, 2015.

* The supplementary leverage ratio is calculated only for firms subject to the advanced approaches.
n/a Not applicable.

Source: Federal Reserve estimates in the severely adverse scenario.

Table 4.B. Capital ratios, actual 2016:Q4 and projected 2017:Q1–2019:Q1 under the severely adverse scenario: Non-advanced approaches firms

Percent

Bank holding company	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio		
	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum
Ally Financial Inc.	9.4	6.5	6.5	10.9	8.1	8.1	12.6	10.1	10.1	9.5	7.0	7.0
BancWest Corporation	13.1	9.1	9.1	13.4	9.5	9.5	15.3	11.6	11.6	11.1	7.9	7.9
BB&T Corporation	10.2	7.9	7.9	12.0	9.5	9.5	14.1	11.7	11.7	10.0	7.9	7.9
BBVA Compass Bancshares, Inc.	11.5	7.7	7.7	11.9	8.0	8.0	14.3	10.5	10.5	9.5	6.3	6.3
BMO Financial Corp.	12.5	8.0	8.0	12.8	8.7	8.7	15.7	11.7	11.7	9.5	6.4	6.4
CIT Group Inc.	14.0	14.5	12.9	14.0	14.5	12.9	14.8	15.8	14.0	13.9	11.9	11.9
Citizens Financial Group, Inc.	11.2	7.7	7.7	11.4	7.8	7.8	14.0	10.4	10.4	9.9	6.8	6.8
Comerica Incorporated	11.1	9.4	9.4	11.1	9.4	9.4	13.3	11.0	11.0	10.2	8.5	8.5
Deutsche Bank Trust Corporation	64.4	60.2	60.2	64.4	60.2	60.2	64.7	61.2	61.2	14.6	13.5	13.5
Discover Financial Services	13.2	10.8	10.4	13.9	11.4	11.0	15.5	12.8	12.4	12.3	10.1	10.0
Fifth Third Bancorp	10.4	8.0	8.0	11.5	9.0	9.0	15.0	12.0	12.0	9.9	7.7	7.7
Huntington Bancshares Incorporated	9.6	7.0	7.0	10.9	8.3	8.3	13.1	10.1	10.1	8.7	6.6	6.6
KeyCorp	9.5	6.8	6.8	10.9	7.5	7.5	12.9	9.7	9.7	9.9	6.8	6.8
M&T Bank Corporation	10.7	7.9	7.9	11.9	9.0	9.0	14.1	11.0	11.0	10.0	7.5	7.5
MUFG Americas Holdings Corporation	14.8	12.5	12.5	14.8	12.5	12.5	16.4	14.1	14.1	9.9	8.2	8.2
Regions Financial Corporation	11.2	8.2	8.2	12.0	8.9	8.9	14.2	11.0	11.0	10.2	7.5	7.5
Santander Holdings USA, Inc.	14.5	12.4	12.4	16.1	13.6	13.6	18.0	15.3	15.3	12.5	10.5	10.5
SunTrust Banks, Inc.	9.6	7.1	7.1	10.3	7.7	7.7	12.3	9.8	9.8	9.2	7.0	7.0
Zions Bancorporation	12.1	8.5	8.5	13.5	9.9	9.9	15.2	11.5	11.5	11.1	8.1	8.1

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank 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 ratios are for the period 2017:Q1 to 2019:Q1.

Source: Federal Reserve estimates in the severely adverse scenario.

Table 4.C. Capital ratios, actual 2016:Q4 and projected 2017:Q1–2019:Q1 under the severely adverse scenario: 34 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			Supplementary leverage ratio*		
	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum
34 participating bank holding companies	12.5	9.4	9.2	13.9	10.8	10.6	16.5	13.3	13.3	9.2	7.0	7.0	n/a	5.5	5.4

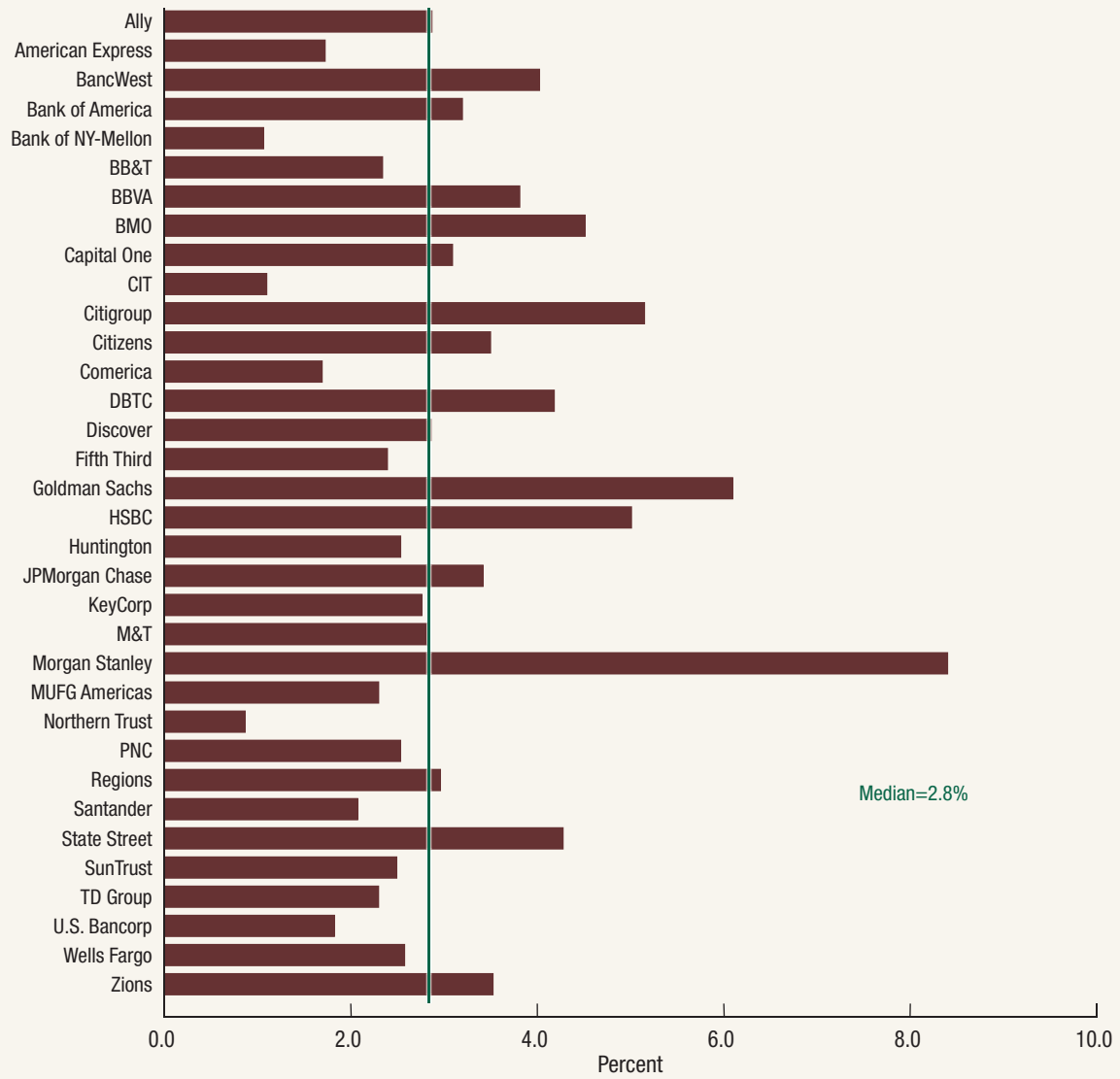
Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. In accordance with the regulatory capital framework, all risk-based capital ratios are calculated using standardized RWAs, which became effective on January 1, 2015.

* The supplementary leverage ratio is calculated only for firms subject to the advanced approaches.

n/a Not applicable.

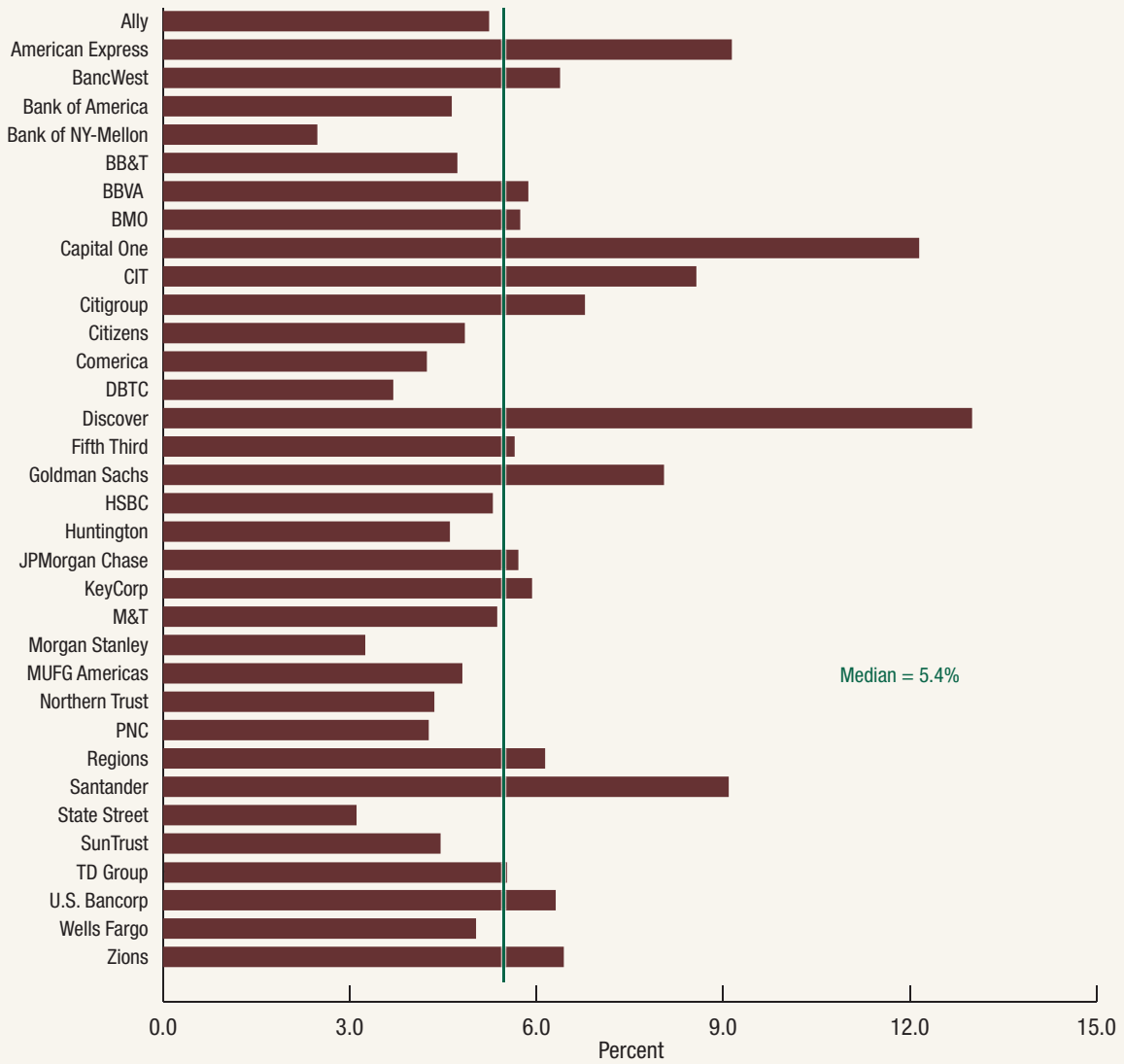
Source: Federal Reserve estimates in the severely adverse scenario.

Figure 10. Change from 2016:Q4 to minimum CET1 ratio in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of risk-weighted assets.

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



Note: Estimates are for nine quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Table 5. Projected losses, revenue, and net income before taxes through 2019:Q1 under the severely adverse scenario: 34 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 ¹	Other revenue ²	Provisions	Realized losses/gains on securities (AFS/HTM)	Trading and counterparty losses ³	Other losses/gains ⁴	Net income before taxes	Other comprehensive income ⁵	AOCI included in capital ⁶ (2019:Q1)
Ally Financial Inc.	5.1	0.0	7.7	0.5	0.0	0.0	-3.1	0.0	0.0
American Express Company	19.1	0.0	14.3	0.0	0.0	0.0	4.8	0.0	-2.8
BancWest Corporation	2.4	0.0	5.5	0.0	0.0	0.0	-3.1	0.0	0.0
Bank of America Corporation	40.2	0.8	48.2	0.9	15.7	2.7	-26.4	4.5	-1.9
The Bank of New York Mellon Corporation	10.2	0.0	2.0	0.0	0.4	0.0	7.7	0.4	-3.4
BB&T Corporation	7.9	0.0	8.0	0.0	0.0	0.0	-0.2	0.0	0.0
BBVA Compass Bancshares, Inc.	1.6	0.0	4.0	0.0	0.0	0.0	-2.4	0.0	0.0
BMO Financial Corp.	1.7	0.0	4.4	0.0	0.0	0.0	-2.6	0.0	0.0
Capital One Financial Corporation	29.6	0.0	35.4	0.0	0.0	0.1	-5.9	-0.3	-1.2
CIT Group Inc.	1.6	0.0	3.0	0.0	0.0	0.4	-1.9	0.0	-0.1
Citigroup Inc.	49.0	0.1	47.6	1.1	8.3	2.1	-9.9	0.8	-31.1
Citizens Financial Group, Inc.	3.2	0.0	6.2	0.1	0.0	0.0	-3.1	0.0	0.0
Comerica Incorporated	1.6	0.0	2.0	0.0	0.0	0.0	-0.4	0.0	0.0
Deutsche Bank Trust Corporation	0.7	0.0	0.6	0.0	0.0	0.0	0.2	0.0	0.0
Discover Financial Services	13.1	0.0	12.6	0.0	0.0	0.0	0.6	0.0	0.0
Fifth Third Bancorp	4.3	0.0	5.6	0.0	0.0	0.1	-1.4	0.0	0.0
The Goldman Sachs Group, Inc.	6.0	0.0	6.8	0.0	18.4	3.7	-22.8	0.0	-1.2
HSBC North America Holdings Inc.	-1.4	0.8	4.0	0.0	0.0	0.6	-5.2	1.8	0.7
Huntington Bancshares Incorporated	2.8	0.0	3.5	0.1	0.0	0.0	-0.8	0.0	0.0
JPMorgan Chase & Co.	66.5	0.0	58.8	0.1	25.2	0.6	-18.3	-1.1	-2.2
KeyCorp	3.4	0.0	6.1	0.0	0.0	0.1	-2.8	0.0	0.0
M&T Bank Corporation	4.7	0.0	5.5	0.0	0.0	0.1	-0.9	0.0	0.0
Morgan Stanley	4.9	0.0	4.5	0.0	9.5	4.7	-13.8	0.7	-1.9
MUFG Americas Holdings Corporation	2.8	0.0	4.4	0.0	0.0	0.3	-1.9	0.0	0.0
Northern Trust Corporation	3.1	0.0	1.9	0.0	0.0	0.0	1.2	0.2	-0.2
The PNC Financial Services Group, Inc.	12.2	0.0	9.9	0.1	0.0	0.3	1.9	-0.5	-1.0
Regions Financial Corporation	3.8	0.0	5.6	0.0	0.0	0.0	-1.8	0.0	0.0
Santander Holdings USA, Inc.	7.0	0.0	7.0	0.0	0.0	0.2	-0.2	0.0	0.0
State Street Corporation	4.2	0.0	0.8	0.4	0.9	0.0	2.1	-1.0	-3.0
SunTrust Banks, Inc.	5.7	0.0	7.4	0.0	0.0	1.1	-2.8	0.0	0.0
TD Group US Holdings LLC	6.7	0.0	9.5	0.0	0.0	0.0	-2.8	-0.8	-0.8
U.S. Bancorp	20.8	0.0	19.4	0.1	0.0	0.0	1.3	1.1	-0.5
Wells Fargo & Company	71.2	0.0	55.9	1.6	7.7	1.1	4.8	-3.5	-6.8
Zions Bancorporation	1.7	0.0	3.0	0.0	0.0	0.0	-1.4	0.0	0.0
34 participating bank holding companies	417.6	1.6	420.9	5.2	86.0	18.3	-111.3	2.1	-57.4

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.

¹ Pre-provision net revenue includes losses from operational-risk events and other real estate owned costs.

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

³ 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.

⁴ Other losses/gains includes projected change in fair value of loans held for sale and loans held for investment measured under the fair-value option, and goodwill impairment losses.

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

⁶ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. Those transitions are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Source: Federal Reserve estimates in the severely adverse scenario.

Table 6. Projected loan losses by type of loan for 2017:Q1-2019:Q1 under the severely adverse scenario: 34 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 ¹	Credit cards	Other consumer ²	Other loans ³
Ally Financial Inc.	6.5	0.2	0.1	2.0	0.1	0.0	4.1	0.0
American Express Company	10.9	0.0	0.0	4.2	0.0	6.7	0.0	0.0
BancWest Corporation	4.7	0.2	0.1	1.5	1.4	0.1	1.0	0.4
Bank of America Corporation	45.0	4.1	3.5	12.1	5.9	11.7	1.9	5.7
The Bank of New York Mellon Corporation	1.7	0.2	0.0	0.1	0.3	0.0	0.3	0.8
BB&T Corporation	7.1	0.8	0.3	1.5	2.3	0.3	1.3	0.6
BBVA Compass Bancshares, Inc.	3.7	0.4	0.1	1.4	1.1	0.1	0.3	0.2
BMO Financial Corp.	4.0	0.2	0.4	1.7	0.7	0.1	0.1	0.7
Capital One Financial Corporation	31.7	0.2	0.1	3.1	1.6	21.7	4.1	0.8
CIT Group Inc.	2.6	0.1	0.0	1.4	0.7	0.0	0.0	0.4
Citigroup Inc.	44.5	2.1	1.4	8.1	1.3	21.4	3.5	6.8
Citizens Financial Group, Inc.	5.4	0.2	0.7	1.8	1.1	0.2	1.1	0.3
Comerica Incorporated	2.2	0.0	0.1	1.0	0.7	0.0	0.1	0.3
Deutsche Bank Trust Corporation	0.5	0.1	0.0	0.1	0.2	0.0	0.0	0.1
Discover Financial Services	10.5	0.0	0.0	0.0	0.0	8.7	1.8	0.0
Fifth Third Bancorp	5.4	0.5	0.4	2.0	1.4	0.4	0.4	0.4
The Goldman Sachs Group, Inc.	6.2	1.3	0.0	2.1	0.3	0.0	0.1	2.3
HSBC North America Holdings Inc.	3.9	0.3	0.1	2.4	0.7	0.1	0.0	0.4
Huntington Bancshares Incorporated	3.2	0.3	0.3	1.0	0.8	0.1	0.6	0.2
JPMorgan Chase & Co.	54.0	4.1	2.3	15.9	4.3	15.7	3.2	8.6
KeyCorp	5.4	0.3	0.4	2.0	1.8	0.1	0.5	0.4
M&T Bank Corporation	5.0	1.0	0.3	0.8	2.4	0.1	0.4	0.2
Morgan Stanley	3.6	0.4	0.0	1.2	0.5	0.0	0.1	1.4
MUFG Americas Holdings Corporation	3.9	0.6	0.1	1.4	1.3	0.0	0.1	0.3
Northern Trust Corporation	1.5	0.1	0.1	0.3	0.3	0.0	0.0	0.6
The PNC Financial Services Group, Inc.	9.3	0.4	0.4	4.3	2.3	0.6	0.7	0.6
Regions Financial Corporation	5.1	0.5	0.4	1.7	1.5	0.2	0.4	0.4
Santander Holdings USA, Inc.	8.1	0.2	0.2	0.8	1.0	0.1	4.9	0.8
State Street Corporation	0.6	0.0	0.0	0.2	0.0	0.0	0.0	0.4
SunTrust Banks, Inc.	6.7	0.8	0.5	2.2	1.3	0.2	1.3	0.3
TD Group US Holdings LLC	8.8	0.7	0.5	2.1	1.8	2.3	0.6	0.8
U.S. Bancorp	17.9	1.0	0.8	5.9	4.0	3.4	1.4	1.3
Wells Fargo & Company	50.4	4.9	2.8	12.4	11.4	5.9	6.8	6.4
Zions Bancorporation	2.9	0.0	0.1	1.0	1.4	0.0	0.0	0.2
34 participating bank holding companies	383.1	26.5	16.6	99.8	56.1	100.0	41.1	43.1

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

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

Source: Federal Reserve estimates in the severely adverse scenario.

Table 7. Projected loan losses by type of loan for 2017:Q1–2019:Q1 under the severely adverse scenario: 34 participating bank holding companiesPercent of average balances¹

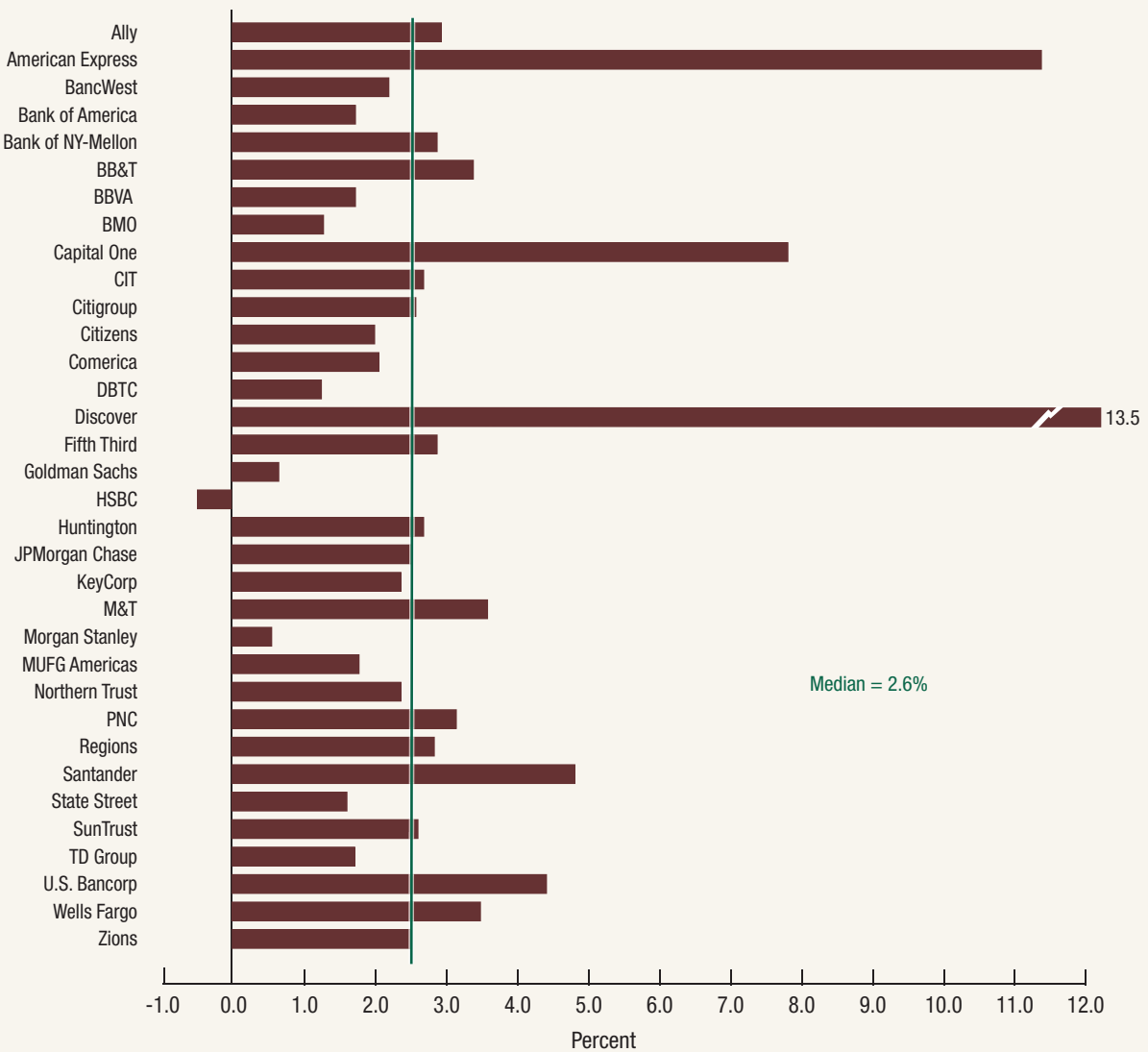
Bank holding company	Loan losses	First-lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial	Commercial real estate, domestic ²	Credit cards	Other consumer ³	Other loans ⁴
Ally Financial Inc.	5.2	2.4	6.3	4.3	2.2	0.0	6.6	7.5
American Express Company	9.1	0.0	0.0	10.2	0.0	8.6	0.0	0.0
BancWest Corporation	6.4	2.3	3.9	8.8	7.6	13.0	5.6	6.6
Bank of America Corporation	4.6	2.1	5.1	4.7	8.0	12.2	2.2	3.0
The Bank of New York Mellon Corporation	2.5	2.2	5.0	3.4	7.9	0.0	9.3	1.6
BB&T Corporation	4.7	2.5	3.2	5.2	6.0	13.2	6.3	3.4
BBVA Compass Bancshares, Inc.	5.9	2.9	4.8	7.1	8.2	16.9	7.0	2.5
BMO Financial Corp.	5.7	3.2	10.4	5.9	7.9	11.7	2.4	4.9
Capital One Financial Corporation	12.2	1.1	7.0	10.2	5.3	20.3	8.1	4.3
CIT Group Inc.	8.6	1.3	2.6	10.3	10.9	0.0	12.9	11.1
Citigroup Inc.	6.8	2.6	6.9	5.1	7.8	13.7	12.1	3.5
Citizens Financial Group, Inc.	4.8	1.2	4.5	5.5	7.9	11.9	4.9	3.3
Comerica Incorporated	4.2	2.2	3.1	3.5	6.0	0.0	8.4	4.8
Deutsche Bank Trust Corporation	3.7	2.2	4.7	4.9	7.4	0.0	3.7	1.8
Discover Financial Services	13.0	2.7	9.4	13.8	15.5	13.5	11.0	5.1
Fifth Third Bancorp	5.6	3.2	4.9	5.5	11.8	16.6	3.7	3.4
The Goldman Sachs Group, Inc.	8.1	52.3	4.5	11.1	8.9	0.0	5.5	4.7
HSBC North America Holdings Inc.	5.3	1.5	3.7	7.6	5.9	13.5	7.0	3.9
Huntington Bancshares Incorporated	4.6	2.8	3.4	4.8	7.0	13.5	4.2	3.9
JPMorgan Chase & Co.	5.7	1.8	4.4	9.7	3.8	11.5	4.3	4.7
KeyCorp	5.9	3.3	3.9	6.0	9.8	12.8	6.9	2.8
M&T Bank Corporation	5.4	4.2	4.3	4.2	7.1	13.5	6.0	3.6
Morgan Stanley	3.2	1.6	4.5	10.4	5.0	0.0	0.6	3.0
MUFG Americas Holdings Corporation	4.8	1.9	3.4	7.2	7.5	13.5	12.9	3.5
Northern Trust Corporation	4.4	1.7	7.2	4.2	7.3	0.0	13.8	4.2
The PNC Financial Services Group, Inc.	4.3	1.7	2.0	5.8	6.1	12.6	3.2	1.8
Regions Financial Corporation	6.1	3.2	4.9	7.2	10.4	15.2	7.1	2.7
Santander Holdings USA, Inc.	9.1	2.7	3.7	4.0	5.7	13.2	17.5	10.0
State Street Corporation	3.1	0.0	0.0	6.2	6.6	0.0	0.6	2.5
SunTrust Banks, Inc.	4.5	2.9	4.4	4.7	6.9	14.1	4.9	2.1
TD Group US Holdings LLC	5.5	2.7	5.1	5.8	6.7	18.9	2.5	3.2
U.S. Bancorp	6.3	1.7	4.6	7.9	9.7	15.2	3.6	4.9
Wells Fargo & Company	5.0	1.8	4.3	6.4	7.7	15.3	6.9	3.4
Zions Bancorporation	6.4	0.6	2.6	8.6	7.3	13.5	9.5	7.5
34 participating bank holding companies	5.8	2.2	4.5	6.4	7.0	13.7	5.9	3.6

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

¹ 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.² Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.³ Other consumer loans include student loans and automobile loans.⁴ Other loans include international real estate loans.

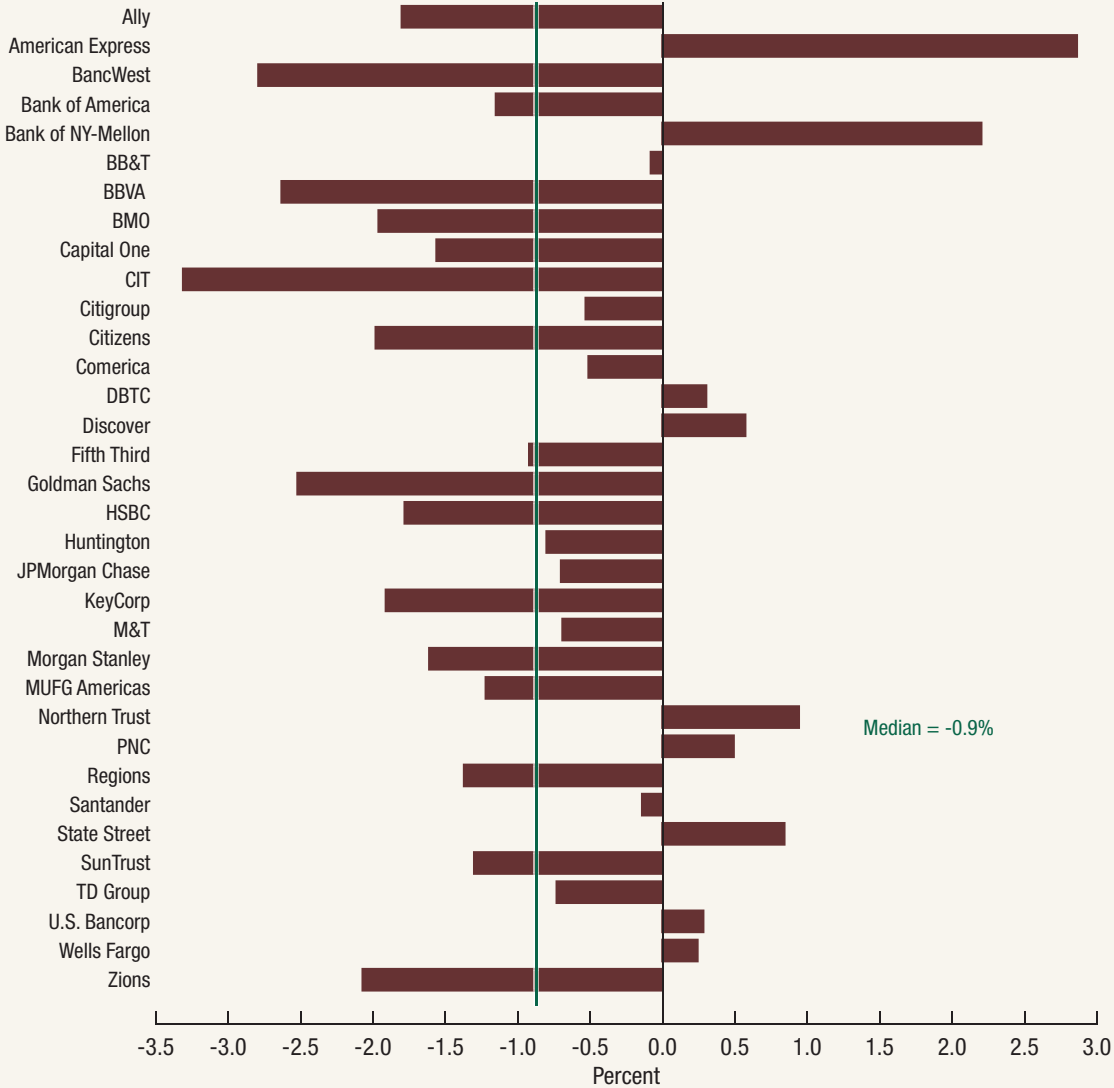
Source: Federal Reserve estimates in the severely adverse scenario.

Figure 12. PPNR rates in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2017:Q1–2019: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 2017:Q1–2019: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 34 BHCs. The aggregate CET1 ratio is projected to fall 1.8 percentage points to its minimum over the planning horizon and to be 1.3 percentage points lower at the end of the planning horizon (see [table 8](#)). In addition, at the end of the planning horizon, the tier 1 risk-based capital ratio and the total risk-based capital ratio are 1.3 and 1.7 percentage points lower than at the start of the planning horizon, respectively. The tier 1 leverage ratio is projected to decline 1.0 percentage points over the planning horizon.

Generally, the projected declines in post-stress capital ratios are smaller than those under the severely adverse scenario, reflecting the less severe economic 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 RWA 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 34 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 \$322 billion for the 34 BHCs over the nine-quarter planning horizon.

These losses include

- \$257 billion in accrual loan losses,
- \$3 billion in OTTI and other realized securities losses,
- \$46 billion in losses from the global market shock and the largest counterparty default components, and
- \$15 billion in additional losses from items such as loans booked under the fair-value option.

These results are presented in aggregate ([table 8](#)) and individually for each of the 34 BHCs ([table 11](#) 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.

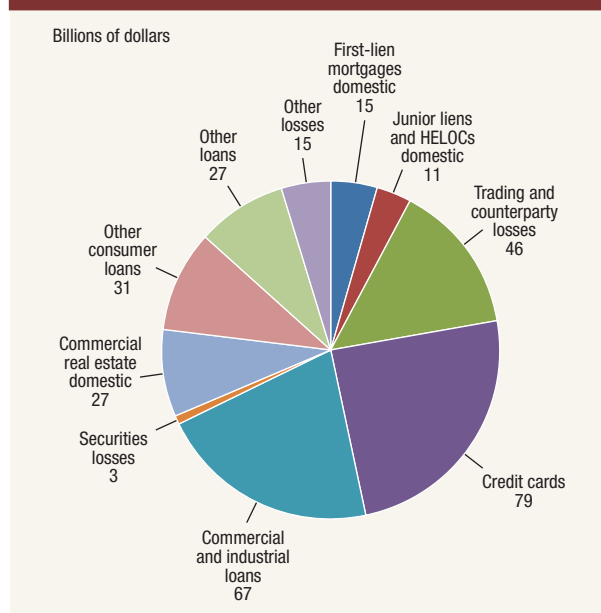
Loan Losses

As in the severely adverse scenario, the accrual loan portfolio is the largest source of losses in the adverse scenario, accounting for \$257 billion of projected losses for the 34 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 34 BHCs is 3.9 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

Figure 14. Projected losses in the adverse scenario



exposures for the eight BHCs with large trading, processing, or custodial operations equal \$46 billion under the adverse scenario. These losses are slightly more 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 PPNR and Net Income

Aggregate PPNR is projected to equal \$541 billion for the 34 BHCs under the adverse scenario, equal to 3.3 percent of average projected assets for these firms. Projected PPNR is higher than under the severely adverse scenario due to a steeper yield curve and less severe economic and financial market conditions, resulting in a smaller reduction in noninterest income and operational risk losses. However, projected operational risk 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 34 BHCs (see [figure 17](#)).

In the aggregate, the 34 BHCs are projected to have cumulative pre-tax net income of \$214 billion over the nine-quarter planning horizon under the adverse scenario. Twenty-seven of the BHCs are projected to

have positive cumulative pre-tax net income, though 20 firms experience at least one quarter of negative pre-tax 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 \$264 billion in total provisions reported in [table 8](#) includes \$257 billion in net charge-offs, with the remainder being the reserve build, or the increase in loan loss reserves.

Aggregate pre-tax net income under the adverse scenario is positive, with a ratio of income to average assets of 1.3 percent. Projected nine-quarter return on assets under the adverse scenario ranges between -0.8 and 5.8 percent for the 34 BHCs (see [figure 18](#)).

The interest rate path and credit spreads assumed in the scenario result in -\$21 billion of OCI 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, -\$80 billion in AOCI is included in post-stress regulatory capital as of the first quarter of 2019.

Table 8. 34 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.5	11.2	10.7
Tier 1 capital ratio	13.9	12.6	12.2
Total capital ratio	16.5	14.8	14.6
Tier 1 leverage ratio	9.2	8.2	8.0
Supplementary leverage ratio	n/a	6.3	6.1

Note: In accordance with the regulatory capital framework, all risk-based capital ratios are calculated using standardized RWAs, which became effective on January 1, 2015.

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (%) ¹
Loan losses	257.4	3.9
First-lien mortgages, domestic	14.7	1.2
Junior liens and HELOCs, domestic	10.5	2.9
Commercial and industrial ²	67.4	4.3
Commercial real estate, domestic	27.2	3.3
Credit cards	79.2	10.7
Other consumer ³	31.0	4.4
Other loans ⁴	27.5	2.3

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	9,745.3	10,857.8

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	540.9	3.3
Other revenue ³	1.6	
<i>less</i>		
Provisions	263.8	
Realized losses/gains on securities (AFS/HTM)	3.0	
Trading and counterparty losses ⁴	46.4	
Other losses/gains ⁵	14.9	
<i>equals</i>		
Net income before taxes	214.3	1.3
Memo items		
Other comprehensive income ⁶	-20.8	
<i>Other effects on capital</i>	Actual 2016:Q4	2019:Q1
AOCI included in capital (billions of dollars) ⁷	-50.6	-80.4

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ Other losses/gains include 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

**Table 9. Projected minimum common equity tier 1 ratio under the adverse scenario, 2017:Q1–2019:Q1
34 participating bank holding companies**

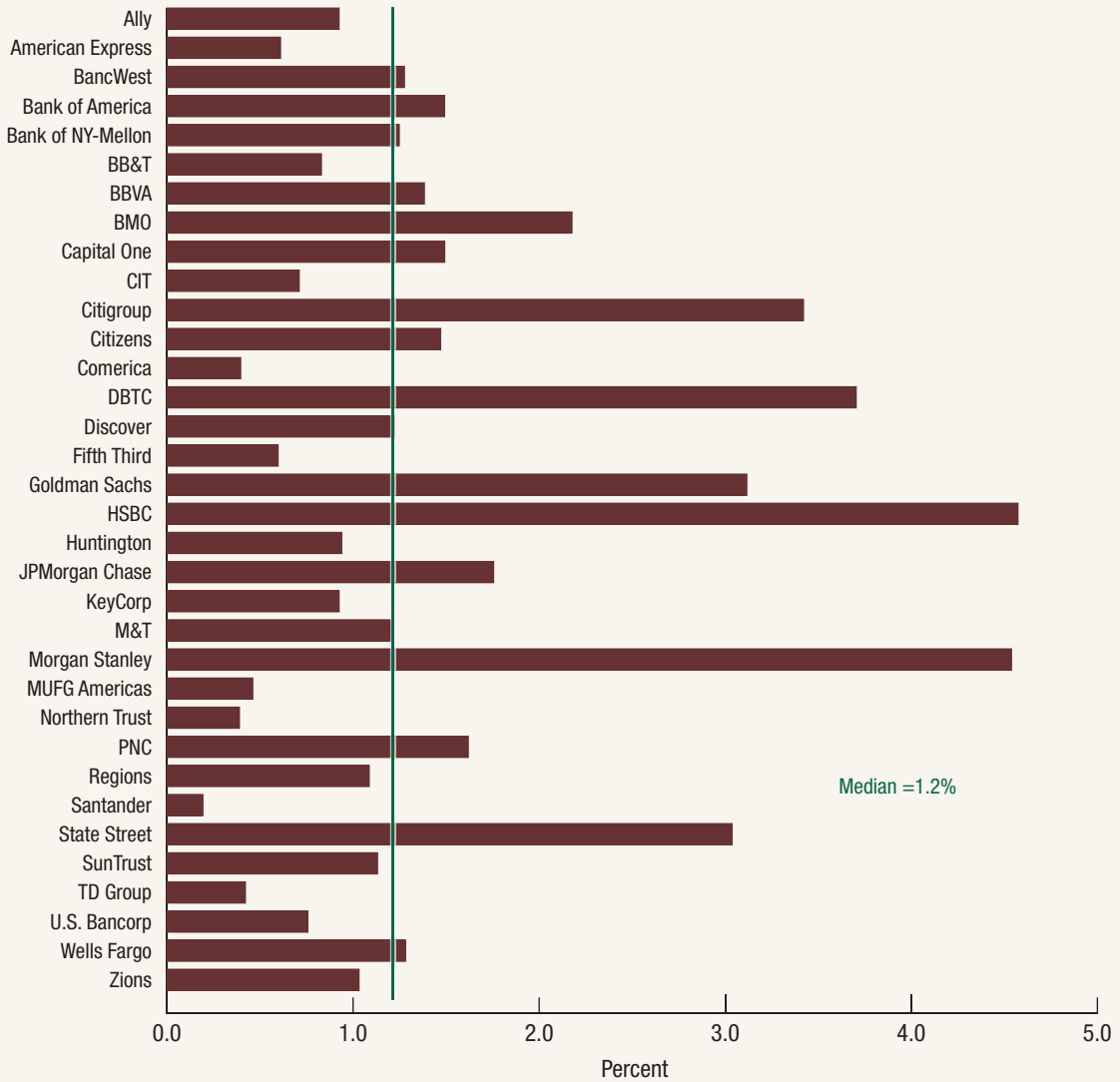
Percent

Bank holding company	Stressed ratios with DFA stress testing capital action assumptions
Ally Financial Inc.	8.4
American Express Company	11.7
BancWest Corporation	11.8
Bank of America Corporation	10.6
The Bank of New York Mellon Corporation	11.0
BB&T Corporation	9.4
BBVA Compass Bancshares, Inc.	10.1
BMO Financial Corp.	10.4
Capital One Financial Corporation	8.6
CIT Group Inc.	13.3
Citigroup Inc.	11.4
Citizens Financial Group, Inc.	9.7
Comerica Incorporated	10.7
Deutsche Bank Trust Corporation	60.7
Discover Financial Services	12.0
Fifth Third Bancorp	9.8
The Goldman Sachs Group, Inc.	11.4
HSBC North America Holdings Inc.	13.4
Huntington Bancshares Incorporated	8.6
JPMorgan Chase & Co.	10.7
KeyCorp	8.6
M&T Bank Corporation	9.5
Morgan Stanley	13.2
MUFG Americas Holdings Corporation	14.3
Northern Trust Corporation	11.4
The PNC Financial Services Group, Inc.	9.0
Regions Financial Corporation	10.1
Santander Holdings USA, Inc.	14.3
State Street Corporation	8.6
SunTrust Banks, Inc.	8.5
TD Group US Holdings LLC	13.2
U.S. Bancorp	8.7
Wells Fargo & Company	9.9
Zions Bancorporation	11.0

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank 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 2017:Q1 to 2019:Q1. In accordance with the regulatory capital framework, all risk-based capital ratios are calculated using standardized RWAs, which became effective on January 1, 2015.

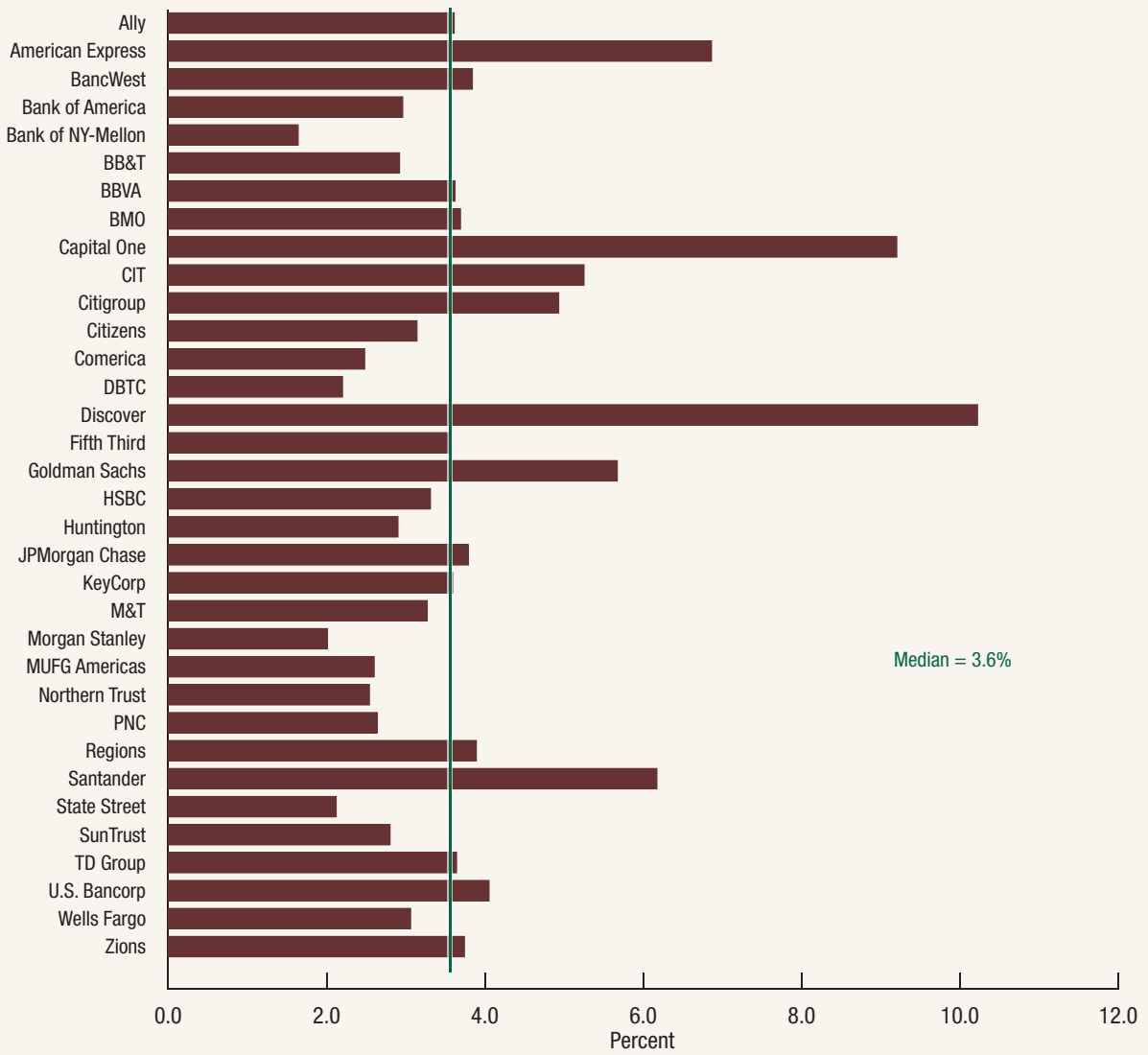
Source: Federal Reserve estimates in the adverse scenario.

Figure 15. Change from 2016:Q4 to minimum CET1 ratio in the adverse scenario



Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of risk-weighted assets.

Figure 16. Total loan loss rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Table 10.A. Capital ratios, actual 2016:Q4 and projected 2017:Q1–2019:Q1 under the adverse scenario: Advanced approaches firms

Percent

Bank holding company	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio			Supplementary leverage ratio*		
	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum
American Express Company	12.3	12.9	11.7	13.5	14.0	12.9	15.2	15.6	14.6	11.6	11.9	11.0	n/a	10.2	9.8
Bank of America Corporation	12.1	11.1	10.6	13.6	12.7	12.2	16.3	14.8	14.7	8.9	8.2	8.0	n/a	6.5	6.3
The Bank of New York Mellon Corporation	12.3	13.3	11.0	14.5	15.4	13.3	15.2	16.0	13.8	6.6	6.8	6.0	n/a	6.2	5.6
Capital One Financial Corporation	10.1	9.2	8.6	11.6	10.5	10.0	14.3	13.6	12.4	9.9	8.9	8.7	n/a	7.7	7.5
Citigroup Inc.	14.9	12.6	11.4	15.8	14.1	13.0	19.1	16.9	16.1	10.1	9.0	8.3	n/a	6.7	6.3
The Goldman Sachs Group, Inc.	14.5	11.5	11.4	16.6	13.4	13.3	19.8	16.2	16.1	9.4	7.4	7.4	n/a	5.1	5.1
HSBC North America Holdings Inc.	17.9	13.4	13.4	20.1	16.0	16.0	25.3	19.2	19.2	9.6	7.2	7.2	n/a	5.5	5.5
JPMorgan Chase & Co.	12.5	11.1	10.7	14.2	12.6	12.3	16.4	14.6	14.3	8.4	7.3	7.2	n/a	5.7	5.6
Morgan Stanley	17.8	13.9	13.2	20.0	16.1	15.6	23.2	18.8	18.5	8.4	6.6	6.4	n/a	5.0	4.9
Northern Trust Corporation	11.8	11.8	11.4	12.9	12.9	12.5	14.5	14.2	14.1	8.0	7.7	7.6	n/a	6.6	6.5
The PNC Financial Services Group, Inc.	10.6	9.5	9.0	12.0	10.6	10.2	14.3	12.2	12.1	10.1	8.9	8.7	n/a	7.5	7.3
State Street Corporation	11.6	9.9	8.6	14.7	12.8	11.6	16.0	13.7	12.7	6.5	5.5	5.1	n/a	5.0	4.6
TD Group US Holdings LLC	13.6	13.9	13.2	13.7	13.9	13.2	14.8	14.8	14.3	7.8	7.6	7.4	n/a	7.0	6.8
U.S. Bancorp	9.4	9.0	8.7	11.0	10.4	10.1	13.2	12.1	12.0	9.0	8.4	8.3	n/a	6.8	6.7
Wells Fargo & Company	11.1	10.5	9.9	12.8	12.0	11.4	16.1	14.7	14.5	8.9	8.3	8.0	n/a	7.1	6.8

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. In accordance with the regulatory capital framework, all risk-based capital ratios are calculated using standardized RWAs, which became effective on January 1, 2015.

* The supplementary leverage ratio is calculated only for firms subject to the advanced approaches.
n/a Not applicable.

Source: Federal Reserve estimates in the adverse scenario.

Table 10.B. Capital ratios, actual 2016:Q4 and projected 2017:Q1–2019:Q1 under the adverse scenario: Non-advanced approaches firms

Percent

Bank holding company	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio		
	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum
Ally Financial Inc.	9.4	8.6	8.4	10.9	10.2	10.1	12.6	12.1	12.0	9.5	8.8	8.8
BancWest Corporation	13.1	11.8	11.8	13.4	12.3	12.3	15.3	14.3	14.3	11.1	10.1	10.1
BB&T Corporation	10.2	9.5	9.4	12.0	11.0	11.0	14.1	12.8	12.8	10.0	9.1	9.1
BBVA Compass Bancshares, Inc.	11.5	10.1	10.1	11.9	10.4	10.4	14.3	12.7	12.7	9.5	8.1	8.1
BMO Financial Corp.	12.5	10.4	10.4	12.8	11.0	11.0	15.7	13.6	13.6	9.5	8.0	8.0
CIT Group Inc.	14.0	16.9	13.3	14.0	16.9	13.3	14.8	18.1	14.2	13.9	13.9	13.2
Citizens Financial Group, Inc.	11.2	9.7	9.7	11.4	9.9	9.9	14.0	12.3	12.3	9.9	8.4	8.4
Comerica Incorporated	11.1	10.7	10.7	11.1	10.7	10.7	13.3	12.1	12.1	10.2	9.5	9.5
Deutsche Bank Trust Corporation	64.4	60.7	60.7	64.4	60.7	60.7	64.7	61.3	61.3	14.6	13.4	13.4
Discover Financial Services	13.2	13.0	12.0	13.9	13.6	12.7	15.5	15.0	14.2	12.3	11.8	11.4
Fifth Third Bancorp	10.4	9.9	9.8	11.5	10.8	10.8	15.0	13.4	13.4	9.9	9.2	9.2
Huntington Bancshares Incorporated	9.6	8.6	8.6	10.9	9.9	9.9	13.1	11.4	11.4	8.7	7.7	7.7
KeyCorp	9.5	8.6	8.6	10.9	9.3	9.3	12.9	11.1	11.1	9.9	8.4	8.4
M&T Bank Corporation	10.7	9.6	9.5	11.9	10.7	10.6	14.1	12.3	12.3	10.0	8.8	8.8
MUFG Americas Holdings Corporation	14.8	14.4	14.3	14.8	14.4	14.3	16.4	15.5	15.5	9.9	9.4	9.4
Regions Financial Corporation	11.2	10.1	10.1	12.0	10.8	10.8	14.2	12.6	12.6	10.2	9.0	9.0
Santander Holdings USA, Inc.	14.5	15.9	14.3	16.1	17.3	15.9	18.0	19.0	17.8	12.5	13.4	12.2
SunTrust Banks, Inc.	9.6	8.6	8.5	10.3	9.2	9.1	12.3	10.9	10.9	9.2	8.2	8.2
Zions Bancorporation	12.1	11.0	11.0	13.5	12.3	12.3	15.2	13.7	13.7	11.1	9.9	9.9

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank 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 ratios are for the period 2017:Q1 to 2019:Q1.

Source: Federal Reserve estimates in the adverse scenario.

Table 10.C. Capital ratios, actual 2016:Q4 and projected 2017:Q1–2019:Q1 under the adverse scenario: 34 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			Supplementary leverage ratio*		
	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum	Actual 2016:Q4	Ending	Minimum
34 participating bank holding companies	12.5	11.2	10.7	13.9	12.6	12.2	16.5	14.8	14.6	9.2	8.2	8.0	n/a	6.3	6.1

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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. In accordance with the regulatory capital framework, all risk-based capital ratios are calculated using standardized RWAs, which became effective on January 1, 2015.

* The supplementary leverage ratio is calculated only for firms subject to the advanced approaches.

n/a Not applicable.

Source: Federal Reserve estimates in the adverse scenario.

Table 11. Projected losses, revenue, and net income before taxes through 2019:Q1 under the adverse scenario: 34 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 ¹	Other revenue ²	Provisions	Realized losses/gains on securities (AFS/HTM)	Trading and counterparty losses ³	Other losses/gains ⁴	Net income before taxes	Other comprehensive income ⁵	AOCI included in capital ⁶ (2019:Q1)
Ally Financial Inc.	6.3	0.0	5.3	0.3	0.0	0.0	0.6	0.0	0.0
American Express Company	20.5	0.0	10.6	0.0	0.0	0.0	9.9	0.0	-2.8
BancWest Corporation	3.1	0.0	3.2	0.0	0.0	0.0	-0.1	0.0	0.0
Bank of America Corporation	61.5	0.8	28.1	0.6	9.7	2.3	21.6	-1.9	-8.3
The Bank of New York Mellon Corporation	13.0	0.0	1.3	0.0	0.2	0.0	11.5	-0.7	-4.4
BB&T Corporation	10.0	0.0	4.7	0.0	0.0	0.0	5.2	0.0	0.0
BBVA Compass Bancshares, Inc.	2.3	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0
BMO Financial Corp.	2.7	0.0	2.7	0.0	0.0	0.0	-0.1	0.0	0.0
Capital One Financial Corporation	32.6	0.0	26.3	0.0	0.0	0.1	6.1	-0.8	-1.7
CIT Group Inc.	1.9	0.0	1.8	0.0	0.0	0.4	-0.4	0.0	-0.1
Citigroup Inc.	63.3	0.1	32.5	0.6	5.6	1.9	22.8	-2.8	-34.6
Citizens Financial Group, Inc.	4.3	0.0	3.9	0.1	0.0	0.0	0.3	0.0	0.0
Comerica Incorporated	2.2	0.0	0.9	0.0	0.0	0.0	1.3	0.0	0.0
Deutsche Bank Trust Corporation	0.9	0.0	0.3	0.0	0.0	0.0	0.5	0.0	0.0
Discover Financial Services	13.9	0.0	10.0	0.0	0.0	0.0	3.9	0.0	0.0
Fifth Third Bancorp	5.8	0.0	3.2	0.0	0.0	0.1	2.5	0.0	0.0
The Goldman Sachs Group, Inc.	10.1	0.0	4.7	0.0	9.7	2.7	-7.1	0.0	-1.2
HSBC North America Holdings Inc.	0.6	0.8	2.1	0.0	0.0	0.4	-1.2	0.0	-1.1
Huntington Bancshares Incorporated	3.6	0.0	2.1	0.1	0.0	0.0	1.3	0.0	0.0
JPMorgan Chase & Co.	85.9	0.0	36.3	0.1	12.4	0.6	36.5	-4.2	-5.3
KeyCorp	4.7	0.0	3.6	0.0	0.0	0.1	0.9	0.0	0.0
M&T Bank Corporation	5.6	0.0	3.2	0.0	0.0	0.1	2.3	0.0	0.0
Morgan Stanley	9.4	0.0	2.7	0.0	4.8	3.7	-1.9	-0.2	-2.8
MUFG Americas Holdings Corporation	3.8	0.0	2.1	0.0	0.0	0.3	1.3	0.0	0.0
Northern Trust Corporation	3.9	0.0	1.1	0.0	0.0	0.0	2.8	0.0	-0.4
The PNC Financial Services Group, Inc.	15.7	0.0	5.6	0.1	0.0	0.3	9.7	-1.3	-1.8
Regions Financial Corporation	4.8	0.0	3.3	0.0	0.0	0.0	1.4	0.0	0.0
Santander Holdings USA, Inc.	8.0	0.0	3.8	0.0	0.0	0.1	4.1	0.0	0.0
State Street Corporation	6.1	0.0	0.5	0.2	0.5	0.0	4.8	-1.2	-3.3
SunTrust Banks, Inc.	7.8	0.0	4.3	0.0	0.0	0.8	2.7	0.0	0.0
TD Group US Holdings LLC	9.0	0.0	5.9	0.0	0.0	0.0	3.1	-0.7	-0.7
U.S. Bancorp	25.1	0.0	11.8	0.0	0.0	0.0	13.3	-0.2	-1.8
Wells Fargo & Company	90.4	0.0	31.7	0.7	3.4	0.9	53.8	-6.9	-10.1
Zions Bancorporation	2.2	0.0	1.6	0.0	0.0	0.0	0.5	0.0	0.0
34 participating bank holding companies	540.9	1.6	263.8	3.0	46.4	14.9	214.3	-20.8	-80.4

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.

¹ Pre-provision net revenue includes losses from operational-risk events and other real estate owned costs.

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

³ 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.

⁴ Other losses/gains includes projected change in fair value of loans held for sale and loans held for investment measured under the fair-value option, and goodwill impairment losses.

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

⁶ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. Those transitions are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Source: Federal Reserve estimates in the adverse scenario.

**Table 12. Projected loan losses by type of loan for 2017:Q1-2019:Q1 under the adverse scenario:
34 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 ¹	Credit cards	Other consumer ²	Other loans ³
Ally Financial Inc.	4.5	0.1	0.1	1.4	0.0	0.0	2.9	0.0
American Express Company	8.3	0.0	0.0	3.1	0.0	5.2	0.0	0.0
BancWest Corporation	2.9	0.1	0.1	1.0	0.7	0.0	0.6	0.3
Bank of America Corporation	29.1	2.1	2.2	7.9	2.8	9.2	1.3	3.6
The Bank of New York Mellon Corporation	1.1	0.1	0.0	0.1	0.1	0.0	0.2	0.5
BB&T Corporation	4.4	0.5	0.2	1.0	1.2	0.2	0.9	0.4
BBVA Compass Bancshares, Inc.	2.3	0.2	0.1	0.9	0.6	0.1	0.3	0.1
BMO Financial Corp.	2.6	0.2	0.3	1.1	0.4	0.0	0.1	0.5
Capital One Financial Corporation	24.3	0.2	0.1	2.2	0.8	17.6	2.9	0.5
CIT Group Inc.	1.6	0.0	0.0	1.0	0.3	0.0	0.0	0.3
Citigroup Inc.	32.7	1.1	0.8	5.9	0.6	17.0	2.9	4.4
Citizens Financial Group, Inc.	3.6	0.1	0.5	1.2	0.6	0.1	0.9	0.2
Comerica Incorporated	1.3	0.0	0.0	0.6	0.3	0.0	0.0	0.2
Deutsche Bank Trust Corporation	0.3	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Discover Financial Services	8.3	0.0	0.0	0.0	0.0	6.8	1.5	0.0
Fifth Third Bancorp	3.4	0.4	0.3	1.3	0.7	0.3	0.3	0.2
The Goldman Sachs Group, Inc.	4.4	1.3	0.0	1.3	0.2	0.0	0.1	1.6
HSBC North America Holdings Inc.	2.5	0.1	0.0	1.7	0.3	0.1	0.0	0.3
Huntington Bancshares Incorporated	2.0	0.2	0.2	0.6	0.5	0.1	0.4	0.1
JPMorgan Chase & Co.	36.3	2.0	1.4	10.8	2.1	12.2	2.4	5.4
KeyCorp	3.3	0.2	0.3	1.2	0.9	0.1	0.4	0.3
M&T Bank Corporation	3.1	0.7	0.2	0.6	1.2	0.0	0.3	0.1
Morgan Stanley	2.3	0.2	0.0	0.8	0.2	0.0	0.1	0.9
MUFG Americas Holdings Corporation	2.1	0.3	0.0	0.9	0.6	0.0	0.1	0.2
Northern Trust Corporation	0.9	0.1	0.1	0.2	0.2	0.0	0.0	0.4
The PNC Financial Services Group, Inc.	5.8	0.2	0.2	2.9	1.1	0.5	0.6	0.4
Regions Financial Corporation	3.3	0.3	0.3	1.1	0.8	0.1	0.4	0.2
Santander Holdings USA, Inc.	5.6	0.1	0.2	0.5	0.5	0.1	3.6	0.6
State Street Corporation	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.3
SunTrust Banks, Inc.	4.2	0.5	0.4	1.4	0.6	0.2	1.0	0.2
TD Group US Holdings LLC	5.9	0.5	0.4	1.3	0.9	1.8	0.4	0.5
U.S. Bancorp	11.6	0.5	0.5	4.0	1.9	2.7	1.0	0.8
Wells Fargo & Company	31.1	2.2	1.5	8.3	5.3	4.7	5.2	3.9
Zions Bancorporation	1.7	0.0	0.0	0.7	0.7	0.0	0.0	0.2
34 participating bank holding companies	257.4	14.7	10.5	67.4	27.2	79.2	31.0	27.5

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

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

Source: Federal Reserve estimates in the adverse scenario.

Table 13. Projected loan losses by type of loan for 2017:Q1–2019:Q1 under the adverse scenario: 34 participating bank holding companiesPercent of average balances¹

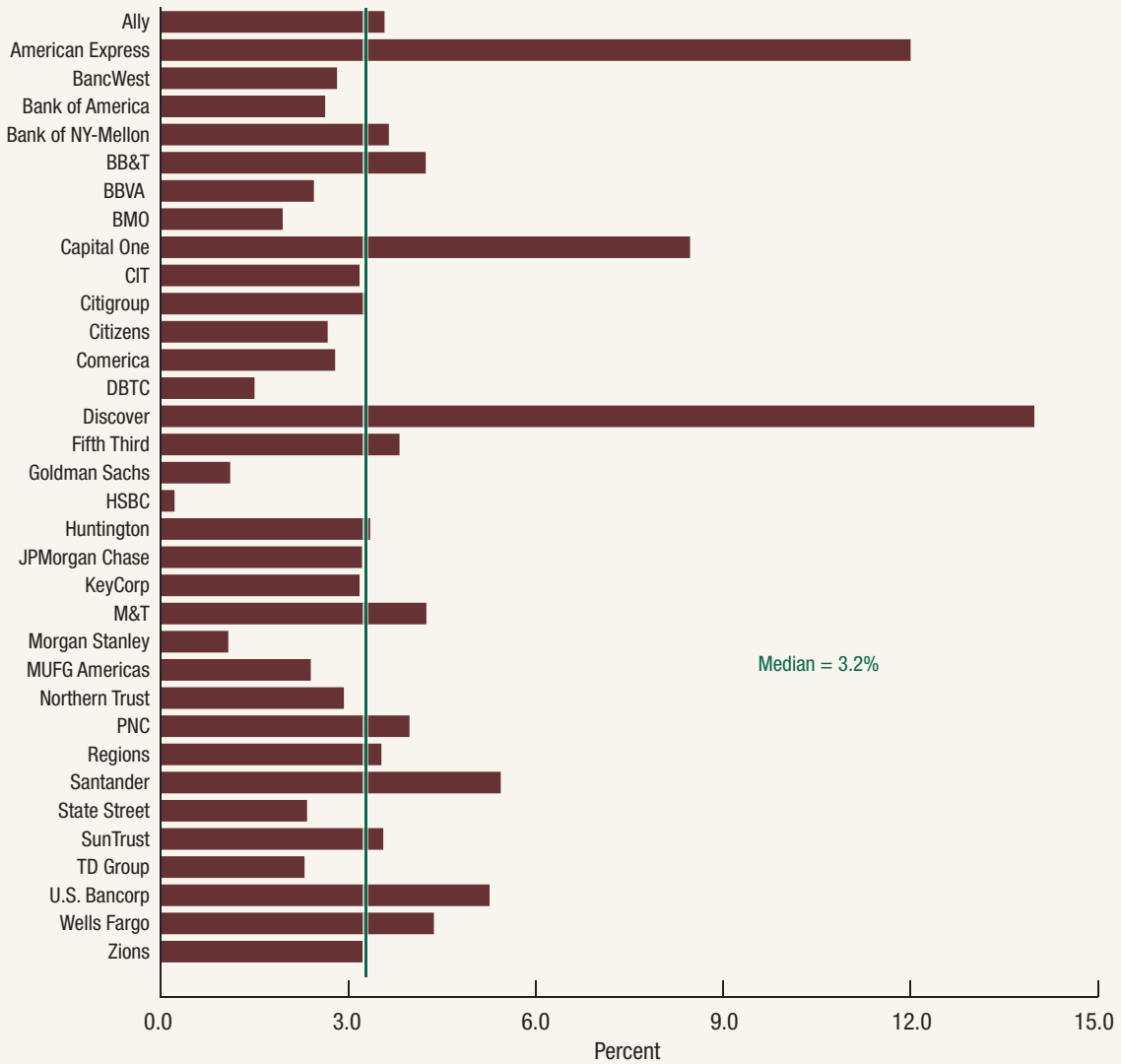
Bank holding company	Loan losses	First-lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial	Commercial real estate, domestic ²	Credit cards	Other consumer ³	Other loans ⁴
Ally Financial Inc.	3.6	1.4	4.0	2.9	1.2	0.0	4.6	4.6
American Express Company	6.9	0.0	0.0	7.4	0.0	6.6	0.0	0.0
BancWest Corporation	3.8	1.2	2.2	5.7	3.9	10.3	3.5	4.4
Bank of America Corporation	3.0	1.0	3.1	3.0	3.8	9.4	1.6	1.9
The Bank of New York Mellon Corporation	1.6	1.4	3.6	2.2	3.7	0.0	7.3	1.1
BB&T Corporation	2.9	1.5	2.1	3.7	3.0	10.0	4.3	2.1
BBVA Compass Bancshares, Inc.	3.6	1.6	3.3	4.9	4.0	13.4	5.4	1.7
BMO Financial Corp.	3.7	2.1	8.6	3.9	3.9	9.0	1.7	3.1
Capital One Financial Corporation	9.2	0.8	5.5	7.1	2.4	16.2	5.8	2.5
CIT Group Inc.	5.2	0.6	1.9	7.0	5.0	0.0	10.2	7.4
Citigroup Inc.	4.9	1.3	3.8	3.7	3.5	10.8	9.9	2.2
Citizens Financial Group, Inc.	3.1	0.6	3.2	3.5	3.9	9.3	3.9	2.0
Comerica Incorporated	2.5	1.2	1.7	2.3	2.8	0.0	7.1	2.9
Deutsche Bank Trust Corporation	2.2	1.5	3.4	3.4	3.3	0.0	3.0	1.2
Discover Financial Services	10.2	1.7	7.6	10.3	7.0	10.5	9.3	3.1
Fifth Third Bancorp	3.5	2.3	3.7	3.5	5.6	12.2	2.7	2.1
The Goldman Sachs Group, Inc.	5.7	49.8	3.2	7.0	4.0	0.0	4.4	3.1
HSBC North America Holdings Inc.	3.3	0.6	2.3	5.3	2.5	10.5	5.7	2.4
Huntington Bancshares Incorporated	2.9	1.7	2.4	3.1	3.7	10.5	2.8	2.4
JPMorgan Chase & Co.	3.8	0.9	2.7	6.5	1.9	8.8	3.3	2.9
KeyCorp	3.6	2.3	2.9	3.7	4.8	10.0	5.5	1.8
M&T Bank Corporation	3.3	3.0	3.2	3.0	3.5	10.5	4.1	2.2
Morgan Stanley	2.0	0.9	3.2	6.9	2.1	0.0	0.6	1.9
MUFG Americas Holdings Corporation	2.6	0.8	1.5	4.5	3.5	10.5	10.2	2.1
Northern Trust Corporation	2.5	0.9	4.7	2.6	3.4	0.0	11.1	2.6
The PNC Financial Services Group, Inc.	2.6	0.9	1.1	3.8	2.8	9.5	2.5	1.1
Regions Financial Corporation	3.9	2.0	3.6	4.7	5.5	11.5	5.6	1.7
Santander Holdings USA, Inc.	6.2	1.7	2.6	2.7	2.8	10.5	12.6	6.7
State Street Corporation	2.1	0.0	0.0	3.7	2.9	0.0	0.6	1.8
SunTrust Banks, Inc.	2.8	1.7	3.1	2.9	3.3	10.5	3.7	1.3
TD Group US Holdings LLC	3.6	1.8	3.9	3.7	3.3	15.2	1.7	2.0
U.S. Bancorp	4.0	0.9	3.0	5.3	4.7	11.9	2.6	3.2
Wells Fargo & Company	3.1	0.8	2.3	4.2	3.5	12.0	5.2	2.1
Zions Bancorporation	3.7	0.3	1.4	5.8	3.6	10.5	7.3	4.6
34 participating bank holding companies	3.9	1.2	2.9	4.3	3.3	10.7	4.4	2.3

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

¹ 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.² Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.³ Other consumer loans include student loans and automobile loans.⁴ Other loans include international real estate loans.

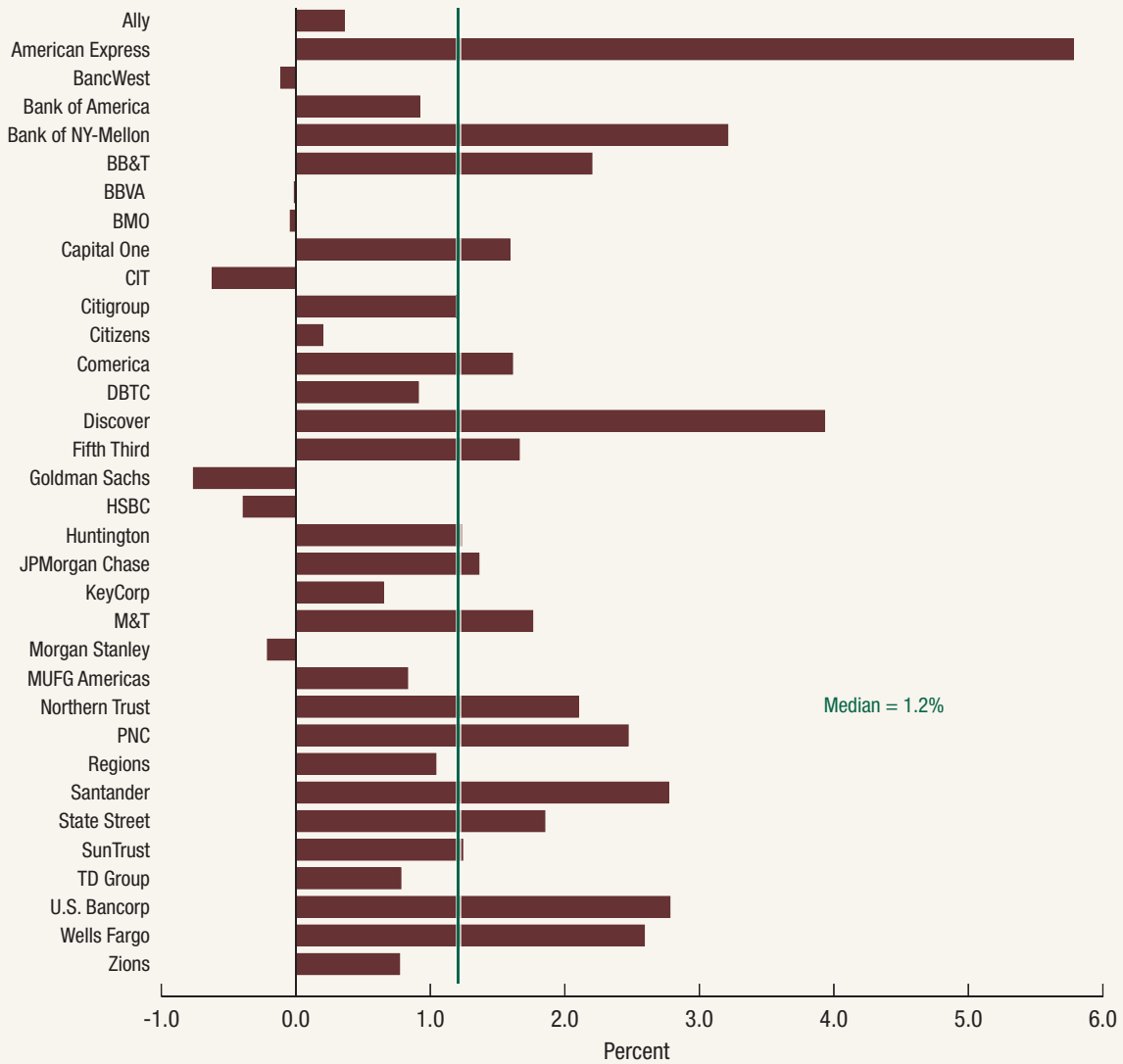
Source: Federal Reserve estimates in the adverse scenario.

Figure 17. PPNR rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2017:Q1–2019: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 2017:Q1–2019:Q1 as a percent of average assets.

Table 14. Mapping of loan categories to disclosure categories

Disclosure category	Loan type
First-lien mortgages, domestic	Domestic first-lien mortgages
Junior liens and HELOCs, domestic	Domestic second-lien mortgages Domestic HELOCs
Credit cards	Domestic cards International cards
Commercial and industrial loans	Commercial and industrial loans Corporate and business cards Small business loans
Commercial real estate, domestic	Domestic owner-occupied CRE loans Domestic construction loans Domestic multifamily loans Domestic non-owner occupied CRE loans
Other consumer	Student loans Domestic auto loans International auto loans Domestic other consumer loans International other consumer loans
Other loans	Agricultural loans Domestic farm loans International farm loans International owner-occupied CRE loans International construction loans International multifamily loans International non-owner occupied CRE loans International first-lien mortgages International second-lien mortgages Loans to foreign governments Loans to financial institutions Loans for purchasing and carrying securities Other non-consumer loans Other leases

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. Historical data: Domestic variables, Q1:2000–Q4:2016

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 2000	1.2	4.3	8.1	11.8	4.0	4.0	5.5	6.6	6.7	8.2	8.3	8.7	14,296	102	125	27.0
Q2 2000	7.8	10.2	4.2	6.1	3.9	3.2	5.7	6.5	6.4	8.5	8.3	9.2	13,619	105	124	33.5
Q3 2000	0.5	3.1	4.8	7.4	4.0	3.7	6.0	6.1	6.1	8.1	8.0	9.5	13,613	107	137	21.9
Q4 2000	2.3	4.5	1.4	3.6	3.9	2.9	6.0	5.6	5.8	7.9	7.6	9.5	12,176	110	141	31.7
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	10,646	112	139	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	114	139	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	116	141	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	10,708	118	136	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	10,776	120	137	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	123	136	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	7,774	126	139	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	129	142	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	8,052	132	148	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	135	149	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	9,650	138	147	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	10,800	143	146	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	148	153	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	11,145	154	160	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	10,894	159	172	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	165	176	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	172	176	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	11,857	179	182	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	12,283	185	187	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	191	195	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	13,122	194	200	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	12,809	193	209	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	192	219	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	14,216	191	217	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	189	227	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	183	236	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	15,318	178	249	30.8

(continued)

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
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	14,754	172	251	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	165	240	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	157	224	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	149	233	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	9,057	142	223	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	137	209	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	9,343	137	178	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	10,813	138	154	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	138	155	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	138	150	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	10,646	137	165	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	135	167	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	133	173	23.5
Q1 2011	-1.5	0.2	5.0	8.2	9.0	4.3	0.1	2.1	3.5	5.4	4.9	3.3	13,909	132	180	29.4
Q2 2011	2.9	6.0	-0.6	3.5	9.1	4.6	0.0	1.8	3.3	5.1	4.6	3.3	13,843	132	177	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	11,677	132	177	48.0
Q4 2011	4.6	5.2	0.2	1.6	8.6	1.8	0.0	1.0	2.1	5.0	4.0	3.3	13,019	132	188	45.5
Q1 2012	2.7	4.9	6.7	9.2	8.3	2.4	0.1	0.9	2.1	4.7	3.9	3.3	14,627	134	188	23.0
Q2 2012	1.9	3.8	3.1	4.4	8.2	0.8	0.1	0.8	1.8	4.5	3.8	3.3	14,100	137	189	26.7
Q3 2012	0.5	2.7	-0.2	1.1	8.0	1.6	0.1	0.7	1.6	4.2	3.5	3.3	14,895	140	197	20.5
Q4 2012	0.1	1.7	10.9	13.3	7.8	2.9	0.1	0.7	1.7	3.9	3.4	3.3	14,835	143	198	22.7
Q1 2013	2.8	4.4	-15.7	-14.5	7.7	1.6	0.1	0.8	1.9	4.0	3.5	3.3	16,396	147	202	19.0
Q2 2013	0.8	1.6	2.4	2.5	7.5	-0.5	0.1	0.9	2.0	4.1	3.7	3.3	16,771	151	213	20.5
Q3 2013	3.1	5.1	2.4	3.9	7.3	2.0	0.0	1.5	2.7	4.9	4.4	3.3	17,718	154	224	17.0
Q4 2013	4.0	6.1	0.9	2.6	6.9	1.9	0.1	1.4	2.8	4.8	4.3	3.3	19,413	158	229	20.3
Q1 2014	-1.2	0.6	4.5	6.6	6.7	2.4	0.0	1.6	2.8	4.6	4.4	3.3	19,711	160	229	21.4
Q2 2014	4.0	6.3	5.3	7.3	6.2	1.9	0.0	1.7	2.7	4.3	4.2	3.3	20,569	161	239	17.0
Q3 2014	5.0	6.7	4.1	5.2	6.1	0.9	0.0	1.7	2.5	4.2	4.1	3.3	20,459	163	245	17.0
Q4 2014	2.3	2.8	4.3	4.3	5.7	-0.3	0.0	1.6	2.3	4.2	3.9	3.3	21,425	165	253	26.3
Q1 2015	2.0	2.1	2.0	0.3	5.6	-2.9	0.0	1.5	2.0	4.0	3.7	3.3	21,708	168	262	22.4
Q2 2015	2.6	4.9	3.9	5.8	5.4	2.4	0.0	1.5	2.2	4.2	3.8	3.3	21,631	170	266	18.9
Q3 2015	2.0	3.2	3.3	4.4	5.2	1.4	0.0	1.6	2.3	4.5	3.9	3.3	19,959	172	272	40.7
Q4 2015	0.9	1.8	3.0	3.4	5.0	0.8	0.1	1.6	2.2	4.6	3.9	3.3	21,101	174	277	24.4
Q1 2016	0.8	1.3	2.1	2.4	4.9	-0.3	0.3	1.4	2.0	4.6	3.7	3.5	21,179	177	278	28.1
Q2 2016	1.4	3.7	2.9	5.0	4.9	2.5	0.3	1.3	1.8	4.1	3.6	3.5	21,621	179	283	25.8
Q3 2016	3.5	5.0	2.6	4.1	4.9	1.6	0.3	1.2	1.6	3.7	3.4	3.5	22,469	182	290	18.1
Q4 2016	3.1	6.1	1.6	4.5	4.7	3.4	0.4	1.7	2.2	4.1	3.9	3.5	23,277	183	294	22.5

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.

Table A.2. Historical data: International variables, Q1:2000–Q4:2016

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 2000	4.4	2.6	0.957	7.0	1.5	100.0	7.9	-2.7	102.7	4.1	0.3	1.592
Q2 2000	3.8	0.9	0.955	7.1	-0.2	100.7	0.8	1.2	106.1	2.9	0.5	1.513
Q3 2000	2.2	3.4	0.884	8.1	2.2	101.5	0.1	-1.2	107.9	1.1	1.0	1.479
Q4 2000	3.3	2.8	0.939	2.9	2.5	105.1	4.0	-0.6	114.4	0.6	1.9	1.496
Q1 2001	3.5	1.2	0.879	4.9	1.7	106.0	2.6	-1.2	125.5	5.3	0.0	1.419
Q2 2001	0.4	4.0	0.847	5.5	2.1	106.1	-2.4	-0.3	124.7	2.8	3.2	1.408
Q3 2001	0.3	1.4	0.910	4.7	1.2	106.4	-4.4	-1.1	119.2	2.7	1.0	1.469
Q4 2001	0.7	1.7	0.890	8.5	0.0	106.9	-0.8	-1.4	131.0	1.6	-0.1	1.454
Q1 2002	0.7	3.1	0.872	7.7	0.4	107.3	0.3	-2.7	132.7	1.7	2.0	1.425
Q2 2002	1.9	2.0	0.986	8.1	1.1	104.8	3.2	1.7	119.9	3.0	0.9	1.525
Q3 2002	1.6	1.6	0.988	7.2	1.5	105.5	1.7	-0.7	121.7	3.1	1.3	1.570
Q4 2002	0.4	2.3	1.049	6.5	0.8	104.5	1.5	-0.4	118.8	3.5	1.9	1.610
Q1 2003	-0.8	3.3	1.090	6.7	3.6	105.5	-1.2	-1.6	118.1	3.3	1.7	1.579
Q2 2003	0.2	0.5	1.150	2.1	1.2	104.0	3.8	1.7	119.9	3.7	0.2	1.653
Q3 2003	2.2	2.1	1.165	14.3	0.1	102.6	1.7	-0.7	111.4	4.0	1.7	1.662
Q4 2003	2.9	2.3	1.260	13.0	5.5	103.4	4.3	-0.6	107.1	3.3	1.7	1.784
Q1 2004	2.4	2.2	1.229	5.6	4.1	101.4	3.5	-0.9	104.2	2.3	1.4	1.840
Q2 2004	2.1	2.6	1.218	6.9	4.1	102.8	-0.3	1.1	109.4	1.9	0.8	1.813
Q3 2004	1.3	2.0	1.242	8.3	4.0	102.7	1.9	0.1	110.2	0.8	1.1	1.809
Q4 2004	1.4	2.4	1.354	6.4	0.8	98.9	-1.6	1.7	102.7	2.4	2.4	1.916
Q1 2005	0.8	1.4	1.297	10.6	2.9	98.6	2.2	-2.7	107.2	2.3	2.6	1.889
Q2 2005	2.6	2.2	1.210	8.6	1.5	98.9	3.6	-1.0	110.9	4.4	1.8	1.793
Q3 2005	3.1	3.1	1.206	9.3	2.3	98.6	3.9	-1.0	113.3	4.4	2.8	1.770
Q4 2005	2.5	2.5	1.184	11.7	1.7	98.1	0.7	0.2	117.9	5.5	1.4	1.719
Q1 2006	3.7	1.7	1.214	11.0	2.4	96.8	0.2	1.2	117.5	1.3	1.9	1.739
Q2 2006	4.2	2.5	1.278	7.0	3.2	96.7	1.7	0.4	114.5	0.9	3.0	1.849
Q3 2006	2.6	2.1	1.269	10.3	2.1	96.4	-0.7	0.4	118.0	0.6	3.3	1.872
Q4 2006	4.4	0.9	1.320	11.2	3.7	94.6	4.5	-0.6	119.0	1.4	2.7	1.959
Q1 2007	3.1	2.3	1.337	13.9	3.6	94.0	3.6	-0.7	117.6	4.1	2.5	1.969
Q2 2007	2.5	2.3	1.352	10.5	4.9	91.9	-0.4	0.4	123.4	3.0	1.8	2.006
Q3 2007	1.8	2.1	1.422	8.7	7.5	90.6	-1.2	0.3	115.0	3.1	0.3	2.039
Q4 2007	2.2	4.9	1.460	12.8	6.0	89.4	1.9	2.2	111.7	3.0	4.0	1.984
Q1 2008	2.0	4.3	1.581	7.2	8.1	88.0	1.6	1.3	99.9	0.6	3.4	1.986
Q2 2008	-1.3	3.2	1.575	5.9	6.4	88.7	-2.8	1.8	106.2	-2.6	5.8	1.991
Q3 2008	-2.2	3.2	1.408	3.1	2.8	91.5	-4.8	3.5	105.9	-6.6	5.9	1.780
Q4 2008	-6.8	-1.4	1.392	0.3	-1.0	92.2	-8.3	-2.1	90.8	-8.7	0.4	1.462
Q1 2009	-11.4	-1.1	1.326	4.4	-1.4	94.2	-18.0	-3.6	99.2	-6.4	-0.2	1.430
Q2 2009	-0.9	0.0	1.402	15.1	2.2	92.2	8.2	-1.6	96.4	-0.9	2.3	1.645
Q3 2009	1.2	1.1	1.463	12.8	3.9	91.3	-0.3	-1.4	89.5	0.3	3.6	1.600
Q4 2009	2.1	1.6	1.433	9.2	5.1	90.6	6.1	-1.6	93.1	1.6	2.8	1.617
Q1 2010	1.8	1.8	1.353	9.9	4.4	89.8	4.4	1.1	93.4	2.2	4.2	1.519
Q2 2010	4.0	2.0	1.229	9.7	3.4	91.0	4.0	-1.4	88.5	4.1	3.3	1.495
Q3 2010	1.6	1.6	1.360	8.8	4.0	88.4	7.7	-2.1	83.5	2.3	2.2	1.573
Q4 2010	2.3	2.6	1.327	9.3	7.7	87.4	-2.7	1.4	81.7	0.5	3.9	1.539
Q1 2011	3.2	3.7	1.418	9.8	6.3	86.4	-5.7	0.0	82.8	2.2	7.0	1.605
Q2 2011	0.0	3.2	1.452	6.5	5.4	85.3	-2.0	-0.8	80.6	0.3	4.6	1.607
Q3 2011	0.1	1.3	1.345	5.2	5.1	87.3	9.5	0.3	77.0	1.7	3.5	1.562
Q4 2011	-1.4	3.5	1.297	6.9	3.2	87.2	-0.5	-0.7	77.0	1.0	3.4	1.554
Q1 2012	-0.8	2.8	1.333	7.3	3.3	86.2	4.4	2.5	82.4	1.8	2.3	1.599
Q2 2012	-1.3	2.3	1.267	6.0	3.9	88.0	-1.6	-1.6	79.8	-0.3	1.9	1.569

(continued)

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)
Q3 2012	-0.6	1.6	1.286	6.5	2.1	86.3	-1.8	-1.8	77.9	4.7	2.0	1.613
Q4 2012	-1.7	2.4	1.319	7.3	3.6	85.9	0.3	0.3	86.6	-0.9	4.2	1.626
Q1 2013	-1.2	1.3	1.282	6.6	4.3	86.1	5.1	0.6	94.2	2.5	3.0	1.519
Q2 2013	1.8	0.4	1.301	6.5	2.9	87.1	4.3	-0.2	99.2	2.1	1.6	1.521
Q3 2013	1.3	1.2	1.354	7.8	3.7	86.7	2.4	2.4	98.3	3.1	2.0	1.618
Q4 2013	0.8	0.3	1.378	6.4	4.0	85.7	-0.8	3.1	105.3	2.0	1.7	1.657
Q1 2014	1.3	0.9	1.378	6.4	1.4	86.8	4.9	1.3	103.0	3.4	1.9	1.668
Q2 2014	0.7	-0.1	1.369	7.0	2.5	86.7	-7.1	7.7	101.3	3.8	1.5	1.711
Q3 2014	1.4	0.2	1.263	6.9	2.4	87.0	-0.8	1.6	109.7	3.3	0.6	1.622
Q4 2014	1.8	-0.4	1.210	5.6	1.2	88.1	2.1	-0.3	119.9	3.4	-0.4	1.558
Q1 2015	3.3	-0.8	1.074	6.2	0.8	88.1	6.3	0.4	120.0	1.0	-1.2	1.485
Q2 2015	1.5	1.8	1.115	6.6	2.7	88.3	-0.5	0.3	122.1	1.9	0.9	1.573
Q3 2015	1.1	-0.3	1.116	6.6	2.7	90.9	0.8	0.0	119.8	1.1	0.5	1.512
Q4 2015	2.0	0.0	1.086	5.4	1.6	92.2	-1.8	0.1	120.3	2.8	0.0	1.475
Q1 2016	2.0	-1.2	1.139	6.3	2.8	91.7	2.8	-0.1	112.4	1.4	0.1	1.438
Q2 2016	1.2	1.2	1.103	6.4	2.7	94.0	1.8	-1.3	102.8	2.6	0.9	1.324
Q3 2016	1.8	1.1	1.124	6.6	1.2	93.6	1.3	-0.8	101.2	2.3	1.9	1.302
Q4 2016	1.4	1.9	1.055	6.0	2.5	97.4	0.8	0.3	116.8	1.4	2.0	1.234

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.

Table A.3. Supervisory baseline scenario: Domestic variables, Q1:2017–Q1:2020

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 2017	2.2	4.3	2.2	4.3	4.7	2.4	0.6	1.7	2.5	4.2	4.2	3.8	23,551	184	298	19.0
Q2 2017	2.3	4.3	2.5	4.6	4.6	2.4	0.7	1.9	2.6	4.4	4.3	3.9	23,831	185	301	20.3
Q3 2017	2.4	4.5	2.9	5.0	4.6	2.3	0.9	2.0	2.7	4.5	4.4	4.1	24,123	187	305	19.3
Q4 2017	2.3	4.5	2.7	4.8	4.5	2.3	1.1	2.2	2.9	4.6	4.5	4.3	24,422	188	309	19.4
Q1 2018	2.4	4.6	2.9	4.9	4.5	2.3	1.3	2.3	3.0	4.7	4.6	4.4	24,727	189	313	19.2
Q2 2018	2.4	4.7	2.6	4.7	4.5	2.3	1.5	2.4	3.1	4.8	4.7	4.6	25,042	190	317	19.2
Q3 2018	2.4	4.6	2.6	4.7	4.4	2.3	1.7	2.6	3.2	4.9	4.8	4.8	25,354	191	321	19.3
Q4 2018	2.3	4.5	2.4	4.6	4.4	2.4	1.9	2.7	3.3	5.0	5.0	5.0	25,668	193	325	19.4
Q1 2019	2.0	4.2	2.2	4.3	4.5	2.3	2.2	2.8	3.4	5.1	5.0	5.2	25,968	194	327	19.8
Q2 2019	2.1	4.2	2.3	4.3	4.6	2.3	2.4	2.9	3.4	5.1	5.1	5.5	26,269	195	330	20.0
Q3 2019	2.1	4.1	2.2	4.3	4.6	2.2	2.6	2.9	3.5	5.2	5.1	5.7	26,571	197	332	20.2
Q4 2019	2.0	4.1	2.2	4.2	4.7	2.2	2.8	3.0	3.5	5.2	5.2	5.9	26,874	198	335	20.3
Q1 2020	2.0	4.0	2.1	4.0	4.7	2.1	2.9	3.0	3.5	5.2	5.2	5.9	27,173	200	337	20.2

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.**Table A.4. Supervisory baseline scenario: International variables, Q1:2017–Q1:2020**

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 2017	1.5	1.3	1.050	6.0	2.4	97.9	0.9	0.5	116.4	1.2	1.9	1.228
Q2 2017	1.5	1.4	1.044	5.9	2.5	98.4	0.9	0.6	116.0	1.1	2.0	1.222
Q3 2017	1.6	1.5	1.039	5.9	2.6	98.9	0.9	0.8	115.6	1.0	2.1	1.216
Q4 2017	1.6	1.5	1.034	5.8	2.6	99.4	0.9	0.9	115.2	1.1	2.2	1.210
Q1 2018	1.6	1.5	1.036	5.8	2.6	99.7	0.9	1.1	115.6	1.3	2.2	1.222
Q2 2018	1.6	1.6	1.039	5.7	2.6	100.0	0.8	1.2	116.1	1.4	2.2	1.234
Q3 2018	1.5	1.6	1.041	5.7	2.6	100.3	0.8	1.3	116.5	1.6	2.2	1.245
Q4 2018	1.5	1.6	1.044	5.8	2.7	100.6	0.8	1.3	117.0	1.7	2.1	1.257
Q1 2019	1.5	1.7	1.044	5.8	2.7	100.6	0.8	1.4	117.0	1.8	2.1	1.257
Q2 2019	1.5	1.7	1.044	5.9	2.8	100.6	0.8	1.5	117.0	1.8	2.0	1.257
Q3 2019	1.5	1.7	1.044	5.9	2.9	100.6	0.8	1.5	117.0	1.9	2.0	1.257
Q4 2019	1.5	1.8	1.044	5.8	2.9	100.6	0.8	1.6	117.0	1.9	2.0	1.257
Q1 2020	1.5	1.8	1.044	5.8	3.0	100.6	0.8	1.6	117.0	1.9	1.9	1.257

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.

Table A.5. Supervisory adverse scenario: Domestic variables, Q1:2017–Q1:2020

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 2017	-1.5	0.9	0.7	2.4	5.2	1.8	0.1	1.7	2.3	5.6	4.7	3.3	15,960	181	291	37.1
Q2 2017	-2.8	-0.7	-0.6	1.1	5.8	1.8	0.1	1.8	2.4	5.9	4.9	3.3	15,042	179	283	32.7
Q3 2017	-2.0	0.0	-0.5	1.1	6.3	1.8	0.1	1.8	2.5	6.1	5.1	3.3	14,290	176	275	34.4
Q4 2017	-1.5	0.5	-0.5	1.2	6.8	1.8	0.1	1.9	2.5	6.2	5.2	3.2	13,982	173	267	32.0
Q1 2018	-0.5	1.4	0.2	1.9	7.1	1.8	0.1	1.9	2.6	6.0	5.2	3.2	14,367	170	259	28.5
Q2 2018	1.0	3.0	0.6	2.4	7.3	2.0	0.1	1.9	2.7	5.8	5.2	3.2	15,001	166	254	25.8
Q3 2018	1.4	3.3	1.0	2.7	7.4	2.0	0.1	2.0	2.7	5.6	5.1	3.2	15,693	163	250	23.6
Q4 2018	2.6	4.4	1.5	3.4	7.3	2.1	0.1	2.0	2.7	5.4	5.1	3.2	16,603	161	249	21.6
Q1 2019	2.6	4.3	1.6	3.5	7.2	2.1	0.1	2.0	2.7	5.2	5.0	3.2	17,519	161	249	20.1
Q2 2019	3.0	4.6	2.1	3.8	7.1	2.0	0.1	2.0	2.7	5.0	4.9	3.2	18,514	161	251	18.7
Q3 2019	3.0	4.5	2.2	3.8	7.0	2.0	0.1	2.0	2.7	4.8	4.8	3.2	19,243	162	255	18.2
Q4 2019	3.0	4.5	2.1	3.8	6.9	1.9	0.1	2.0	2.7	4.7	4.8	3.2	20,025	163	259	17.6
Q1 2020	3.0	4.5	2.0	3.5	6.8	1.8	0.1	2.0	2.7	4.5	4.7	3.2	20,867	164	262	17.3

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.**Table A.6. Supervisory adverse scenario: International variables, Q1:2017–Q1:2020**

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 2017	-3.0	0.7	0.998	1.4	1.7	105.4	-3.2	-2.5	111.4	-2.9	0.5	1.205
Q2 2017	-3.9	0.1	0.977	1.8	0.9	109.1	-6.3	-3.4	108.0	-4.3	0.0	1.189
Q3 2017	-2.7	0.3	0.964	3.5	0.0	108.8	-5.8	-2.7	109.2	-3.7	0.1	1.175
Q4 2017	-1.5	0.3	0.953	5.3	-0.1	109.4	-4.4	-2.7	108.8	-2.7	0.2	1.163
Q1 2018	-0.2	0.4	0.958	6.4	0.0	108.7	-3.1	-2.1	109.2	-1.4	0.4	1.177
Q2 2018	0.7	0.6	0.964	6.7	0.1	108.1	-1.9	-1.5	109.6	-0.2	0.7	1.191
Q3 2018	1.3	0.8	0.970	6.7	0.4	107.5	-0.9	-1.0	110.0	0.7	1.0	1.204
Q4 2018	1.7	1.0	0.975	6.8	0.7	106.9	-0.1	-0.5	110.5	1.5	1.2	1.217
Q1 2019	1.9	1.2	0.979	6.8	1.0	106.2	0.5	-0.2	110.6	2.0	1.3	1.218
Q2 2019	2.0	1.4	0.982	6.9	1.3	105.5	1.0	0.2	110.8	2.4	1.4	1.218
Q3 2019	2.0	1.5	0.986	7.0	1.6	105.0	1.3	0.5	111.1	2.6	1.5	1.218
Q4 2019	1.9	1.6	0.989	7.0	1.9	104.7	1.5	0.7	111.4	2.6	1.6	1.218
Q1 2020	1.9	1.6	0.991	7.0	2.1	104.4	1.6	0.9	111.6	2.7	1.6	1.218

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.

Table A.7. Supervisory severely adverse scenario: Domestic variables, Q1:2017–Q1:2020

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 2017	-5.1	-2.7	-1.0	0.5	5.6	1.5	0.1	0.3	0.8	5.5	4.0	3.3	15,374	179	288	68.7
Q2 2017	-7.5	-5.5	-4.0	-2.7	6.9	1.3	0.1	0.4	0.8	6.0	4.3	3.3	13,538	174	270	50.9
Q3 2017	-5.9	-4.1	-3.9	-2.6	8.0	1.3	0.1	0.5	0.9	6.3	4.5	3.3	12,295	168	251	57.2
Q4 2017	-5.1	-3.3	-3.7	-2.3	8.9	1.4	0.1	0.6	1.0	6.4	4.6	3.2	11,704	162	234	49.3
Q1 2018	-3.0	-1.4	-2.5	-1.1	9.6	1.5	0.1	0.7	1.1	6.1	4.5	3.2	12,338	156	218	39.1
Q2 2018	0.0	1.6	-1.4	0.2	9.8	1.7	0.1	0.7	1.2	5.7	4.4	3.2	13,325	148	206	31.9
Q3 2018	0.7	2.3	-0.4	1.1	10.0	1.7	0.1	0.8	1.3	5.4	4.4	3.2	14,348	142	196	26.7
Q4 2018	3.0	4.5	0.8	2.4	9.9	1.9	0.1	0.9	1.4	5.0	4.3	3.2	15,625	138	193	22.2
Q1 2019	3.0	4.4	1.4	2.9	9.8	1.8	0.1	1.0	1.5	4.7	4.1	3.2	17,070	137	192	19.3
Q2 2019	3.9	5.1	2.2	3.7	9.6	1.7	0.1	1.1	1.6	4.3	4.0	3.2	18,739	138	194	16.8
Q3 2019	3.9	5.0	2.5	3.8	9.4	1.6	0.1	1.1	1.6	4.0	3.9	3.2	19,909	140	198	16.0
Q4 2019	3.9	4.9	2.6	3.8	9.1	1.6	0.1	1.2	1.7	3.8	3.9	3.2	21,186	142	203	14.9
Q1 2020	3.9	4.8	2.5	3.6	8.9	1.4	0.1	1.2	1.8	3.6	3.8	3.2	22,577	145	207	14.3

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.**Table A.8. Supervisory severely adverse scenario: International variables, Q1:2017–Q1:2020**

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 2017	-6.0	0.6	0.959	-0.1	0.5	107.4	-4.3	-3.1	113.0	-4.7	-0.1	1.179
Q2 2017	-7.0	-0.2	0.928	0.4	-0.5	112.1	-7.8	-4.1	110.4	-6.6	-0.8	1.154
Q3 2017	-5.7	-1.0	0.928	2.2	-1.2	114.3	-9.2	-4.6	109.5	-6.1	-1.1	1.141
Q4 2017	-4.7	-1.5	0.929	3.4	-1.6	115.8	-9.5	-4.9	108.0	-5.0	-1.0	1.126
Q1 2018	-2.9	-1.5	0.949	5.1	-1.6	114.5	-7.7	-4.2	108.1	-3.1	-0.6	1.142
Q2 2018	-1.5	-1.3	0.964	5.9	-1.3	113.2	-5.5	-3.5	108.2	-1.4	-0.1	1.158
Q3 2018	-0.3	-0.9	0.975	6.2	-1.0	112.0	-3.6	-2.8	108.4	0.1	0.2	1.174
Q4 2018	0.6	-0.4	0.981	6.3	-0.6	110.9	-2.1	-2.2	108.7	1.2	0.6	1.188
Q1 2019	1.3	0.1	0.985	6.4	-0.2	109.6	-0.9	-1.6	108.7	2.0	0.8	1.189
Q2 2019	1.8	0.5	0.989	6.5	0.2	108.5	0.0	-1.1	108.7	2.6	1.0	1.190
Q3 2019	2.0	0.7	0.994	6.6	0.6	107.5	0.7	-0.6	108.9	2.9	1.1	1.190
Q4 2019	2.1	0.9	0.999	6.6	0.9	106.7	1.1	-0.3	109.2	3.0	1.3	1.191
Q1 2020	2.1	1.1	1.003	6.7	1.3	106.0	1.4	0.1	109.4	3.0	1.4	1.192

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.

Notes Regarding Scenario Variables

Sources for data through 2016:Q4 (as released through 1/18/2017). The 2016:Q4 values of variables marked with an asterisk (*) are projected.

***U.S. real GDP growth:** Percent change in real gross domestic product in chained dollars, expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 1.1.6, line 1).

***U.S. nominal GDP growth:** Percent change in nominal gross domestic product, expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 1.1.5, line 1).

***U.S. real disposable income growth:** Percent change in nominal disposable personal income, divided by the price index for personal consumption expenditures, expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 2.1, line 27, and NIPA table 1.1.4, line 2).

***U.S. nominal disposable income growth:** Percent change in nominal disposable personal income, expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 2.1, line 27).

U.S. unemployment rate: Quarterly average of seasonally-adjusted monthly data for the unemployment rate of the civilian, noninstitutional population of age 16 years and older, Bureau of Labor Statistics (series LNS14000000).

U.S. CPI inflation: Percent change in the quarterly average of seasonally-adjusted monthly data for the consumer price index, expressed at an annualized rate, Bureau of Labor Statistics (series CUSR0000SA0).

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: Staff calculations based on 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 and other sources.

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 1000).

U.S. Market Volatility Index (VIX): Chicago Board Options Exchange, converted to quarterly frequency 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, staff calculations based on 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, staff calculations based on Office for National Statistics via Haver.

Exchange rates: End-of-quarter rates from the H.10 Release, Foreign Exchange Rates, Federal Reserve Board.

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 34 bank holding companies (BHCs) subject to DFAST 2017.⁴³ 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.
3. Models to project the components of PPNR (revenues and non-credit-related expenses) and losses related to operational-risk events that are part of PPNR.
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.

For DFAST 2017, the Federal Reserve has materially enhanced its models for projecting PPNR, operational risk and mortgage repurchase losses, and credit losses on commercial real estate (CRE) loans. In addition, the calculation of regulatory capital and capital ratios has been expanded to include post-stress projections of the supplementary leverage ratio.

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 loans, and retail loans, including various types of residential mortgages, credit cards, student loans, auto loans, small business loans, and other consumer loans.

The models project losses using detailed loan portfolio data provided by the BHCs on the Capital Assessments and Stress Testing (FR Y-14) information collection.

Within larger loan categories, loan portfolios may be subcategorized by loan type, each with their own specific loss projection model. Generally, the loss models for all loan portfolios belonging to a larger category are similar. For example, losses on first-lien mortgage, junior-lien mortgage, and home equity loan portfolios are each estimated by separate models, but each model follows the same structural form.

Two general approaches are taken to model losses on the accrual loan portfolio. In the first approach—an approach broadly used for DFAST 2017—the models estimate expected losses under the macroeconomic scenario; that is, they project the probability

⁴³ In connection with DFAST 2017, 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; Haver Analytics, 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.; StataCorp 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.

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 a terminal 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 modeled 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 modeling 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, 2016. 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, 2016, 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 permitted 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 Loans: 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.⁴⁴ Small business loans with less than \$1 million in committed balances are included in other retail loans and are modeled separately.

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, 2016, 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 calculated 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, 2016, are considered in default.

PDs are projected over the planning horizon using a series of equations fitted to the historical relationship between changes in the PD and macroeconomic variables, including growth in real gross domestic

⁴⁴ 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.

product (GDP), changes in the unemployment rate, and changes in 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.

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 lines of credit and other revolving commitments 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 draw-down amount is calibrated to the historical draw-down experience for defaulted U.S. syndicated revolving lines of credit that are in the Shared National Credit (SNC) database.⁴⁵ 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, loans to syndicated pipeline, non-purpose margin loans (net of loans to purchase and carry securities), and other loans.⁴⁶ 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.

⁴⁵ 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/supervisionreg/snc.htm.

⁴⁶ 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 is assigned.

Wholesale Loans: CRE

CRE loans are loans collateralized by domestic and international non-owner occupied 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 loans are projected at the loan level using an expected-loss modeling framework.

The PD model for CRE loans is a hazard model of the probability that a loan transitions from current 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 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 age on the PD is calculated jointly for income-producing and C&LD loans. However, controls are included for income-producing, multifamily, and C&LD loans, and the effect of reaching loan maturity on the PD is allowed to vary for each type of loan. The models are estimated using the historical Capital Assessments and Stress Testing (FR Y-14) information collection and historical commercial mortgage-backed security (CMBS) data pooled together. The models include controls for the types of loans to account for differences in risk characteristics between income-producing, C&LD, and CMBS loans.

The LGD for CRE loans is calculated using Capital Assessments and Stress Testing (FR Y-14Q) report 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 loans

is assumed to equal the loan's full committed balance for both income producing and C&LD loans.

Retail Loans: 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.⁴⁷

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.⁴⁸ 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 predict default for each loan reported by each BHC under the supervisory scenarios. Residential mortgage loans are considered in default when they are 180 days or more past due.

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 compo-

nent of losses net of recoveries—the proceeds from the sale of the property net of foreclosure expenses (loss model).⁴⁹

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.⁵⁰

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, 2016, 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, 2016, 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 his-

⁴⁷ 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.

⁴⁸ 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).

⁴⁹ 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.

⁵⁰ 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).

tory. Economic drivers include interest rates, home prices, and the unemployment rate.

For second-lien HELs and HELOCs that are current as of December 31, 2016, but are junior to a seriously delinquent first-lien mortgage, 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.

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 maximum of the outstanding line balance and the credit limit.

Retail Loans: 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 or more 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, cur-

rent 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 industrywide, 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-14) information collection.

The LGD for credit cards is assumed to be a fixed percentage of EAD 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 characteristics. 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 Loans: 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. Auto loans are defined as being in default based on either the payment status (120 days or more 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 modeled as a function of 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 Capital Assessments and Stress Testing (FR Y-14) information collection. 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 Loans: Other Retail Loans

The other retail loans category 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 loans are forecast by modeling as a function of portfolio risk characteristics and macroeconomic variables. This model is then used to predict future charge-offs consistent with the evolution of economic conditions under the supervisory scenarios.⁵¹ The predicted net charge-off rate is applied to balances projected by the Federal Reserve to estimate projected losses.

The net charge-off rate is projected using a system of equations that also generates projections of the delinquency rate and the default rate. 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. 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.⁵² Each retail product type is modeled separately and, for each product type, eco-

nomics 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.⁵³

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, 2016. The portfolio-level charge-off rate equals the dollar-weighted average of the segment-level charge-off rates.⁵⁴

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.⁵⁵ 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

⁵¹ For the government-guaranteed portion of BHCs' student loan portfolios, an assumption of low PD and LGD is applied.

⁵² Roll-rate dynamics refers to how delinquent loans in one period transition to defaulted loans in the next, and how defaulted loans in a period transition to net charge-offs in the next.

⁵³ 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.

⁵⁴ 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.

⁵⁵ For loan types modeled in a charge-off framework, the appropriate level of ALLL is adjusted to reflect the difference in timing between the recognition of expected losses and that of charge-offs.

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.

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 calculated by applying scenario-specific interest rate and credit spread projections.

Losses on C&I and CRE loans and commitments are calculated 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 calculated 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 the accumulated other comprehensive income (AOCI) must incorporate into Common Equity Tier 1 (CET1) capital the 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 calculated 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.⁵⁶ 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.⁵⁷

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 and borrower characteristics, 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.

⁵⁶ 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.

⁵⁷ 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.

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 calculated separately. Observed OTTI write-downs are based on data reported on the FR Y-14Q report and unrealized loss is calculated 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 the Federal Reserve in a BHC's securities portfolio after December 31, 2016, 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 report.

Mark-to-market gains and losses on trading positions are calculated 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 pri-

vate 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.

Credit Valuation Adjustments

Losses that are related to the potential adverse changes in credit quality of a counterparty to derivatives positions 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 report 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.

Incremental Default Risk

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 subsequent to default of an issuer. 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 report, 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 calculated 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, net stressed current exposure was calculated net of any stressed credit valuation adjustment (CVA) losses and any gains from CVA hedges not included in the calculation of trading gains or losses. 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 economic 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 counterpar-

ties were excluded when selecting the largest counterparty.

PPNR

PPNR is the sum of net interest income (interest income minus interest expense) plus noninterest income less noninterest expense, including losses from operational risk events and OREO expenses. PPNR does not include provisions for credit losses on loans or losses from other than temporary impairments on securities.

Core components of PPNR

Core components of PPNR are forecast separately, using autoregressive models, aggregate models, simple nonparametric models, or structural models.

Significant efforts are made to eliminate or minimize potential double-counting of losses. For example, in estimating certain components of PPNR, historical data series are adjusted, where appropriate, to exclude losses from operational-risk events and OREO expenses, which are modeled separately, as described below. In addition, the modeling approach for trading revenue (described below) limits the influence of severe market events captured in the global market shock. Finally, PPNR projections do not include debt valuation adjustments (DVA), which is not included in regulatory capital.

When choosing the level of detail at which to model the components of PPNR, consideration is given both to BHCs' business models and the ability to model the individual income or expense component accurately. Separate models are estimated for 22 different components of PPNR:

- The seven 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, subordinated debt, and all other interest expenses.

- The seven components of noninterest income include trading revenue and six components of noninterest, non-trading income: service charges on deposits, fiduciary income, income from insurance, investment banking fees, net servicing fees, and all other noninterest income.
- Finally, three components of noninterest expense include compensation expense, fixed asset expense, and all other noninterest expense (excluding losses from operational-risk events or OREO expenses).

Each model generates projections of the PPNR component scaled by a relevant asset or liability balance (e.g., interest income on Treasury securities as a ratio of the book value of Treasury securities). The ratio forecast is then multiplied by the firm's projected asset or liability balance to generate a projection of the dollars of PPNR for that component.

The types of models used to forecast various components of PPNR include

- autoregressive models that relate the components of a BHC's revenues and non-provision-related expenses, expressed as a share of relevant asset or liability balances, to BHC characteristics and to macroeconomic variables;
- aggregate models in which the revenue or expense is allocated to each BHC based on a measure of the BHC's market share;
- simple nonparametric models based on recent firm-level performance; and
- structural models that use granular data on individual positions.

The specific macroeconomic variables included in the models differ across equations based on statistical predictive power and economic theory. Macroeconomic variables used to project interest income and interest expense include yields on short- and long-term Treasury securities, and corporate bond spreads. Noninterest non-trading income and noninterest expense are projected as a function of GDP growth, stock market volatility, stock returns, and home price growth.

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, as a function of stock market returns and changes in stock market volatility, and then allocated

to each BHC based on a measure of the BHC's market share. Net trading revenue is modeled using a median regression approach to lessen the influence of extreme movements in trading revenue, and, thereby, to avoid double-counting of trading losses that are captured under the global market shock. Trading revenues for the remaining BHCs are modeled as a function of corporate bond yields and long-term Treasury yields, in an autoregressive framework similar to that of other PPNR components.

Some noninterest income and noninterest expense components are highly volatile quarter-to-quarter but do not exhibit a clear cyclical pattern. As a result, these components are modeled as a constant forecast ratio to reflect median performance over the past eight quarters.

The estimate of interest expenses on subordinated debt is based on security-level information and takes into account differences in the maturity schedule and debt pricing across firms. The estimate also reflects yields on short-term and long-term Treasury securities, and corporate bond spreads under various scenarios.

An enhanced modeling approach for projecting certain components of PPNR was used for the first time in DFAST 2017 (discussed in greater detail in [box 2](#)). The enhanced autoregressive models follow the same framework as the models used in DFAST 2016, but employ a different assumption about what firm revenues and expenses converge towards over time. Specifically, in the enhanced models, projections for PPNR components (expressed as a share of a relevant asset or liability balance) converge over time towards the BHC's own post-crisis performance for that revenue or expense category while still varying in response to changes in macro conditions. The post-crisis period in this context is defined as the time period from 2009:Q4 onwards. In contrast, in the DFAST 2016 PPNR models, BHC projections for some models are generally assumed to converge towards industry average performance or the average performance of a class of firms. The enhanced models also feature updates to the set of macroeconomic variables and controls used in the model specifications.

The enhanced models perform better according to a number of key metrics. They better capture differences in business models across BHCs, produce projections which are more sensitive to economic conditions, and have improved in-sample and out-of-

sample forecasting performance compared to the models used in DFAST 2016. The enhanced models are also less sensitive to the most recent value of the BHC's revenues and expenses, improving the stability of model projections over time.

For DFAST 2017, PPNR projections are calculated as the arithmetic average of the projection from the models used in DFAST 2016 and the enhanced models, consistent with the Federal Reserve's policy of phasing in the most material model enhancements over two stress test cycles to smooth the effect on post-stress capital ratios.⁵⁸

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, computer system failures, process errors, and lawsuits by employees, customers or other parties. Operational-risk loss estimates include the average of loss estimates from two modeling approaches and estimates of potential costs from unfavorable litigation outcomes.

Both modeling approaches—a historical simulation approach and a regression model—project operational losses for the 34 BHCs and are based on historical operational-loss data submitted by the BHCs on the FR Y-14A/Q reports.

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. Losses are modeled for each BHC and each of the seven operational-risk categories identified in the Board's advanced approaches rule.⁵⁹ The historical simulation approach models the loss frequency and loss severity separately. The tails of the loss severity and frequency distributions are informed by

⁵⁸ For more information on the Federal Reserve's policy regarding material model changes, see Daniel K. Tarullo (2016), "Next Steps in the Evolution of Stress Testing," speech delivered at the Yale University School of Management Leaders Forum, New Haven, CT, September 26. Projections of the components of PPNR in DFAST 2018 will reflect the enhanced models only.

⁵⁹ 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).

historical industry loss severity and frequency scaled to the assets of individual BHCs, while the bodies of these distributions are informed by each BHC's historical loss severity and frequency. The distribution of aggregate losses is then simulated by repeatedly drawing the 9-quarter event frequency from this frequency distribution, and the severity of those events from the severity distribution. 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 to the frequency of all recessions for the adverse scenario. Loss forecasts for an individual BHC are the sum of the BHC's loss estimates for each event type.

The regression model is a two-step model. The first step projects the industry aggregate operational losses conditional on macroeconomic factors over the nine-quarter horizon.⁶⁰ A regression approach is used to model industry operational losses as a function of macroeconomic variables, including measures of economic activity, financial conditions, and interest rate environment, and to produce industry aggregate projected losses for each of the different scenarios. Finally, the second step estimates weights to distribute industry losses to individual BHCs based on each BHC's size.

Mortgage Repurchase Losses

Mortgage repurchase losses are credit losses incurred relating to breaches of representations and warranties on mortgage loans sold to investors (GSEs, private-label security investors, or whole loan buyers). Mortgage repurchase risk has declined in recent years due to improvements in underwriting standards and settlements relating to representations and warranties for pre-crisis vintages. Furthermore, new data from recent mortgage repurchase settlements has allowed the operational risk model to better incorporate mortgage repurchase risk, reducing the need for a separate mortgage repurchase model.

As a result, the separate mortgage repurchase model used in DFAST 2016 has now been retired.

⁶⁰ Losses are aggregated for six of the seven operational-risk categories. Operational-risk losses due to damage to physical assets are the exception. These losses are not expected to be dependent on the macroeconomic environment and therefore are modelled separately only as a function of size, but not of macroeconomic variables.

Balance-Sheet Items and Risk-Weighted Assets

The size of each BHC's 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 calculated using aggregate data from the Federal Reserve's Financial Accounts of the United States (Z.1) and the Bureau of Economic Analysis.

Industry loan and asset growth rates are projected over the planning horizon using the macroeconomic variables prescribed in the supervisory scenario. The growth rates embed the assumption that the industry will continue to lend using standards that are consistent with long-run behavior. This tends to raise the projected growth of lending by removing the effects of BHC tightening that often occur in stressful periods. 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, 2017, 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.⁶¹ The first part requires estimating the path of credit RWAs based on exposures from loans and securities.⁶² The second requires estimating the path of MRWA based on exposures under the market risk rule.⁶³

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.

⁶¹ 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).

⁶² 12 CFR part 217, subpart D.

⁶³ 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 calculations of regulatory capital for each BHC under the supervisory scenarios. Regulatory capital is calculated using the definitions of capital in the Board's Regulation Q.⁶⁴ Regulatory capital is calculated consistent with the requirements that will be in effect during the projected quarter of the planning horizon.⁶⁵ The definition of regulatory capital changes throughout the planning horizon in accordance with the transition arrangements in the revised regulatory capital framework.⁶⁶

Regulatory capital is calculated incorporating estimates of net income and taxable income based on supervisory projections of total losses and revenues. After-tax net income is calculated by applying a consistent tax rate to taxable income for all BHCs.⁶⁷ The consistent tax rate is also used to generate projections of 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 calculated 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 adjusts for income attributable to minority interests.

For DFAST 2017, 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.⁶⁸

⁶⁴ See 12 CFR part 217.

⁶⁵ See 12 CFR 225.8(e)(2)(i)(A) and 12 CFR 252.56(a)(2).

⁶⁶ See 12 CFR part 217, subpart G.

⁶⁷ 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, box 2.

⁶⁸ The Federal Reserve used the following capital action assumptions in projecting post-stress capital levels and ratios: (1) for the first quarter of 2017, each company's actual capital actions as of the end of that quarter; and (2) for each quarter from the second quarter of 2017 through the first quarter of 2019, each

Projected regulatory capital levels are calculated using the applicable revised capital framework 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 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, total assets and off-balance sheet exposures for the supplementary leverage ratio, and RWAs to calculate regulatory capital ratios. The risk-based regulatory capital ratios use risk-weighted assets calculated under the standardized approach.⁶⁹ Risk-weighted assets and on-balance sheet total assets for the leverage ratio are projected based on supervisory projections of each firm's balance sheet. Off-balance sheet items are projected based on the

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 2016 through the first quarter of 2017) plus common stock dividends attributable to issuances related to expensed employee compensation or in connection with a planned merger or acquisition to the extent that the merger or acquisition is reflected in the 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).

⁶⁹ See 12 CFR part 217.

bank-reported off-balance sheet SLR exposure and are assumed to grow at the supervisory model-projected total asset growth rate. 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 capi-

tal requirements. Projected capital levels and ratios are not adjusted to account for any differences between projected and actual performance of the BHCs observed at the time the supervisory stress test results were being produced in the second quarter of 2017.

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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.4	6.5	6.5
Tier 1 capital ratio	10.9	8.1	8.1
Total capital ratio	12.6	10.1	10.1
Tier 1 leverage ratio	9.5	7.0	7.0
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	6.5	5.2
First-lien mortgages, domestic	0.2	2.4
Junior liens and HELOCs, domestic	0.1	6.3
Commercial and industrial ²	2.0	4.3
Commercial real estate, domestic	0.1	2.2
Credit cards	0.0	0.0
Other consumer ³	4.1	6.6
Other loans ⁴	0.0	7.5

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	138.5	150.1

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	5.1	3.0
Other revenue ³	0.0	
<i>less</i>		
Provisions	7.7	
Realized losses/gains on securities (AFS/HTM)	0.5	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-3.1	-1.8
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.4	8.6	8.4
Tier 1 capital ratio	10.9	10.2	10.1
Total capital ratio	12.6	12.1	12.0
Tier 1 leverage ratio	9.5	8.8	8.8
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	4.5	3.6
First-lien mortgages, domestic	0.1	1.4
Junior liens and HELOCs, domestic	0.1	4.0
Commercial and industrial ²	1.4	2.9
Commercial real estate, domestic	0.0	1.2
Credit cards	0.0	0.0
Other consumer ³	2.9	4.6
Other loans ⁴	0.0	4.6

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	138.5	155.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	6.3	3.6
Other revenue ³	0.0	
<i>less</i>		
Provisions	5.3	
Realized losses/gains on securities (AFS/HTM)	0.3	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	0.6	0.4
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	10.8	10.6
Tier 1 capital ratio	13.5	11.9	11.7
Total capital ratio	15.2	13.6	13.4
Tier 1 leverage ratio	11.6	10.3	10.3
Supplementary leverage ratio	n/a	8.9	8.9

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	10.9	9.1
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial ²	4.2	10.2
Commercial real estate, domestic	0.0	0.0
Credit cards	6.7	8.6
Other consumer ³	0.0	0.0
Other loans ⁴	0.0	0.0

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	131.0	145.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	19.1	11.4
Other revenue ³	0.0	
<i>less</i>		
Provisions	14.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	4.8	2.9
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-2.6	-2.8

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	12.9	11.7
Tier 1 capital ratio	13.5	14.0	12.9
Total capital ratio	15.2	15.6	14.6
Tier 1 leverage ratio	11.6	11.9	11.0
Supplementary leverage ratio	n/a	10.2	9.8

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	8.3	6.9
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial ²	3.1	7.4
Commercial real estate, domestic	0.0	0.0
Credit cards	5.2	6.6
Other consumer ³	0.0	0.0
Other loans ⁴	0.0	0.0

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	131.0	147.3

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	20.5	12.0
Other revenue ³	0.0	
<i>less</i>		
Provisions	10.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	9.9	5.8
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-2.6	-2.8

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	13.1	9.1	9.1
Tier 1 capital ratio	13.4	9.5	9.5
Total capital ratio	15.3	11.6	11.6
Tier 1 leverage ratio	11.1	7.9	7.9
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	4.7	6.4
First-lien mortgages, domestic	0.2	2.3
Junior liens and HELOCs, domestic	0.1	3.9
Commercial and industrial ²	1.5	8.8
Commercial real estate, domestic	1.4	7.6
Credit cards	0.1	13.0
Other consumer ³	1.0	5.6
Other loans ⁴	0.4	6.6

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	80.1	87.2

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	2.4	2.2
Other revenue ³	0.0	
<i>less</i>		
Provisions	5.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-3.1	-2.8
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	13.1	11.8	11.8
Tier 1 capital ratio	13.4	12.3	12.3
Total capital ratio	15.3	14.3	14.3
Tier 1 leverage ratio	11.1	10.1	10.1
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.9	3.8
First-lien mortgages, domestic	0.1	1.2
Junior liens and HELOCs, domestic	0.1	2.2
Commercial and industrial ²	1.0	5.7
Commercial real estate, domestic	0.7	3.9
Credit cards	0.0	10.3
Other consumer ³	0.6	3.5
Other loans ⁴	0.3	4.4

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	80.1	90.1

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	3.1	2.8
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.2	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-0.1	-0.1
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.1	8.9	8.9
Tier 1 capital ratio	13.6	10.5	10.5
Total capital ratio	16.3	13.2	13.2
Tier 1 leverage ratio	8.9	6.8	6.8
Supplementary leverage ratio	n/a	5.4	5.4

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.
n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	45.0	4.6
First-lien mortgages, domestic	4.1	2.1
Junior liens and HELOCs, domestic	3.5	5.1
Commercial and industrial ²	12.1	4.7
Commercial real estate, domestic	5.9	8.0
Credit cards	11.7	12.2
Other consumer ³	1.9	2.2
Other loans ⁴	5.7	3.0

¹ 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.
² Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.
³ Other consumer loans include student loans and automobile loans.
⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	1,399.5	1,505.5

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	40.2	1.7
Other revenue ³	0.8	
<i>less</i>		
Provisions	48.2	
Realized losses/gains on securities (AFS/HTM)	0.9	
Trading and counterparty losses ⁴	15.7	
Other losses/gains ⁵	2.7	
<i>equals</i>		
Net income before taxes	-26.4	-1.1
Memo items		
Other comprehensive income ⁶	4.5	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-4.5	-1.9

¹ Average assets is the nine-quarter average of total assets.
² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.
³ Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.
⁴ 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.
⁵ 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.
⁶ Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.
⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.1	11.1	10.6
Tier 1 capital ratio	13.6	12.7	12.2
Total capital ratio	16.3	14.8	14.7
Tier 1 leverage ratio	8.9	8.2	8.0
Supplementary leverage ratio	n/a	6.5	6.3

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	29.1	3.0
First-lien mortgages, domestic	2.1	1.0
Junior liens and HELOCs, domestic	2.2	3.1
Commercial and industrial ²	7.9	3.0
Commercial real estate, domestic	2.8	3.8
Credit cards	9.2	9.4
Other consumer ³	1.3	1.6
Other loans ⁴	3.6	1.9

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	1,399.5	1,560.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	61.5	2.6
Other revenue ³	0.8	
<i>less</i>		
Provisions	28.1	
Realized losses/gains on securities (AFS/HTM)	0.6	
Trading and counterparty losses ⁴	9.7	
Other losses/gains ⁵	2.3	
<i>equals</i>		
Net income before taxes	21.6	0.9
Memo items		
Other comprehensive income ⁶	-1.9	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-4.5	-8.3

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	12.8	11.2
Tier 1 capital ratio	14.5	15.0	13.4
Total capital ratio	15.2	15.6	14.1
Tier 1 leverage ratio	6.6	6.7	6.0
Supplementary leverage ratio	n/a	6.1	5.5

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.
n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	1.7	2.5
First-lien mortgages, domestic	0.2	2.2
Junior liens and HELOCs, domestic	0.0	5.0
Commercial and industrial ²	0.1	3.4
Commercial real estate, domestic	0.3	7.9
Credit cards	0.0	0.0
Other consumer ³	0.3	9.3
Other loans ⁴	0.8	1.6

¹ 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.
² Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.
³ Other consumer loans include student loans and automobile loans.
⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	147.7	158.4

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	10.2	2.9
Other revenue ³	0.0	
<i>less</i>		
Provisions	2.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.4	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	7.7	2.2
Memo items		
Other comprehensive income ⁶	0.4	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-3.2	-3.4

¹ Average assets is the nine-quarter average of total assets.
² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.
³ Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.
⁴ 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.
⁵ 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.
⁶ Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.
⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	13.3	11.0
Tier 1 capital ratio	14.5	15.4	13.3
Total capital ratio	15.2	16.0	13.8
Tier 1 leverage ratio	6.6	6.8	6.0
Supplementary leverage ratio	n/a	6.2	5.6

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	1.1	1.6
First-lien mortgages, domestic	0.1	1.4
Junior liens and HELOCs, domestic	0.0	3.6
Commercial and industrial ²	0.1	2.2
Commercial real estate, domestic	0.1	3.7
Credit cards	0.0	0.0
Other consumer ³	0.2	7.3
Other loans ⁴	0.5	1.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	147.7	162.8

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	13.0	3.6
Other revenue ³	0.0	
<i>less</i>		
Provisions	1.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.2	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	11.5	3.2
Memo items		
Other comprehensive income ⁶	-0.7	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-3.2	-4.4

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.2	7.9	7.9
Tier 1 capital ratio	12.0	9.5	9.5
Total capital ratio	14.1	11.7	11.7
Tier 1 leverage ratio	10.0	7.9	7.9
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	7.1	4.7
First-lien mortgages, domestic	0.8	2.5
Junior liens and HELOCs, domestic	0.3	3.2
Commercial and industrial ²	1.5	5.2
Commercial real estate, domestic	2.3	6.0
Credit cards	0.3	13.2
Other consumer ³	1.3	6.3
Other loans ⁴	0.6	3.4

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	176.1	192.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	7.9	3.4
Other revenue ³	0.0	
<i>less</i>		
Provisions	8.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-0.2	-0.1
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.2	9.5	9.4
Tier 1 capital ratio	12.0	11.0	11.0
Total capital ratio	14.1	12.8	12.8
Tier 1 leverage ratio	10.0	9.1	9.1
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	4.4	2.9
First-lien mortgages, domestic	0.5	1.5
Junior liens and HELOCs, domestic	0.2	2.1
Commercial and industrial ²	1.0	3.7
Commercial real estate, domestic	1.2	3.0
Credit cards	0.2	10.0
Other consumer ³	0.9	4.3
Other loans ⁴	0.4	2.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	176.1	197.4

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	10.0	4.2
Other revenue ³	0.0	
<i>less</i>		
Provisions	4.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	5.2	2.2
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.5	7.7	7.7
Tier 1 capital ratio	11.9	8.0	8.0
Total capital ratio	14.3	10.5	10.5
Tier 1 leverage ratio	9.5	6.3	6.3
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.7	5.9
First-lien mortgages, domestic	0.4	2.9
Junior liens and HELOCs, domestic	0.1	4.8
Commercial and industrial ²	1.4	7.1
Commercial real estate, domestic	1.1	8.2
Credit cards	0.1	16.9
Other consumer ³	0.3	7.0
Other loans ⁴	0.2	2.5

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	66.7	71.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	1.6	1.8
Other revenue ³	0.0	
<i>less</i>		
Provisions	4.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-2.4	-2.6
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.5	10.1	10.1
Tier 1 capital ratio	11.9	10.4	10.4
Total capital ratio	14.3	12.7	12.7
Tier 1 leverage ratio	9.5	8.1	8.1
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.3	3.6
First-lien mortgages, domestic	0.2	1.6
Junior liens and HELOCs, domestic	0.1	3.3
Commercial and industrial ²	0.9	4.9
Commercial real estate, domestic	0.6	4.0
Credit cards	0.1	13.4
Other consumer ³	0.3	5.4
Other loans ⁴	0.1	1.7

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	66.7	73.6

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	2.3	2.4
Other revenue ³	0.0	
<i>less</i>		
Provisions	2.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	0.0	0.0
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.5	8.0	8.0
Tier 1 capital ratio	12.8	8.7	8.7
Total capital ratio	15.7	11.7	11.7
Tier 1 leverage ratio	9.5	6.4	6.4
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	4.0	5.7
First-lien mortgages, domestic	0.2	3.2
Junior liens and HELOCs, domestic	0.4	10.4
Commercial and industrial ²	1.7	5.9
Commercial real estate, domestic	0.7	7.9
Credit cards	0.1	11.7
Other consumer ³	0.1	2.4
Other loans ⁴	0.7	4.9

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	93.3	99.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	1.7	1.3
Other revenue ³	0.0	
<i>less</i>		
Provisions	4.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-2.6	-2.0
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.5	10.4	10.4
Tier 1 capital ratio	12.8	11.0	11.0
Total capital ratio	15.7	13.6	13.6
Tier 1 leverage ratio	9.5	8.0	8.0
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.6	3.7
First-lien mortgages, domestic	0.2	2.1
Junior liens and HELOCs, domestic	0.3	8.6
Commercial and industrial ²	1.1	3.9
Commercial real estate, domestic	0.4	3.9
Credit cards	0.0	9.0
Other consumer ³	0.1	1.7
Other loans ⁴	0.5	3.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	93.3	103.4

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	2.7	1.9
Other revenue ³	0.0	
<i>less</i>		
Provisions	2.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-0.1	0.0
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.1	7.0	7.0
Tier 1 capital ratio	11.6	8.4	8.4
Total capital ratio	14.3	11.6	10.9
Tier 1 leverage ratio	9.9	7.3	7.3
Supplementary leverage ratio	n/a	6.3	6.3

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	31.7	12.2
First-lien mortgages, domestic	0.2	1.1
Junior liens and HELOCs, domestic	0.1	7.0
Commercial and industrial ²	3.1	10.2
Commercial real estate, domestic	1.6	5.3
Credit cards	21.7	20.3
Other consumer ³	4.1	8.1
Other loans ⁴	0.8	4.3

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	285.8	319.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	29.6	7.8
Other revenue ³	0.0	
<i>less</i>		
Provisions	35.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.1	
<i>equals</i>		
Net income before taxes	-5.9	-1.6
Memo items		
Other comprehensive income ⁶	-0.3	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.6	-1.2

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.1	9.2	8.6
Tier 1 capital ratio	11.6	10.5	10.0
Total capital ratio	14.3	13.6	12.4
Tier 1 leverage ratio	9.9	8.9	8.7
Supplementary leverage ratio	n/a	7.7	7.5

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	24.3	9.2
First-lien mortgages, domestic	0.2	0.8
Junior liens and HELOCs, domestic	0.1	5.5
Commercial and industrial ²	2.2	7.1
Commercial real estate, domestic	0.8	2.4
Credit cards	17.6	16.2
Other consumer ³	2.9	5.8
Other loans ⁴	0.5	2.5

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	285.8	323.8

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	32.6	8.5
Other revenue ³	0.0	
<i>less</i>		
Provisions	26.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.1	
<i>equals</i>		
Net income before taxes	6.1	1.6
Memo items		
Other comprehensive income ⁶	-0.8	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.6	-1.7

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.10.A. CIT 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.0	14.5	12.9
Tier 1 capital ratio	14.0	14.5	12.9
Total capital ratio	14.8	15.8	14.0
Tier 1 leverage ratio	13.9	11.9	11.9
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.6	8.6
First-lien mortgages, domestic	0.1	1.3
Junior liens and HELOCs, domestic	0.0	2.6
Commercial and industrial ²	1.4	10.3
Commercial real estate, domestic	0.7	10.9
Credit cards	0.0	0.0
Other consumer ³	0.0	12.9
Other loans ⁴	0.4	11.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	64.6	48.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	1.6	2.7
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.4	
<i>equals</i>		
Net income before taxes	-1.9	-3.3
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.1	-0.1

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.10.B. CIT 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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.0	16.9	13.3
Tier 1 capital ratio	14.0	16.9	13.3
Total capital ratio	14.8	18.1	14.2
Tier 1 leverage ratio	13.9	13.9	13.2
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	1.6	5.2
First-lien mortgages, domestic	0.0	0.6
Junior liens and HELOCs, domestic	0.0	1.9
Commercial and industrial ²	1.0	7.0
Commercial real estate, domestic	0.3	5.0
Credit cards	0.0	0.0
Other consumer ³	0.0	10.2
Other loans ⁴	0.3	7.4

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	64.6	50.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	1.9	3.2
Other revenue ³	0.0	
<i>less</i>		
Provisions	1.8	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.4	
<i>equals</i>		
Net income before taxes	-0.4	-0.6
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.1	-0.1

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.11.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.9	10.8	9.7
Tier 1 capital ratio	15.8	12.3	11.3
Total capital ratio	19.1	15.4	14.5
Tier 1 leverage ratio	10.1	7.8	7.3
Supplementary leverage ratio	n/a	5.9	5.5

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	44.5	6.8
First-lien mortgages, domestic	2.1	2.6
Junior liens and HELOCs, domestic	1.4	6.9
Commercial and industrial ²	8.1	5.1
Commercial real estate, domestic	1.3	7.8
Credit cards	21.4	13.7
Other consumer ³	3.5	12.1
Other loans ⁴	6.8	3.5

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	1,126.3	1,220.3

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	49.0	2.6
Other revenue ³	0.1	
<i>less</i>		
Provisions	47.6	
Realized losses/gains on securities (AFS/HTM)	1.1	
Trading and counterparty losses ⁴	8.3	
Other losses/gains ⁵	2.1	
<i>equals</i>		
Net income before taxes	-9.9	-0.5
Memo items		
Other comprehensive income ⁶	0.8	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-29.4	-31.1

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.11.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.9	12.6	11.4
Tier 1 capital ratio	15.8	14.1	13.0
Total capital ratio	19.1	16.9	16.1
Tier 1 leverage ratio	10.1	9.0	8.3
Supplementary leverage ratio	n/a	6.7	6.3

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	32.7	4.9
First-lien mortgages, domestic	1.1	1.3
Junior liens and HELOCs, domestic	0.8	3.8
Commercial and industrial ²	5.9	3.7
Commercial real estate, domestic	0.6	3.5
Credit cards	17.0	10.8
Other consumer ³	2.9	9.9
Other loans ⁴	4.4	2.2

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	1,126.3	1,263.8

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	63.3	3.3
Other revenue ³	0.1	
<i>less</i>		
Provisions	32.5	
Realized losses/gains on securities (AFS/HTM)	0.6	
Trading and counterparty losses ⁴	5.6	
Other losses/gains ⁵	1.9	
<i>equals</i>		
Net income before taxes	22.8	1.2
Memo items		
Other comprehensive income ⁶	-2.8	
<i>Other effects on capital</i>	Actual 2016:Q4	2019:Q1
AOCI included in capital (billions of dollars) ⁷	-29.4	-34.6

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.12.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.2	7.7	7.7
Tier 1 capital ratio	11.4	7.8	7.8
Total capital ratio	14.0	10.4	10.4
Tier 1 leverage ratio	9.9	6.8	6.8
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	5.4	4.8
First-lien mortgages, domestic	0.2	1.2
Junior liens and HELOCs, domestic	0.7	4.5
Commercial and industrial ²	1.8	5.5
Commercial real estate, domestic	1.1	7.9
Credit cards	0.2	11.9
Other consumer ³	1.1	4.9
Other loans ⁴	0.3	3.3

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	123.9	133.5

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	3.2	2.0
Other revenue ³	0.0	
<i>less</i>		
Provisions	6.2	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-3.1	-2.0
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.12.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.2	9.7	9.7
Tier 1 capital ratio	11.4	9.9	9.9
Total capital ratio	14.0	12.3	12.3
Tier 1 leverage ratio	9.9	8.4	8.4
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.6	3.1
First-lien mortgages, domestic	0.1	0.6
Junior liens and HELOCs, domestic	0.5	3.2
Commercial and industrial ²	1.2	3.5
Commercial real estate, domestic	0.6	3.9
Credit cards	0.1	9.3
Other consumer ³	0.9	3.9
Other loans ⁴	0.2	2.0

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	123.9	137.4

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	4.3	2.7
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.9	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	0.3	0.2
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.13.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	9.4	9.4
Tier 1 capital ratio	11.1	9.4	9.4
Total capital ratio	13.3	11.0	11.0
Tier 1 leverage ratio	10.2	8.5	8.5
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.2	4.2
First-lien mortgages, domestic	0.0	2.2
Junior liens and HELOCs, domestic	0.1	3.1
Commercial and industrial ²	1.0	3.5
Commercial real estate, domestic	0.7	6.0
Credit cards	0.0	0.0
Other consumer ³	0.1	8.4
Other loans ⁴	0.3	4.8

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	68.0	72.9

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	1.6	2.1
Other revenue ³	0.0	
<i>less</i>		
Provisions	2.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-0.4	-0.5
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.13.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	10.7	10.7
Tier 1 capital ratio	11.1	10.7	10.7
Total capital ratio	13.3	12.1	12.1
Tier 1 leverage ratio	10.2	9.5	9.5
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	1.3	2.5
First-lien mortgages, domestic	0.0	1.2
Junior liens and HELOCs, domestic	0.0	1.7
Commercial and industrial ²	0.6	2.3
Commercial real estate, domestic	0.3	2.8
Credit cards	0.0	0.0
Other consumer ³	0.0	7.1
Other loans ⁴	0.2	2.9

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	68.0	74.9

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	2.2	2.8
Other revenue ³	0.0	
<i>less</i>		
Provisions	0.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	1.3	1.6
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.14.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	64.4	60.2	60.2
Tier 1 capital ratio	64.4	60.2	60.2
Total capital ratio	64.7	61.2	61.2
Tier 1 leverage ratio	14.6	13.5	13.5
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	0.5	3.7
First-lien mortgages, domestic	0.1	2.2
Junior liens and HELOCs, domestic	0.0	4.7
Commercial and industrial ²	0.1	4.9
Commercial real estate, domestic	0.2	7.4
Credit cards	0.0	0.0
Other consumer ³	0.0	3.7
Other loans ⁴	0.1	1.8

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	12.1	13.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	0.7	1.3
Other revenue ³	0.0	
<i>less</i>		
Provisions	0.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	0.2	0.3
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.14.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	64.4	60.7	60.7
Tier 1 capital ratio	64.4	60.7	60.7
Total capital ratio	64.7	61.3	61.3
Tier 1 leverage ratio	14.6	13.4	13.4
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	0.3	2.2
First-lien mortgages, domestic	0.1	1.5
Junior liens and HELOCs, domestic	0.0	3.4
Commercial and industrial ²	0.1	3.4
Commercial real estate, domestic	0.1	3.3
Credit cards	0.0	0.0
Other consumer ³	0.0	3.0
Other loans ⁴	0.0	1.2

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	12.1	13.3

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	0.9	1.5
Other revenue ³	0.0	
<i>less</i>		
Provisions	0.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	0.5	0.9
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.15.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	13.2	10.8	10.4
Tier 1 capital ratio	13.9	11.4	11.0
Total capital ratio	15.5	12.8	12.4
Tier 1 leverage ratio	12.3	10.1	10.0
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	10.5	13.0
First-lien mortgages, domestic	0.0	2.7
Junior liens and HELOCs, domestic	0.0	9.4
Commercial and industrial ²	0.0	13.8
Commercial real estate, domestic	0.0	15.5
Credit cards	8.7	13.5
Other consumer ³	1.8	11.0
Other loans ⁴	0.0	5.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	80.1	87.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	13.1	13.5
Other revenue ³	0.0	
<i>less</i>		
Provisions	12.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	0.6	0.6
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.15.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	13.2	13.0	12.0
Tier 1 capital ratio	13.9	13.6	12.7
Total capital ratio	15.5	15.0	14.2
Tier 1 leverage ratio	12.3	11.8	11.4
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	8.3	10.2
First-lien mortgages, domestic	0.0	1.7
Junior liens and HELOCs, domestic	0.0	7.6
Commercial and industrial ²	0.0	10.3
Commercial real estate, domestic	0.0	7.0
Credit cards	6.8	10.5
Other consumer ³	1.5	9.3
Other loans ⁴	0.0	3.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	80.1	89.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	13.9	14.0
Other revenue ³	0.0	
<i>less</i>		
Provisions	10.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	3.9	3.9
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.16.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.4	8.0	8.0
Tier 1 capital ratio	11.5	9.0	9.0
Total capital ratio	15.0	12.0	12.0
Tier 1 leverage ratio	9.9	7.7	7.7
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	5.4	5.6
First-lien mortgages, domestic	0.5	3.2
Junior liens and HELOCs, domestic	0.4	4.9
Commercial and industrial ²	2.0	5.5
Commercial real estate, domestic	1.4	11.8
Credit cards	0.4	16.6
Other consumer ³	0.4	3.7
Other loans ⁴	0.4	3.4

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	119.6	130.2

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	4.3	2.9
Other revenue ³	0.0	
<i>less</i>		
Provisions	5.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.1	
<i>equals</i>		
Net income before taxes	-1.4	-0.9
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.16.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.4	9.9	9.8
Tier 1 capital ratio	11.5	10.8	10.8
Total capital ratio	15.0	13.4	13.4
Tier 1 leverage ratio	9.9	9.2	9.2
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.4	3.5
First-lien mortgages, domestic	0.4	2.3
Junior liens and HELOCs, domestic	0.3	3.7
Commercial and industrial ²	1.3	3.5
Commercial real estate, domestic	0.7	5.6
Credit cards	0.3	12.2
Other consumer ³	0.3	2.7
Other loans ⁴	0.2	2.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	119.6	133.5

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	5.8	3.8
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.2	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.1	
<i>equals</i>		
Net income before taxes	2.5	1.7
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.17.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.5	9.4	8.4
Tier 1 capital ratio	16.6	11.4	10.2
Total capital ratio	19.8	14.3	13.3
Tier 1 leverage ratio	9.4	6.3	5.9
Supplementary leverage ratio	n/a	4.3	4.1

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	6.2	8.1
First-lien mortgages, domestic	1.3	52.3
Junior liens and HELOCs, domestic	0.0	4.5
Commercial and industrial ²	2.1	11.1
Commercial real estate, domestic	0.3	8.9
Credit cards	0.0	0.0
Other consumer ³	0.1	5.5
Other loans ⁴	2.3	4.7

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	496.7	523.5

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	6.0	0.7
Other revenue ³	0.0	
<i>less</i>		
Provisions	6.8	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	18.4	
Other losses/gains ⁵	3.7	
<i>equals</i>		
Net income before taxes	-22.8	-2.5
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-1.1	-1.2

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.17.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.5	11.5	11.4
Tier 1 capital ratio	16.6	13.4	13.3
Total capital ratio	19.8	16.2	16.1
Tier 1 leverage ratio	9.4	7.4	7.4
Supplementary leverage ratio	n/a	5.1	5.1

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	4.4	5.7
First-lien mortgages, domestic	1.3	49.8
Junior liens and HELOCs, domestic	0.0	3.2
Commercial and industrial ²	1.3	7.0
Commercial real estate, domestic	0.2	4.0
Credit cards	0.0	0.0
Other consumer ³	0.1	4.4
Other loans ⁴	1.6	3.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	496.7	546.1

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	10.1	1.1
Other revenue ³	0.0	
<i>less</i>		
Provisions	4.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	9.7	
Other losses/gains ⁵	2.7	
<i>equals</i>		
Net income before taxes	-7.1	-0.8
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-1.1	-1.2

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.18.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	17.9	12.9	12.9
Tier 1 capital ratio	20.1	15.6	15.6
Total capital ratio	25.3	19.3	19.3
Tier 1 leverage ratio	9.6	7.1	7.1
Supplementary leverage ratio	n/a	5.4	5.4

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.9	5.3
First-lien mortgages, domestic	0.3	1.5
Junior liens and HELOCs, domestic	0.1	3.7
Commercial and industrial ²	2.4	7.6
Commercial real estate, domestic	0.7	5.9
Credit cards	0.1	13.5
Other consumer ³	0.0	7.0
Other loans ⁴	0.4	3.9

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	139.9	143.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	-1.4	-0.5
Other revenue ³	0.8	
<i>less</i>		
Provisions	4.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.6	
<i>equals</i>		
Net income before taxes	-5.2	-1.8
Memo items		
Other comprehensive income ⁶	1.8	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.7	0.7

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.18.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	17.9	13.4	13.4
Tier 1 capital ratio	20.1	16.0	16.0
Total capital ratio	25.3	19.2	19.2
Tier 1 leverage ratio	9.6	7.2	7.2
Supplementary leverage ratio	n/a	5.5	5.5

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.5	3.3
First-lien mortgages, domestic	0.1	0.6
Junior liens and HELOCs, domestic	0.0	2.3
Commercial and industrial ²	1.7	5.3
Commercial real estate, domestic	0.3	2.5
Credit cards	0.1	10.5
Other consumer ³	0.0	5.7
Other loans ⁴	0.3	2.4

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	139.9	148.6

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	0.6	0.2
Other revenue ³	0.8	
<i>less</i>		
Provisions	2.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.4	
<i>equals</i>		
Net income before taxes	-1.2	-0.4
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.7	-1.1

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.19.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.6	7.0	7.0
Tier 1 capital ratio	10.9	8.3	8.3
Total capital ratio	13.1	10.1	10.1
Tier 1 leverage ratio	8.7	6.6	6.6
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.2	4.6
First-lien mortgages, domestic	0.3	2.8
Junior liens and HELOCs, domestic	0.3	3.4
Commercial and industrial ²	1.0	4.8
Commercial real estate, domestic	0.8	7.0
Credit cards	0.1	13.5
Other consumer ³	0.6	4.2
Other loans ⁴	0.2	3.9

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	78.3	84.9

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	2.8	2.7
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.5	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-0.8	-0.8
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.19.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.6	8.6	8.6
Tier 1 capital ratio	10.9	9.9	9.9
Total capital ratio	13.1	11.4	11.4
Tier 1 leverage ratio	8.7	7.7	7.7
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.0	2.9
First-lien mortgages, domestic	0.2	1.7
Junior liens and HELOCs, domestic	0.2	2.4
Commercial and industrial ²	0.6	3.1
Commercial real estate, domestic	0.5	3.7
Credit cards	0.1	10.5
Other consumer ³	0.4	2.8
Other loans ⁴	0.1	2.4

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	78.3	86.8

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	3.6	3.3
Other revenue ³	0.0	
<i>less</i>		
Provisions	2.1	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	1.3	1.2
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.20.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.5	9.3	9.1
Tier 1 capital ratio	14.2	10.9	10.7
Total capital ratio	16.4	13.3	12.9
Tier 1 leverage ratio	8.4	6.4	6.4
Supplementary leverage ratio	n/a	5.0	5.0

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	54.0	5.7
First-lien mortgages, domestic	4.1	1.8
Junior liens and HELOCs, domestic	2.3	4.4
Commercial and industrial ²	15.9	9.7
Commercial real estate, domestic	4.3	3.8
Credit cards	15.7	11.5
Other consumer ³	3.2	4.3
Other loans ⁴	8.6	4.7

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	1,465.0	1,596.2

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	66.5	2.5
Other revenue ³	0.0	
<i>less</i>		
Provisions	58.8	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses ⁴	25.2	
Other losses/gains ⁵	0.6	
<i>equals</i>		
Net income before taxes	-18.3	-0.7
Memo items		
Other comprehensive income ⁶	-1.1	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.6	-2.2

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.20.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.5	11.1	10.7
Tier 1 capital ratio	14.2	12.6	12.3
Total capital ratio	16.4	14.6	14.3
Tier 1 leverage ratio	8.4	7.3	7.2
Supplementary leverage ratio	n/a	5.7	5.6

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	36.3	3.8
First-lien mortgages, domestic	2.0	0.9
Junior liens and HELOCs, domestic	1.4	2.7
Commercial and industrial ²	10.8	6.5
Commercial real estate, domestic	2.1	1.9
Credit cards	12.2	8.8
Other consumer ³	2.4	3.3
Other loans ⁴	5.4	2.9

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	1,465.0	1,637.3

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	85.9	3.2
Other revenue ³	0.0	
<i>less</i>		
Provisions	36.3	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses ⁴	12.4	
Other losses/gains ⁵	0.6	
<i>equals</i>		
Net income before taxes	36.5	1.4
Memo items		
Other comprehensive income ⁶	-4.2	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.6	-5.3

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.21.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.5	6.8	6.8
Tier 1 capital ratio	10.9	7.5	7.5
Total capital ratio	12.9	9.7	9.7
Tier 1 leverage ratio	9.9	6.8	6.8
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	5.4	5.9
First-lien mortgages, domestic	0.3	3.3
Junior liens and HELOCs, domestic	0.4	3.9
Commercial and industrial ²	2.0	6.0
Commercial real estate, domestic	1.8	9.8
Credit cards	0.1	12.8
Other consumer ³	0.5	6.9
Other loans ⁴	0.4	2.8

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	121.7	132.9

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	3.4	2.4
Other revenue ³	0.0	
<i>less</i>		
Provisions	6.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.1	
<i>equals</i>		
Net income before taxes	-2.8	-1.9
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.21.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.5	8.6	8.6
Tier 1 capital ratio	10.9	9.3	9.3
Total capital ratio	12.9	11.1	11.1
Tier 1 leverage ratio	9.9	8.4	8.4
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.3	3.6
First-lien mortgages, domestic	0.2	2.3
Junior liens and HELOCs, domestic	0.3	2.9
Commercial and industrial ²	1.2	3.7
Commercial real estate, domestic	0.9	4.8
Credit cards	0.1	10.0
Other consumer ³	0.4	5.5
Other loans ⁴	0.3	1.8

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	121.7	135.8

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	4.7	3.2
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.1	
<i>equals</i>		
Net income before taxes	0.9	0.6
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.22.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.7	7.9	7.9
Tier 1 capital ratio	11.9	9.0	9.0
Total capital ratio	14.1	11.0	11.0
Tier 1 leverage ratio	10.0	7.5	7.5
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	5.0	5.4
First-lien mortgages, domestic	1.0	4.2
Junior liens and HELOCs, domestic	0.3	4.3
Commercial and industrial ²	0.8	4.2
Commercial real estate, domestic	2.4	7.1
Credit cards	0.1	13.5
Other consumer ³	0.4	6.0
Other loans ⁴	0.2	3.6

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	101.4	110.1

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	4.7	3.6
Other revenue ³	0.0	
<i>less</i>		
Provisions	5.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.1	
<i>equals</i>		
Net income before taxes	-0.9	-0.7
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.22.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.7	9.6	9.5
Tier 1 capital ratio	11.9	10.7	10.6
Total capital ratio	14.1	12.3	12.3
Tier 1 leverage ratio	10.0	8.8	8.8
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.1	3.3
First-lien mortgages, domestic	0.7	3.0
Junior liens and HELOCs, domestic	0.2	3.2
Commercial and industrial ²	0.6	3.0
Commercial real estate, domestic	1.2	3.5
Credit cards	0.0	10.5
Other consumer ³	0.3	4.1
Other loans ⁴	0.1	2.2

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	101.4	112.2

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	5.6	4.2
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.2	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.1	
<i>equals</i>		
Net income before taxes	2.3	1.8
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.23.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	17.8	11.1	9.4
Tier 1 capital ratio	20.0	13.4	11.7
Total capital ratio	23.2	16.3	14.9
Tier 1 leverage ratio	8.4	5.5	4.9
Supplementary leverage ratio	n/a	4.2	3.8

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.6	3.2
First-lien mortgages, domestic	0.4	1.6
Junior liens and HELOCs, domestic	0.0	4.5
Commercial and industrial ²	1.2	10.4
Commercial real estate, domestic	0.5	5.0
Credit cards	0.0	0.0
Other consumer ³	0.1	0.6
Other loans ⁴	1.4	3.0

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	340.2	359.8

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	4.9	0.6
Other revenue ³	0.0	
<i>less</i>		
Provisions	4.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	9.5	
Other losses/gains ⁵	4.7	
<i>equals</i>		
Net income before taxes	-13.8	-1.6
Memo items		
Other comprehensive income ⁶	0.7	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-2.2	-1.9

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.23.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	17.8	13.9	13.2
Tier 1 capital ratio	20.0	16.1	15.6
Total capital ratio	23.2	18.8	18.5
Tier 1 leverage ratio	8.4	6.6	6.4
Supplementary leverage ratio	n/a	5.0	4.9

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.3	2.0
First-lien mortgages, domestic	0.2	0.9
Junior liens and HELOCs, domestic	0.0	3.2
Commercial and industrial ²	0.8	6.9
Commercial real estate, domestic	0.2	2.1
Credit cards	0.0	0.0
Other consumer ³	0.1	0.6
Other loans ⁴	0.9	1.9

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	340.2	372.8

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	9.4	1.1
Other revenue ³	0.0	
<i>less</i>		
Provisions	2.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	4.8	
Other losses/gains ⁵	3.7	
<i>equals</i>		
Net income before taxes	-1.9	-0.2
Memo items		
Other comprehensive income ⁶	-0.2	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-2.2	-2.8

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.24.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.8	12.5	12.5
Tier 1 capital ratio	14.8	12.5	12.5
Total capital ratio	16.4	14.1	14.1
Tier 1 leverage ratio	9.9	8.2	8.2
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.
n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.9	4.8
First-lien mortgages, domestic	0.6	1.9
Junior liens and HELOCs, domestic	0.1	3.4
Commercial and industrial ²	1.4	7.2
Commercial real estate, domestic	1.3	7.5
Credit cards	0.0	13.5
Other consumer ³	0.1	12.9
Other loans ⁴	0.3	3.5

¹ 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.
² Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.
³ Other consumer loans include student loans and automobile loans.
⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	99.9	107.9

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	2.8	1.8
Other revenue ³	0.0	
<i>less</i>		
Provisions	4.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.3	
<i>equals</i>		
Net income before taxes	-1.9	-1.2
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

¹ Average assets is the nine-quarter average of total assets.
² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.
³ Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.
⁴ 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.
⁵ 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.
⁶ Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.
⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.24.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.8	14.4	14.3
Tier 1 capital ratio	14.8	14.4	14.3
Total capital ratio	16.4	15.5	15.5
Tier 1 leverage ratio	9.9	9.4	9.4
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.1	2.6
First-lien mortgages, domestic	0.3	0.8
Junior liens and HELOCs, domestic	0.0	1.5
Commercial and industrial ²	0.9	4.5
Commercial real estate, domestic	0.6	3.5
Credit cards	0.0	10.5
Other consumer ³	0.1	10.2
Other loans ⁴	0.2	2.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	99.9	110.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	3.8	2.4
Other revenue ³	0.0	
<i>less</i>		
Provisions	2.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.3	
<i>equals</i>		
Net income before taxes	1.3	0.8
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.25.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.8	11.0	10.9
Tier 1 capital ratio	12.9	12.1	12.1
Total capital ratio	14.5	13.7	13.7
Tier 1 leverage ratio	8.0	7.4	7.4
Supplementary leverage ratio	n/a	6.2	6.2

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	1.5	4.4
First-lien mortgages, domestic	0.1	1.7
Junior liens and HELOCs, domestic	0.1	7.2
Commercial and industrial ²	0.3	4.2
Commercial real estate, domestic	0.3	7.3
Credit cards	0.0	0.0
Other consumer ³	0.0	13.8
Other loans ⁴	0.6	4.2

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	72.0	77.5

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	3.1	2.4
Other revenue ³	0.0	
<i>less</i>		
Provisions	1.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	1.2	0.9
Memo items		
Other comprehensive income ⁶	0.2	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.2	-0.2

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.25.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.8	11.8	11.4
Tier 1 capital ratio	12.9	12.9	12.5
Total capital ratio	14.5	14.2	14.1
Tier 1 leverage ratio	8.0	7.7	7.6
Supplementary leverage ratio	n/a	6.6	6.5

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	0.9	2.5
First-lien mortgages, domestic	0.1	0.9
Junior liens and HELOCs, domestic	0.1	4.7
Commercial and industrial ²	0.2	2.6
Commercial real estate, domestic	0.2	3.4
Credit cards	0.0	0.0
Other consumer ³	0.0	11.1
Other loans ⁴	0.4	2.6

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	72.0	79.5

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	3.9	2.9
Other revenue ³	0.0	
<i>less</i>		
Provisions	1.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	2.8	2.1
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.2	-0.4

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.26.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.6	8.3	8.0
Tier 1 capital ratio	12.0	9.5	9.3
Total capital ratio	14.3	11.4	11.4
Tier 1 leverage ratio	10.1	8.1	8.0
Supplementary leverage ratio	n/a	6.8	6.7

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.
n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	9.3	4.3
First-lien mortgages, domestic	0.4	1.7
Junior liens and HELOCs, domestic	0.4	2.0
Commercial and industrial ²	4.3	5.8
Commercial real estate, domestic	2.3	6.1
Credit cards	0.6	12.6
Other consumer ³	0.7	3.2
Other loans ⁴	0.6	1.8

¹ 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.
² Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.
³ Other consumer loans include student loans and automobile loans.
⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	300.5	329.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	12.2	3.2
Other revenue ³	0.0	
<i>less</i>		
Provisions	9.9	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.3	
<i>equals</i>		
Net income before taxes	1.9	0.5
Memo items		
Other comprehensive income ⁶	-0.5	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.4	-1.0

¹ Average assets is the nine-quarter average of total assets.
² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.
³ Other revenue includes one-time income and (expense) items not included in pre-provision net revenue.
⁴ 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.
⁵ 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.
⁶ Other comprehensive income (OCI) is only calculated for advanced approaches BHCs, and other BHCs that opt into the advanced approaches treatment of AOCI.
⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.26.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	10.6	9.5	9.0
Tier 1 capital ratio	12.0	10.6	10.2
Total capital ratio	14.3	12.2	12.1
Tier 1 leverage ratio	10.1	8.9	8.7
Supplementary leverage ratio	n/a	7.5	7.3

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	5.8	2.6
First-lien mortgages, domestic	0.2	0.9
Junior liens and HELOCs, domestic	0.2	1.1
Commercial and industrial ²	2.9	3.8
Commercial real estate, domestic	1.1	2.8
Credit cards	0.5	9.5
Other consumer ³	0.6	2.5
Other loans ⁴	0.4	1.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	300.5	339.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	15.7	4.0
Other revenue ³	0.0	
<i>less</i>		
Provisions	5.6	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.3	
<i>equals</i>		
Net income before taxes	9.7	2.5
Memo items		
Other comprehensive income ⁶	-1.3	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-0.4	-1.8

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.27.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.2	8.2	8.2
Tier 1 capital ratio	12.0	8.9	8.9
Total capital ratio	14.2	11.0	11.0
Tier 1 leverage ratio	10.2	7.5	7.5
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	5.1	6.1
First-lien mortgages, domestic	0.5	3.2
Junior liens and HELOCs, domestic	0.4	4.9
Commercial and industrial ²	1.7	7.2
Commercial real estate, domestic	1.5	10.4
Credit cards	0.2	15.2
Other consumer ³	0.4	7.1
Other loans ⁴	0.4	2.7

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	102.5	110.6

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	3.8	2.9
Other revenue ³	0.0	
<i>less</i>		
Provisions	5.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-1.8	-1.4
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.27.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.2	10.1	10.1
Tier 1 capital ratio	12.0	10.8	10.8
Total capital ratio	14.2	12.6	12.6
Tier 1 leverage ratio	10.2	9.0	9.0
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	3.3	3.9
First-lien mortgages, domestic	0.3	2.0
Junior liens and HELOCs, domestic	0.3	3.6
Commercial and industrial ²	1.1	4.7
Commercial real estate, domestic	0.8	5.5
Credit cards	0.1	11.5
Other consumer ³	0.4	5.6
Other loans ⁴	0.2	1.7

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	102.5	113.2

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	4.8	3.5
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	1.4	1.0
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.28.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.5	12.4	12.4
Tier 1 capital ratio	16.1	13.6	13.6
Total capital ratio	18.0	15.3	15.3
Tier 1 leverage ratio	12.5	10.5	10.5
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	8.1	9.1
First-lien mortgages, domestic	0.2	2.7
Junior liens and HELOCs, domestic	0.2	3.7
Commercial and industrial ²	0.8	4.0
Commercial real estate, domestic	1.0	5.7
Credit cards	0.1	13.2
Other consumer ³	4.9	17.5
Other loans ⁴	0.8	10.0

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	104.3	113.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	7.0	4.8
Other revenue ³	0.0	
<i>less</i>		
Provisions	7.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.2	
<i>equals</i>		
Net income before taxes	-0.2	-0.1
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.28.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	14.5	15.9	14.3
Tier 1 capital ratio	16.1	17.3	15.9
Total capital ratio	18.0	19.0	17.8
Tier 1 leverage ratio	12.5	13.4	12.2
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	5.6	6.2
First-lien mortgages, domestic	0.1	1.7
Junior liens and HELOCs, domestic	0.2	2.6
Commercial and industrial ²	0.5	2.7
Commercial real estate, domestic	0.5	2.8
Credit cards	0.1	10.5
Other consumer ³	3.6	12.6
Other loans ⁴	0.6	6.7

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	104.3	117.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	8.0	5.4
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.8	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.1	
<i>equals</i>		
Net income before taxes	4.1	2.8
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.29.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.6	8.7	7.4
Tier 1 capital ratio	14.7	11.6	10.4
Total capital ratio	16.0	12.6	11.5
Tier 1 leverage ratio	6.5	5.1	4.6
Supplementary leverage ratio	n/a	4.6	4.2

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	0.6	3.1
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial ²	0.2	6.2
Commercial real estate, domestic	0.0	6.6
Credit cards	0.0	0.0
Other consumer ³	0.0	0.6
Other loans ⁴	0.4	2.5

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	99.9	106.9

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	4.2	1.6
Other revenue ³	0.0	
<i>less</i>		
Provisions	0.8	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses ⁴	0.9	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	2.1	0.8
Memo items		
Other comprehensive income ⁶	-1.0	
<i>Other effects on capital</i>	Actual 2016:Q4	2019:Q1
AOCI included in capital (billions of dollars) ⁷	-1.9	-3.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.29.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.6	9.9	8.6
Tier 1 capital ratio	14.7	12.8	11.6
Total capital ratio	16.0	13.7	12.7
Tier 1 leverage ratio	6.5	5.5	5.1
Supplementary leverage ratio	n/a	5.0	4.6

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	0.4	2.1
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial ²	0.1	3.7
Commercial real estate, domestic	0.0	2.9
Credit cards	0.0	0.0
Other consumer ³	0.0	0.6
Other loans ⁴	0.3	1.8

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	99.9	109.4

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	6.1	2.3
Other revenue ³	0.0	
<i>less</i>		
Provisions	0.5	
Realized losses/gains on securities (AFS/HTM)	0.2	
Trading and counterparty losses ⁴	0.5	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	4.8	1.9
Memo items		
Other comprehensive income ⁶	-1.2	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-1.9	-3.3

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.30.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.6	7.1	7.1
Tier 1 capital ratio	10.3	7.7	7.7
Total capital ratio	12.3	9.8	9.8
Tier 1 leverage ratio	9.2	7.0	7.0
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	6.7	4.5
First-lien mortgages, domestic	0.8	2.9
Junior liens and HELOCs, domestic	0.5	4.4
Commercial and industrial ²	2.2	4.7
Commercial real estate, domestic	1.3	6.9
Credit cards	0.2	14.1
Other consumer ³	1.3	4.9
Other loans ⁴	0.3	2.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	176.8	194.5

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	5.7	2.6
Other revenue ³	0.0	
<i>less</i>		
Provisions	7.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	1.1	
<i>equals</i>		
Net income before taxes	-2.8	-1.3
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.30.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.6	8.6	8.5
Tier 1 capital ratio	10.3	9.2	9.1
Total capital ratio	12.3	10.9	10.9
Tier 1 leverage ratio	9.2	8.2	8.2
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	4.2	2.8
First-lien mortgages, domestic	0.5	1.7
Junior liens and HELOCs, domestic	0.4	3.1
Commercial and industrial ²	1.4	2.9
Commercial real estate, domestic	0.6	3.3
Credit cards	0.2	10.5
Other consumer ³	1.0	3.7
Other loans ⁴	0.2	1.3

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	176.8	199.2

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	7.8	3.6
Other revenue ³	0.0	
<i>less</i>		
Provisions	4.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.8	
<i>equals</i>		
Net income before taxes	2.7	1.2
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.31.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	13.6	11.9	11.3
Tier 1 capital ratio	13.7	11.9	11.3
Total capital ratio	14.8	13.1	12.7
Tier 1 leverage ratio	7.8	6.6	6.4
Supplementary leverage ratio	n/a	6.0	5.8

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	8.8	5.5
First-lien mortgages, domestic	0.7	2.7
Junior liens and HELOCs, domestic	0.5	5.1
Commercial and industrial ²	2.1	5.8
Commercial real estate, domestic	1.8	6.7
Credit cards	2.3	18.9
Other consumer ³	0.6	2.5
Other loans ⁴	0.8	3.2

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	188.7	218.4

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	6.7	1.7
Other revenue ³	0.0	
<i>less</i>		
Provisions	9.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-2.8	-0.7
Memo items		
Other comprehensive income ⁶	-0.8	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	-0.8

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.31.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	13.6	13.9	13.2
Tier 1 capital ratio	13.7	13.9	13.2
Total capital ratio	14.8	14.8	14.3
Tier 1 leverage ratio	7.8	7.6	7.4
Supplementary leverage ratio	n/a	7.0	6.8

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	5.9	3.6
First-lien mortgages, domestic	0.5	1.8
Junior liens and HELOCs, domestic	0.4	3.9
Commercial and industrial ²	1.3	3.7
Commercial real estate, domestic	0.9	3.3
Credit cards	1.8	15.2
Other consumer ³	0.4	1.7
Other loans ⁴	0.5	2.0

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	188.7	223.8

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	9.0	2.3
Other revenue ³	0.0	
<i>less</i>		
Provisions	5.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	3.1	0.8
Memo items		
Other comprehensive income ⁶	-0.7	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	-0.7

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.32.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.4	7.6	7.6
Tier 1 capital ratio	11.0	9.0	9.0
Total capital ratio	13.2	11.0	11.0
Tier 1 leverage ratio	9.0	7.4	7.4
Supplementary leverage ratio	n/a	6.0	6.0

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	17.9	6.3
First-lien mortgages, domestic	1.0	1.7
Junior liens and HELOCs, domestic	0.8	4.6
Commercial and industrial ²	5.9	7.9
Commercial real estate, domestic	4.0	9.7
Credit cards	3.4	15.2
Other consumer ³	1.4	3.6
Other loans ⁴	1.3	4.9

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	358.2	392.5

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	20.8	4.4
Other revenue ³	0.0	
<i>less</i>		
Provisions	19.4	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	1.3	0.3
Memo items		
Other comprehensive income ⁶	1.1	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-1.0	-0.5

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.32.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	9.4	9.0	8.7
Tier 1 capital ratio	11.0	10.4	10.1
Total capital ratio	13.2	12.1	12.0
Tier 1 leverage ratio	9.0	8.4	8.3
Supplementary leverage ratio	n/a	6.8	6.7

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	11.6	4.0
First-lien mortgages, domestic	0.5	0.9
Junior liens and HELOCs, domestic	0.5	3.0
Commercial and industrial ²	4.0	5.3
Commercial real estate, domestic	1.9	4.7
Credit cards	2.7	11.9
Other consumer ³	1.0	2.6
Other loans ⁴	0.8	3.2

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	358.2	402.7

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	25.1	5.2
Other revenue ³	0.0	
<i>less</i>		
Provisions	11.8	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	13.3	2.8
Memo items		
Other comprehensive income ⁶	-0.2	
<i>Other effects on capital</i>	Actual 2016:Q4	2019:Q1
AOCI included in capital (billions of dollars) ⁷	-1.0	-1.8

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.33.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	8.8	8.6
Tier 1 capital ratio	12.8	10.4	10.2
Total capital ratio	16.1	13.4	13.4
Tier 1 leverage ratio	8.9	7.2	7.2
Supplementary leverage ratio	n/a	6.2	6.1

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	50.4	5.0
First-lien mortgages, domestic	4.9	1.8
Junior liens and HELOCs, domestic	2.8	4.3
Commercial and industrial ²	12.4	6.4
Commercial real estate, domestic	11.4	7.7
Credit cards	5.9	15.3
Other consumer ³	6.8	6.9
Other loans ⁴	6.4	3.4

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	1,336.2	1,456.4

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	71.2	3.5
Other revenue ³	0.0	
<i>less</i>		
Provisions	55.9	
Realized losses/gains on securities (AFS/HTM)	1.6	
Trading and counterparty losses ⁴	7.7	
Other losses/gains ⁵	1.1	
<i>equals</i>		
Net income before taxes	4.8	0.2
Memo items		
Other comprehensive income ⁶	-3.5	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-2.0	-6.8

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.33.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	10.5	9.9
Tier 1 capital ratio	12.8	12.0	11.4
Total capital ratio	16.1	14.7	14.5
Tier 1 leverage ratio	8.9	8.3	8.0
Supplementary leverage ratio	n/a	7.1	6.8

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	31.1	3.1
First-lien mortgages, domestic	2.2	0.8
Junior liens and HELOCs, domestic	1.5	2.3
Commercial and industrial ²	8.3	4.2
Commercial real estate, domestic	5.3	3.5
Credit cards	4.7	12.0
Other consumer ³	5.2	5.2
Other loans ⁴	3.9	2.1

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	1,336.2	1,491.0

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	90.4	4.4
Other revenue ³	0.0	
<i>less</i>		
Provisions	31.7	
Realized losses/gains on securities (AFS/HTM)	0.7	
Trading and counterparty losses ⁴	3.4	
Other losses/gains ⁵	0.9	
<i>equals</i>		
Net income before taxes	53.8	2.6
Memo items		
Other comprehensive income ⁶	-6.9	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	-2.0	-10.1

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.34.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.1	8.5	8.5
Tier 1 capital ratio	13.5	9.9	9.9
Total capital ratio	15.2	11.5	11.5
Tier 1 leverage ratio	11.1	8.1	8.1
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	2.9	6.4
First-lien mortgages, domestic	0.0	0.6
Junior liens and HELOCs, domestic	0.1	2.6
Commercial and industrial ²	1.0	8.6
Commercial real estate, domestic	1.4	7.3
Credit cards	0.0	13.5
Other consumer ³	0.0	9.5
Other loans ⁴	0.2	7.5

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	49.9	54.4

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	1.7	2.5
Other revenue ³	0.0	
<i>less</i>		
Provisions	3.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	-1.4	-2.1
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

⁵ 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.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

Table C.34.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 2016:Q4 and projected 2017:Q1–2019:Q1			
Percent			
Regulatory ratio	Actual 2016:Q4	Stressed capital ratios ¹	
		Ending	Minimum
Common equity tier 1 capital ratio	12.1	11.0	11.0
Tier 1 capital ratio	13.5	12.3	12.3
Total capital ratio	15.2	13.7	13.7
Tier 1 leverage ratio	11.1	9.9	9.9
Supplementary leverage ratio	n/a		

¹ 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 ratios, other than the supplementary leverage ratio, are for the period 2017:Q1 to 2019:Q1. The minimum supplementary leverage ratio is for the period 2018:Q1 to 2019:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Projected loan losses, by type of loan, 2017:Q1–2019:Q1		
Loan type	Billions of dollars	Portfolio loss rates (percent) ¹
Loan losses	1.7	3.7
First-lien mortgages, domestic	0.0	0.3
Junior liens and HELOCs, domestic	0.0	1.4
Commercial and industrial ²	0.7	5.8
Commercial real estate, domestic	0.7	3.6
Credit cards	0.0	10.5
Other consumer ³	0.0	7.3
Other loans ⁴	0.2	4.6

¹ 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.

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

³ Other consumer loans include student loans and automobile loans.

⁴ Other loans include international real estate loans.

Risk-weighted assets, actual 2016:Q4 and projected 2019:Q1		
Billions of dollars		
Item	Actual 2016:Q4	Projected 2019:Q1
Risk-weighted assets ¹	49.9	55.2

¹ 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 2019:Q1		
Item	Billions of dollars	Percent of average assets ¹
Pre-provision net revenue ²	2.2	3.2
Other revenue ³	0.0	
<i>less</i>		
Provisions	1.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses ⁴	0.0	
Other losses/gains ⁵	0.0	
<i>equals</i>		
Net income before taxes	0.5	0.8
Memo items		
Other comprehensive income ⁶	0.0	
<i>Other effects on capital</i>	<i>Actual 2016:Q4</i>	<i>2019:Q1</i>
AOCI included in capital (billions of dollars) ⁷	0.0	0.0

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

² Pre-provision net revenue includes losses from operational-risk events and other real estate owned (OREO) costs.

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

⁴ 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.

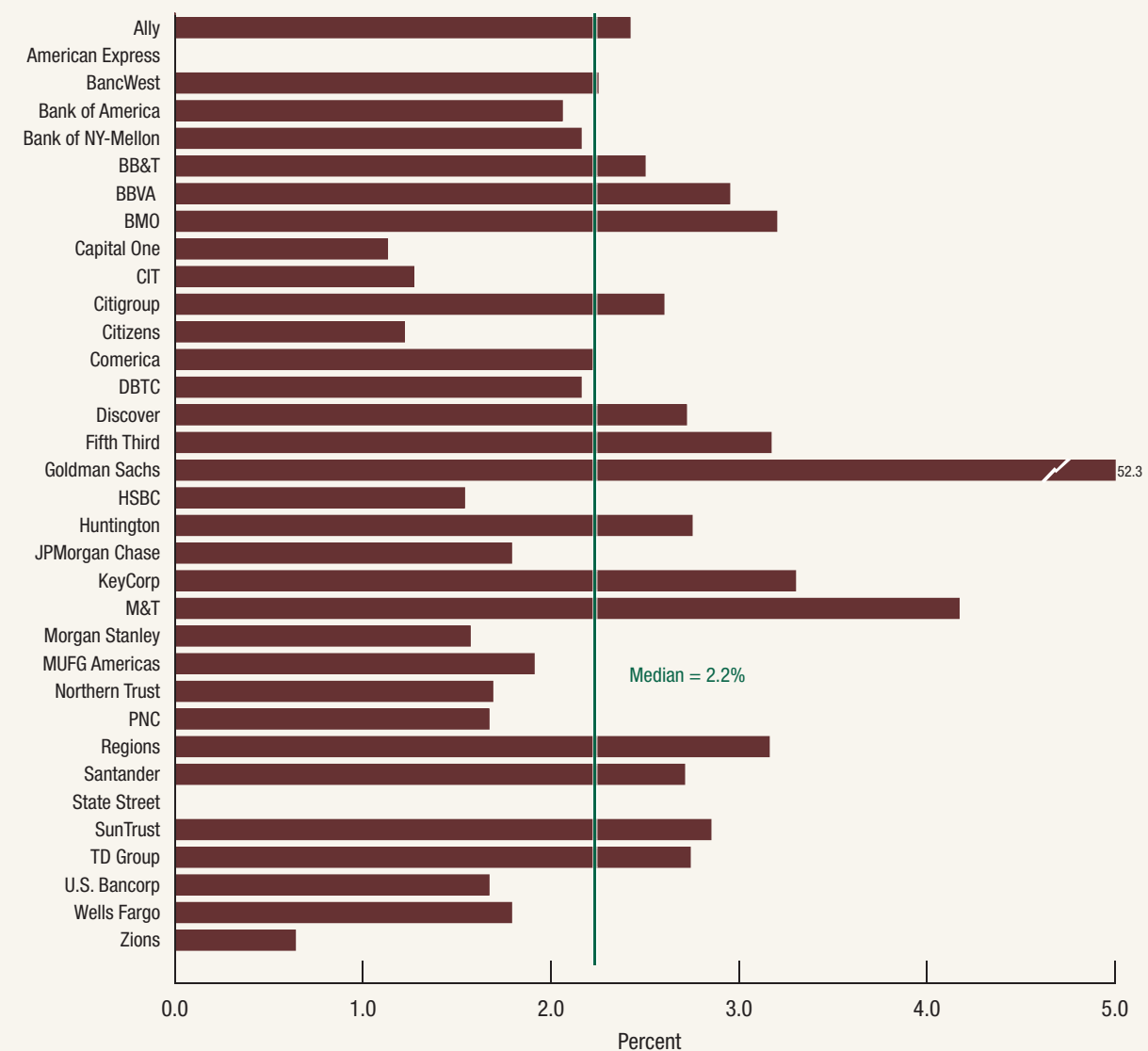
⁵ Other losses/gains includes projected change in fair value of loans held for sale and loans held for investment measured under the fair-value option, and goodwill impairment losses.

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

⁷ Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 80 percent included in projected regulatory capital for 2017 and 100 percent included in projected regulatory capital starting in 2018. See 12 CFR 217.300(b)(3).

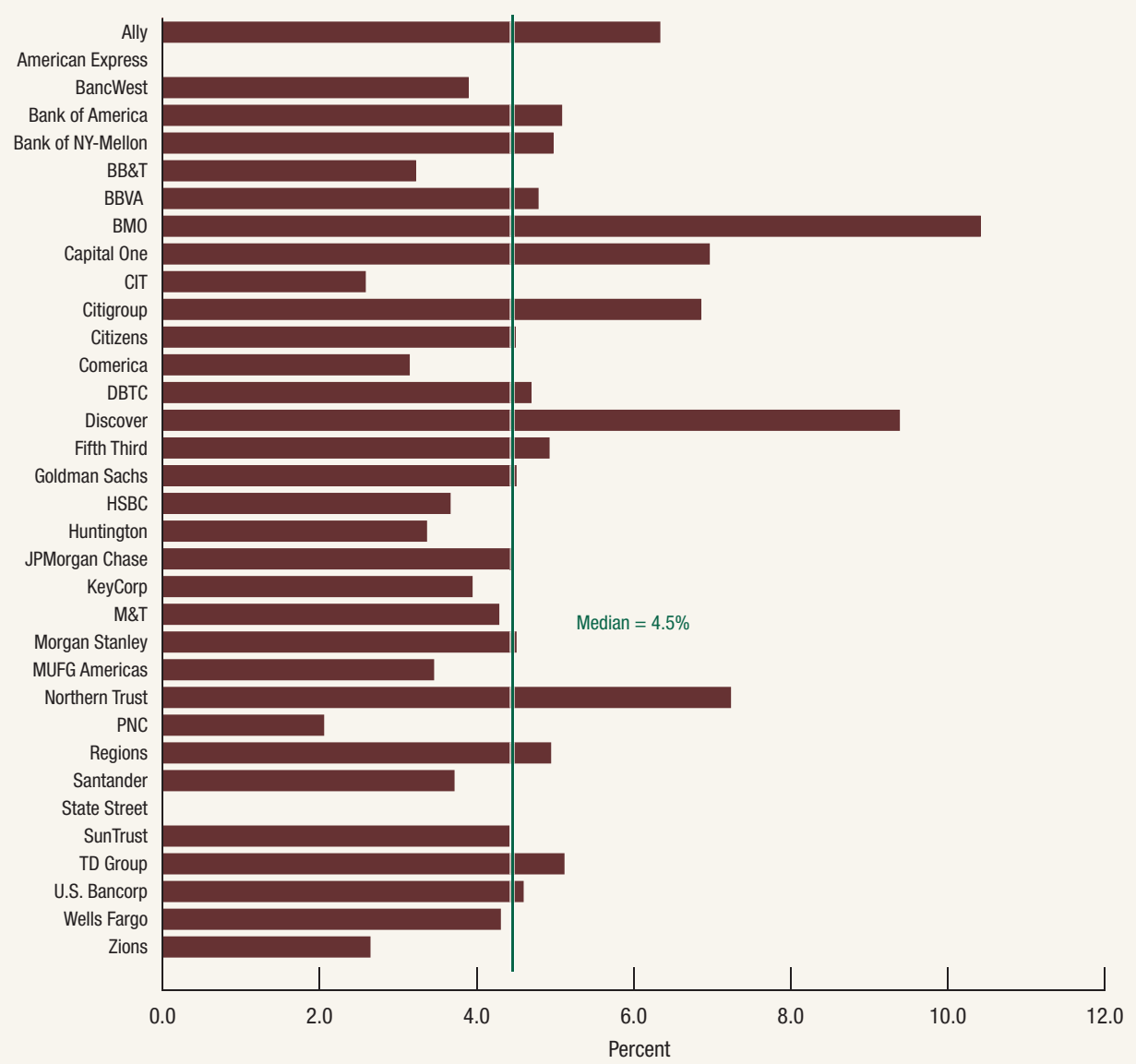
Appendix D: Additional Aggregate Results

Figure D.1. First-lien mortgages domestic loss rates in the severely adverse scenario



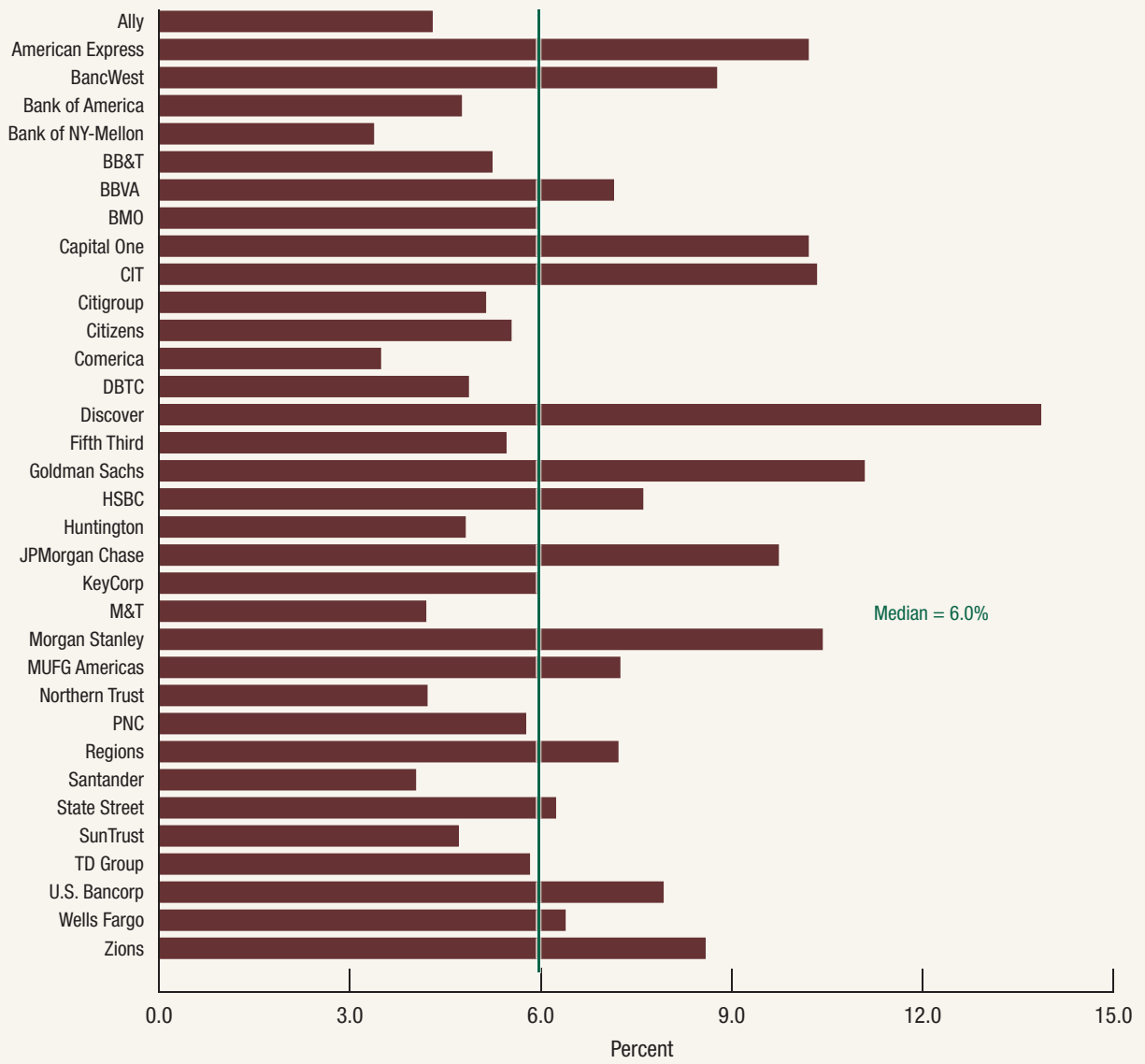
Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.2. Junior liens and HELOCs domestic loss rates in the severely adverse scenario



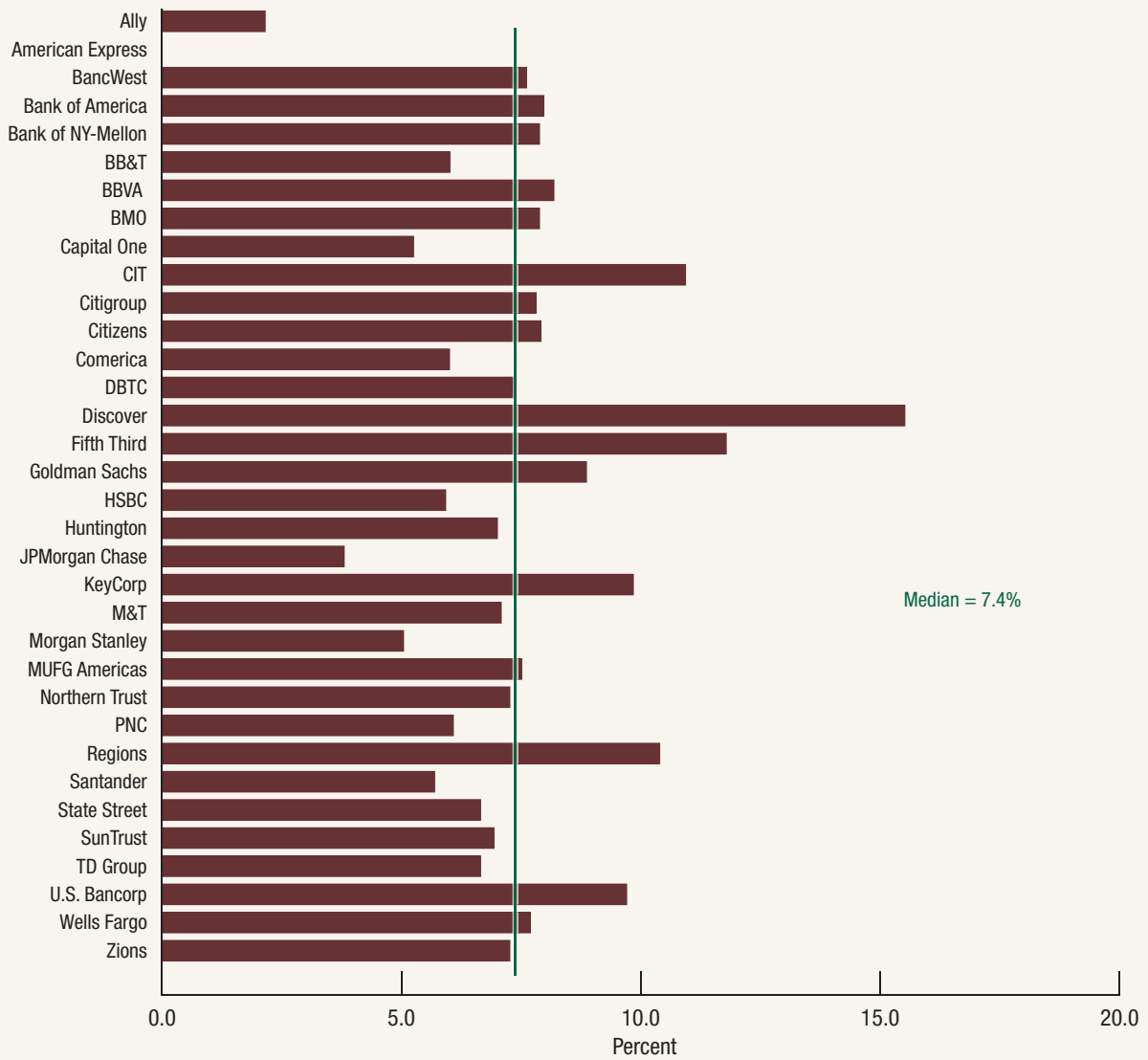
Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.3. Commercial and industrial loss rates in the severely adverse scenario



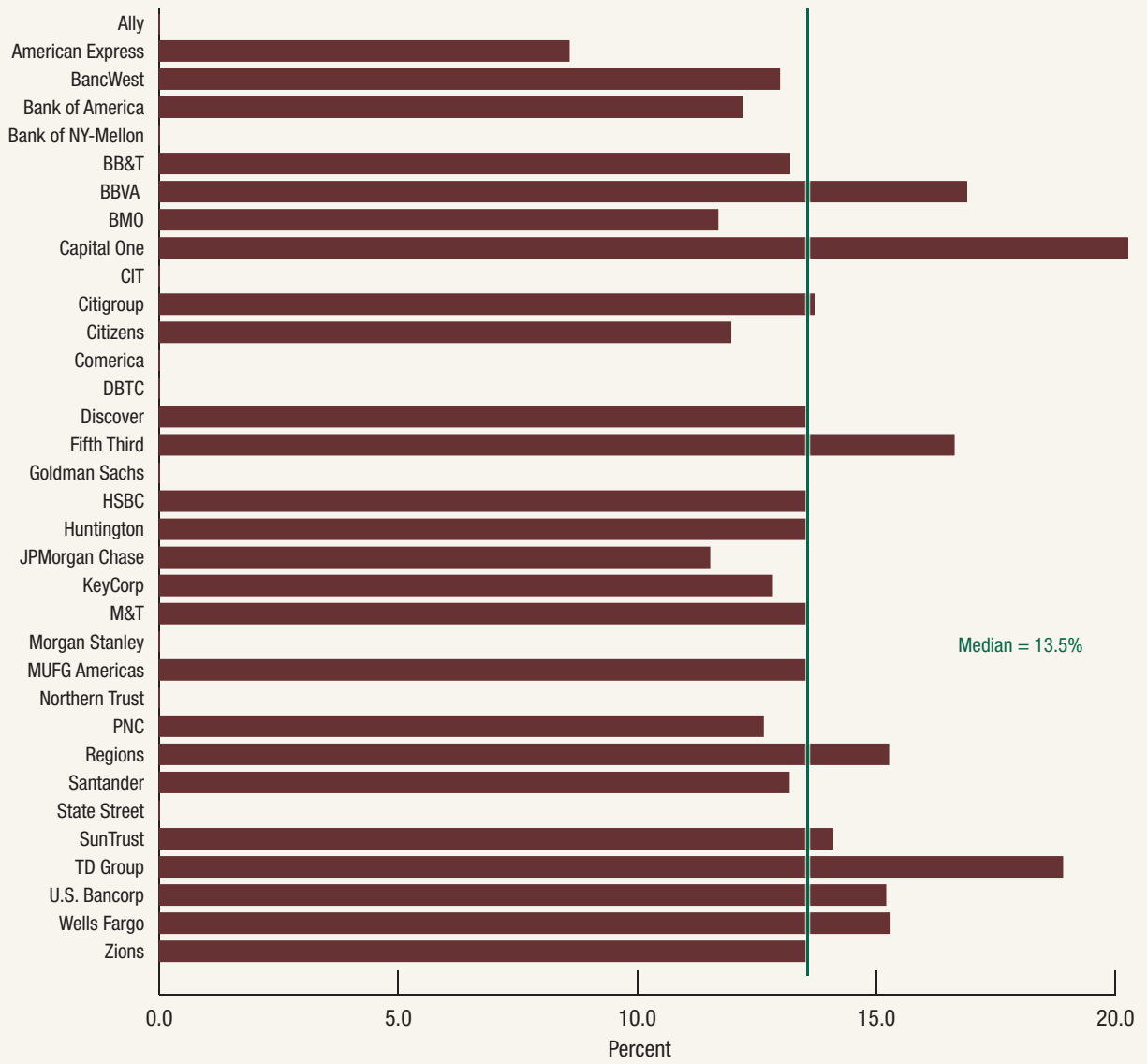
Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances. Losses are calculated based on the exposure at default, which includes both outstanding balances and any additional drawdown of the credit line that occurs prior to default, while loss rates are calculated as a percent of outstanding balances.

Figure D.4. Commercial real estate domestic loss rates in the severely adverse scenario



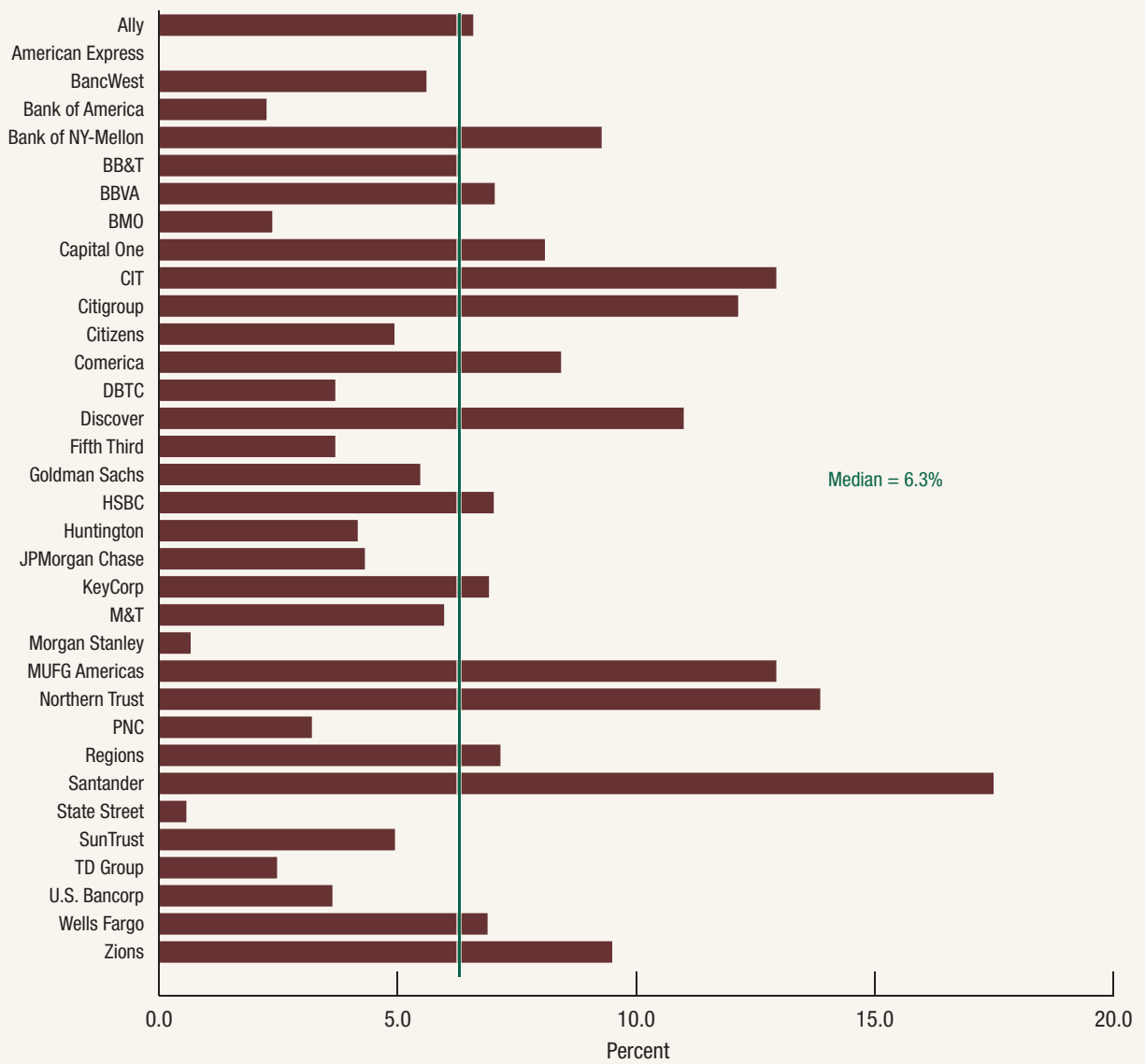
Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.5. Credit card loss rates in the severely adverse scenario



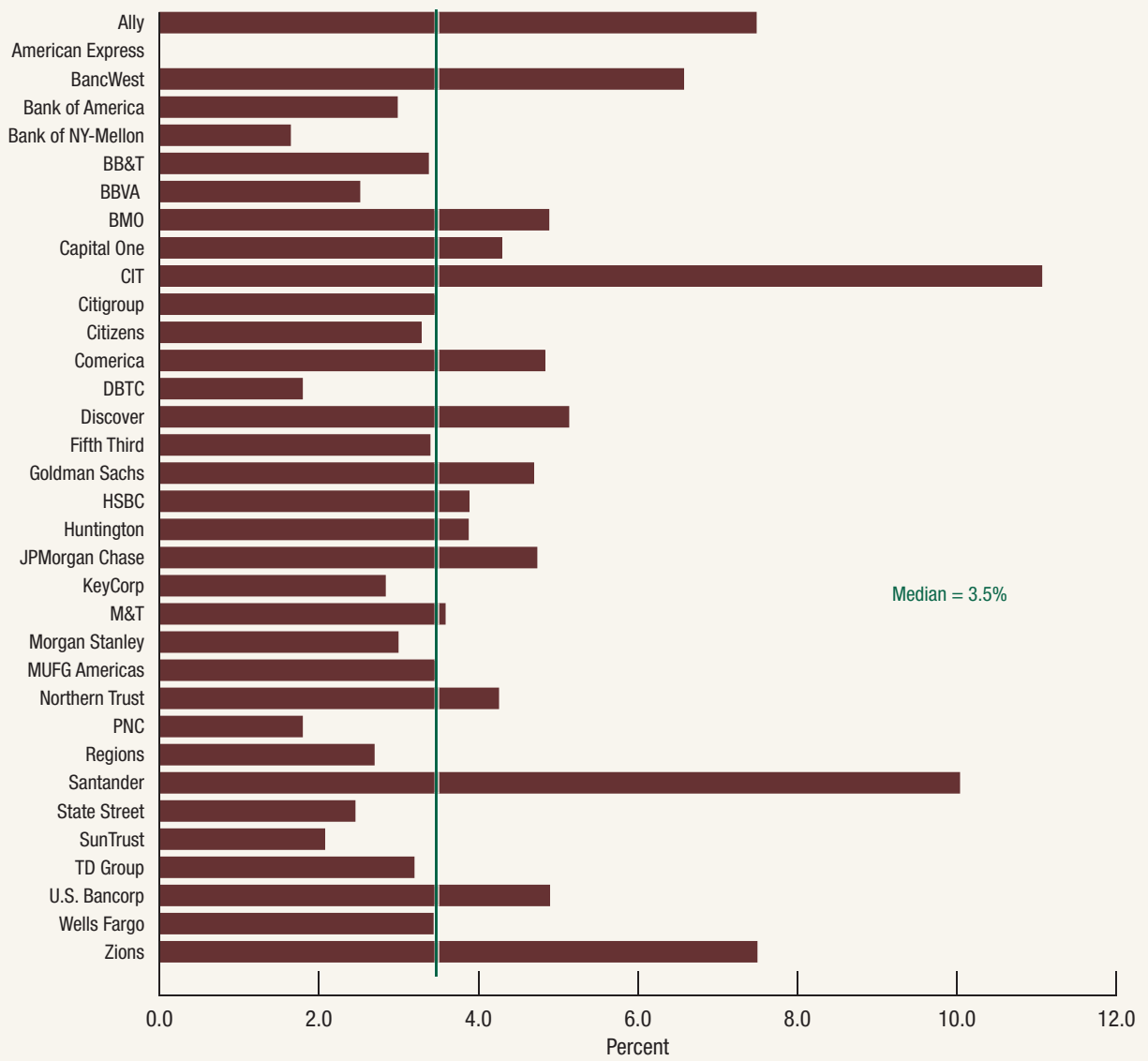
Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.6. Other consumer loss rates in the severely adverse scenario



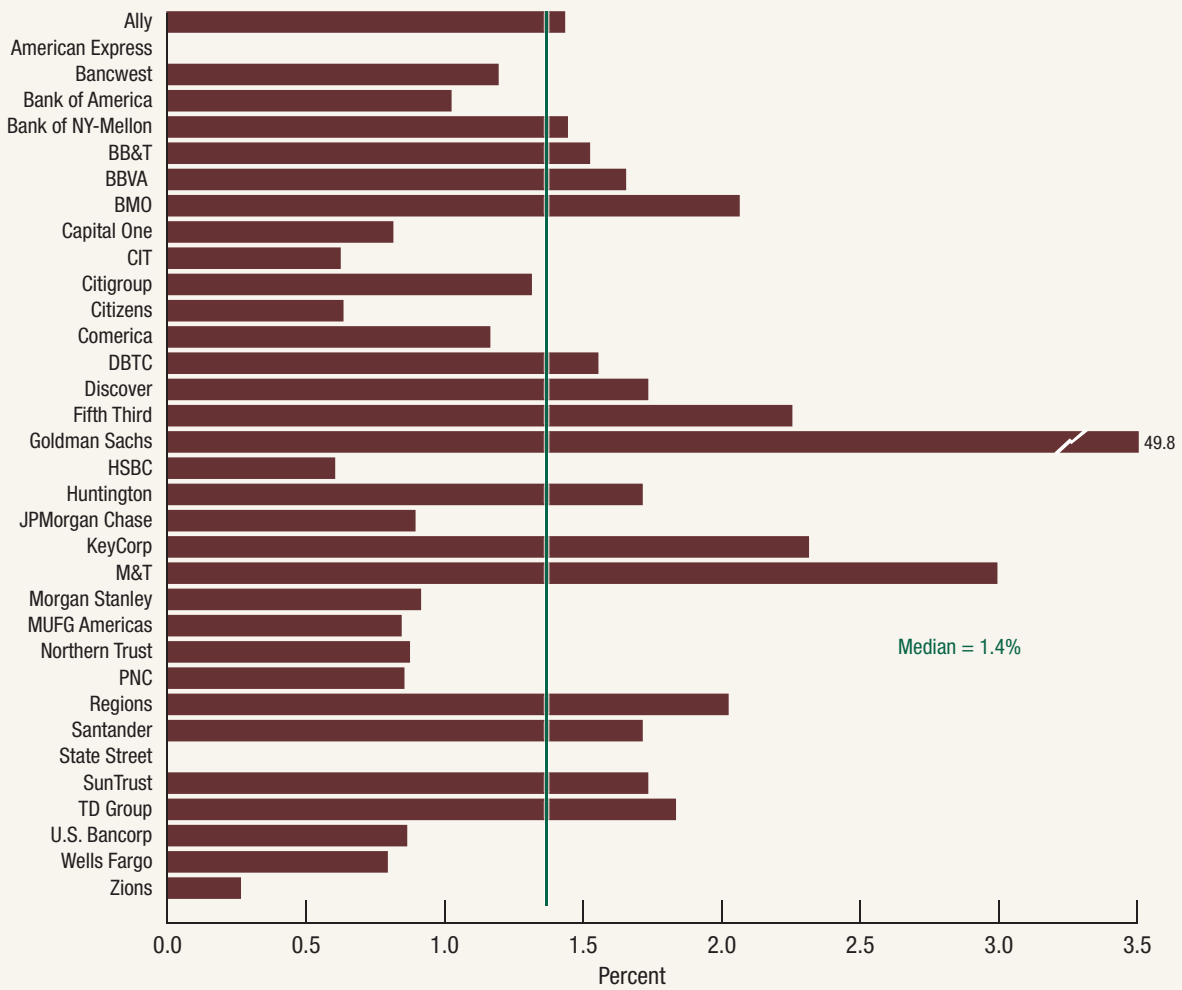
Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.7. Other loans loss rates in the severely adverse scenario



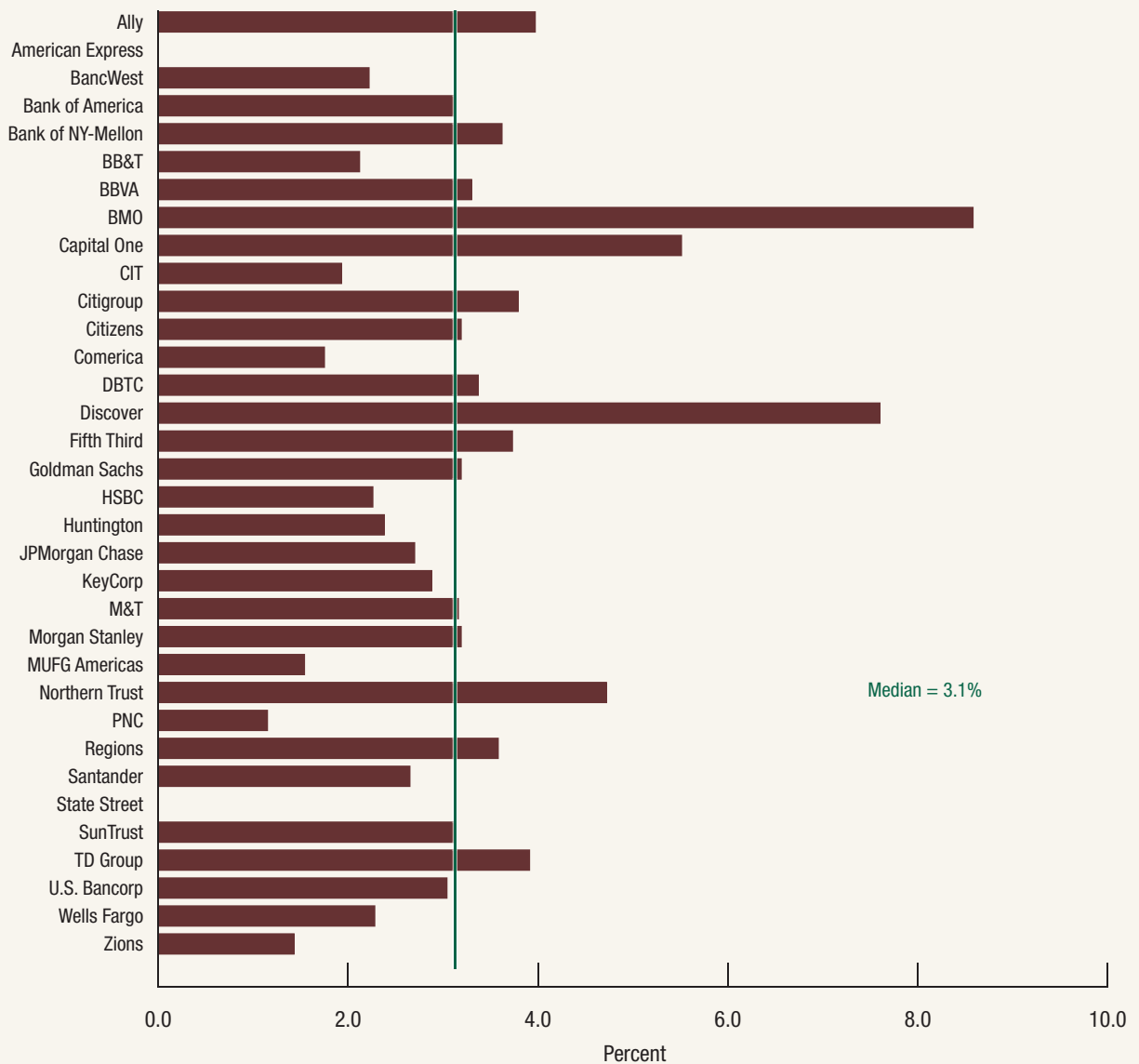
Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.8. First-lien mortgages domestic loss rates in the adverse scenario



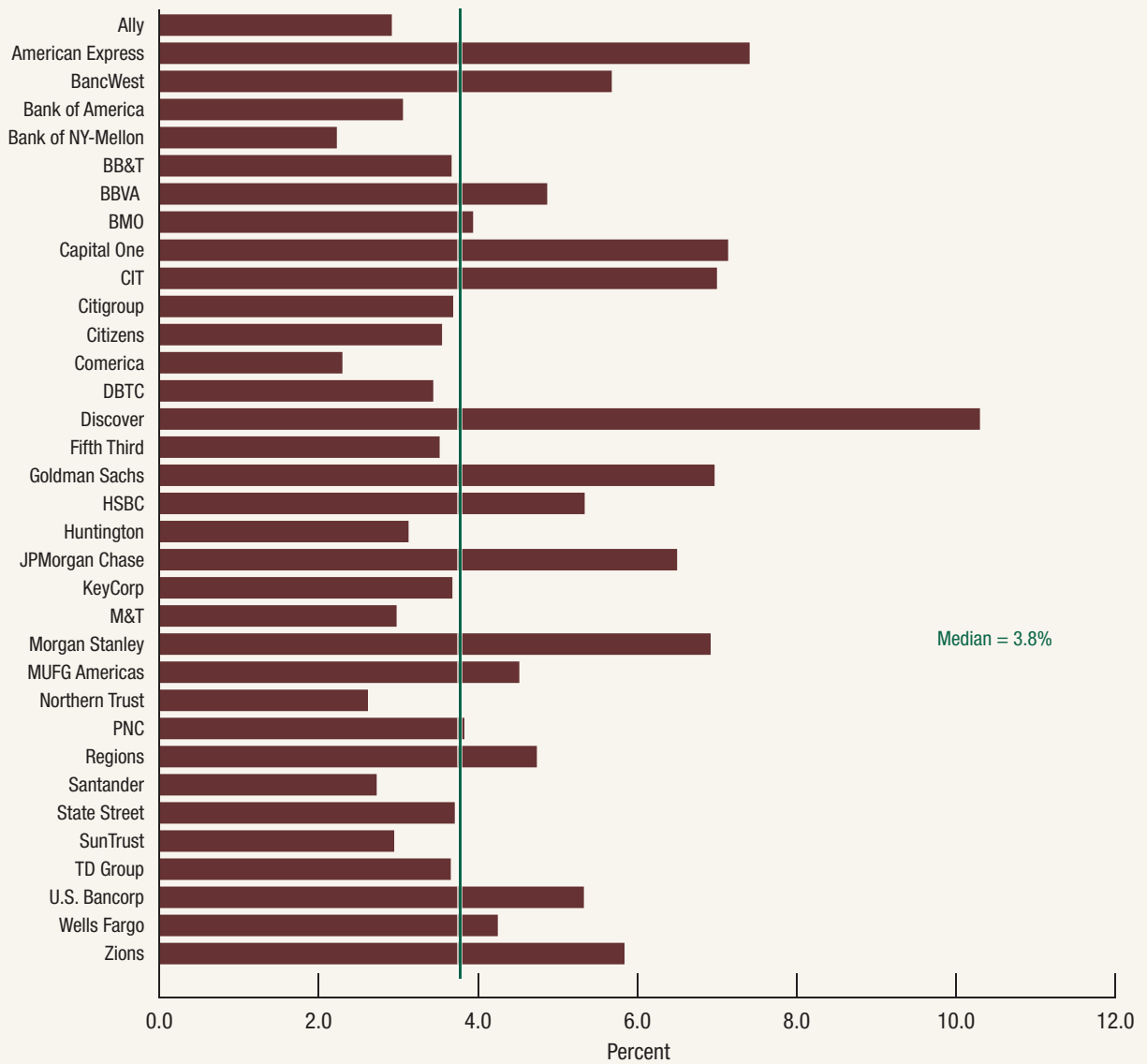
Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.9. Junior liens and HELOCs domestic loss rates in the adverse scenario



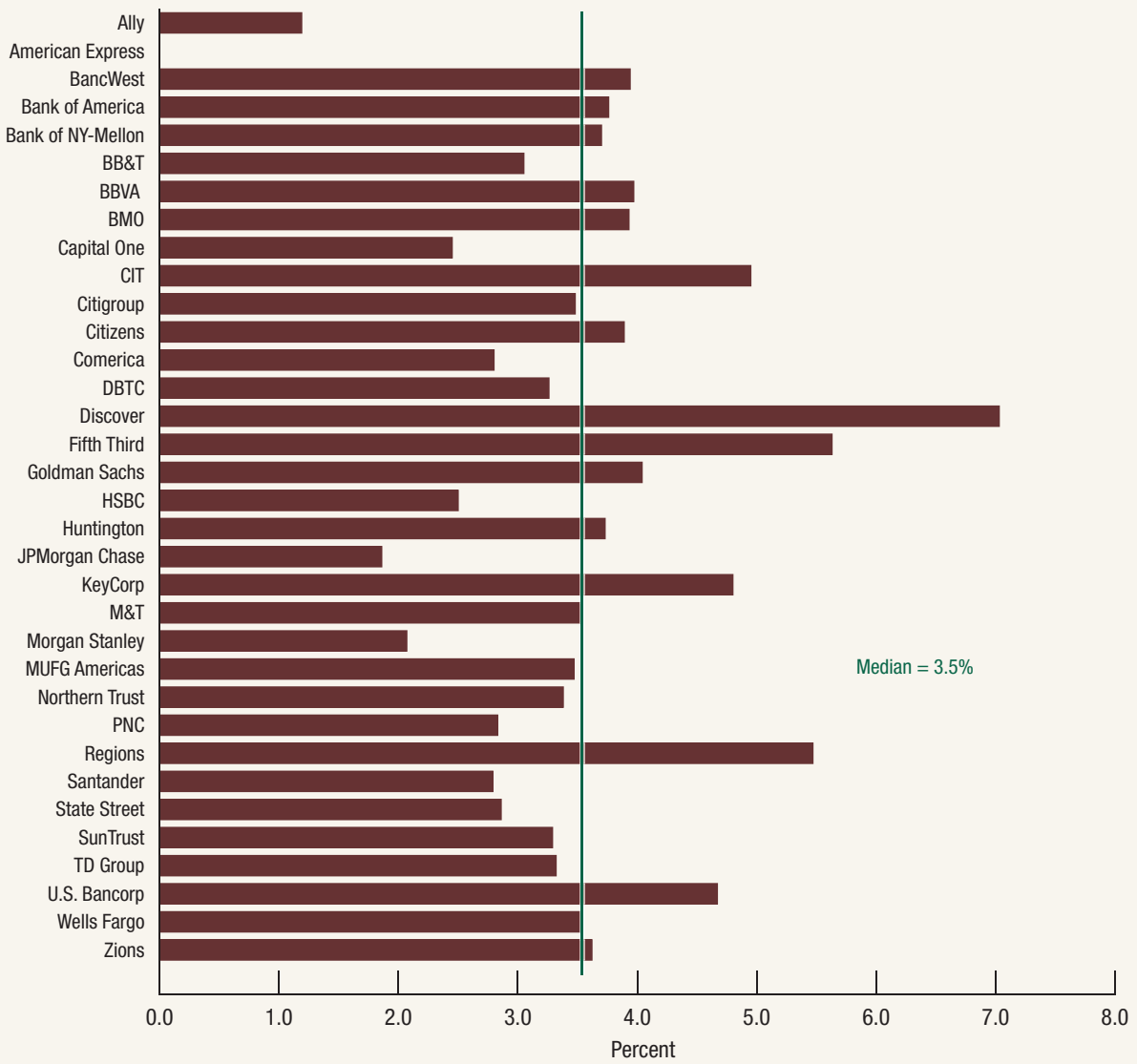
Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.10. Commercial and industrial loss rates in the adverse scenario



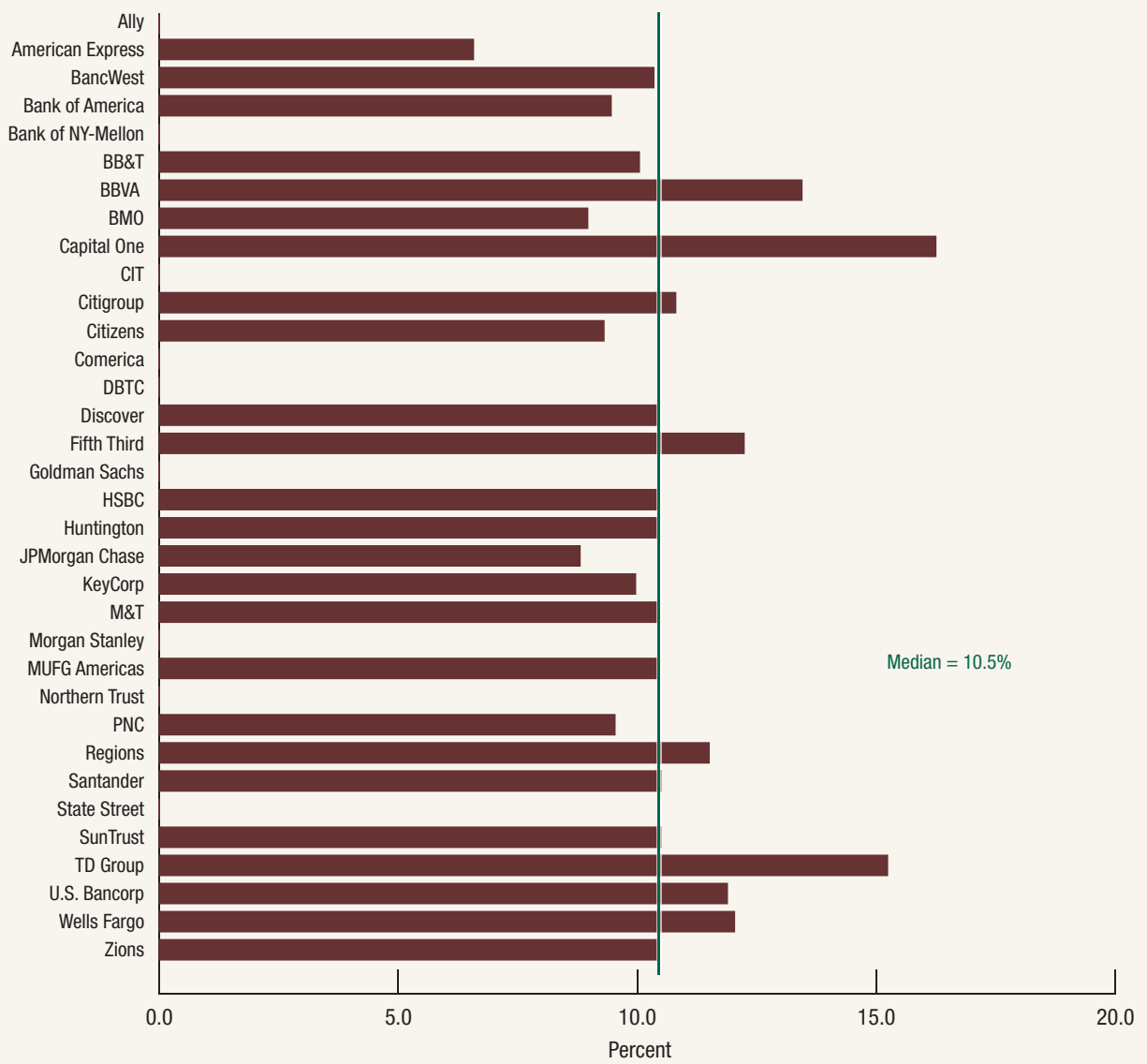
Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances. Losses are calculated based on the exposure at default, which includes both outstanding balances and any additional drawdown of the credit line that occurs prior to default, while loss rates are calculated as a percent of outstanding balances.

Figure D.11. Commercial real estate domestic loss rates in the adverse scenario



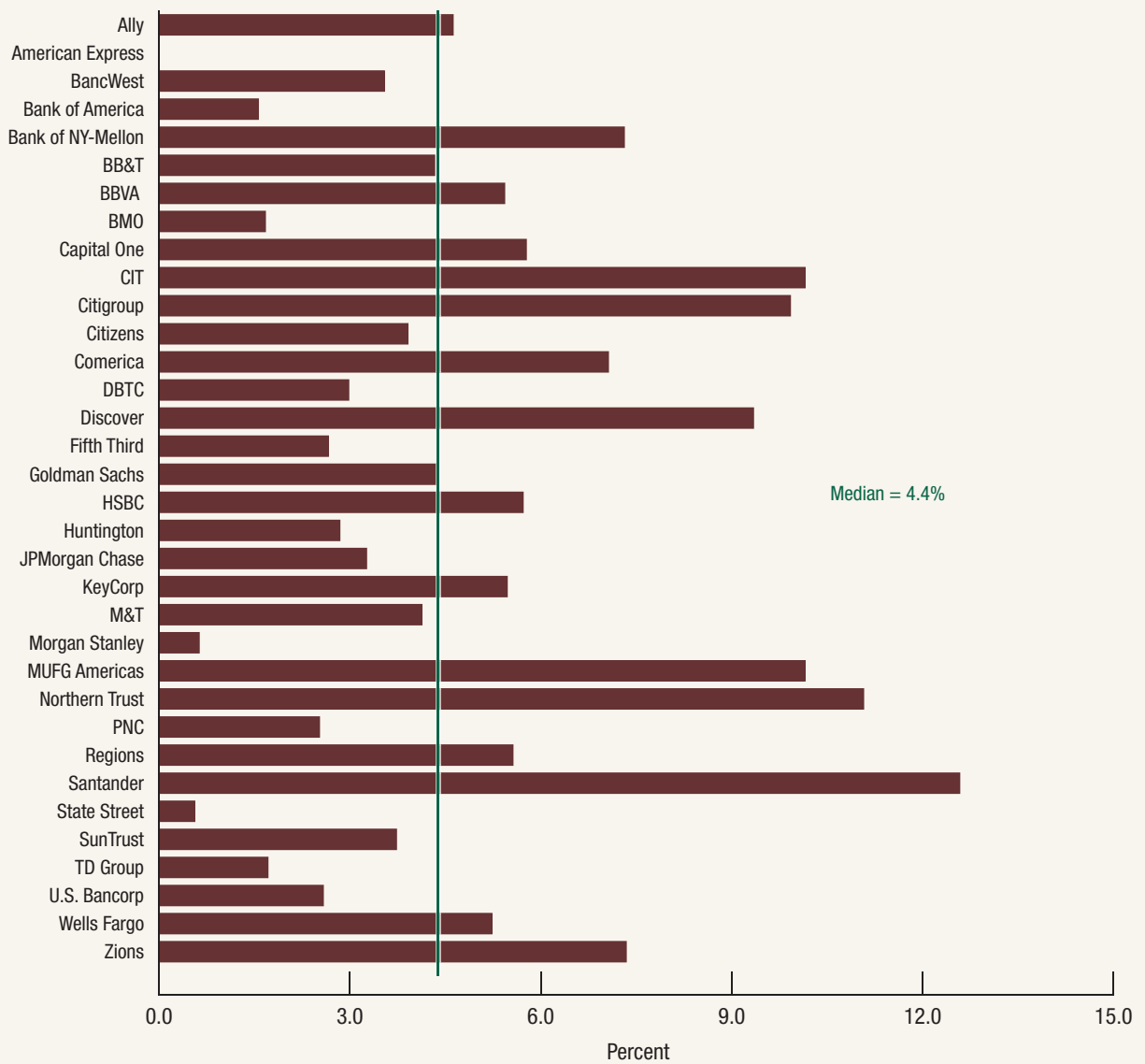
Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.12. Credit card loss rates in the adverse scenario



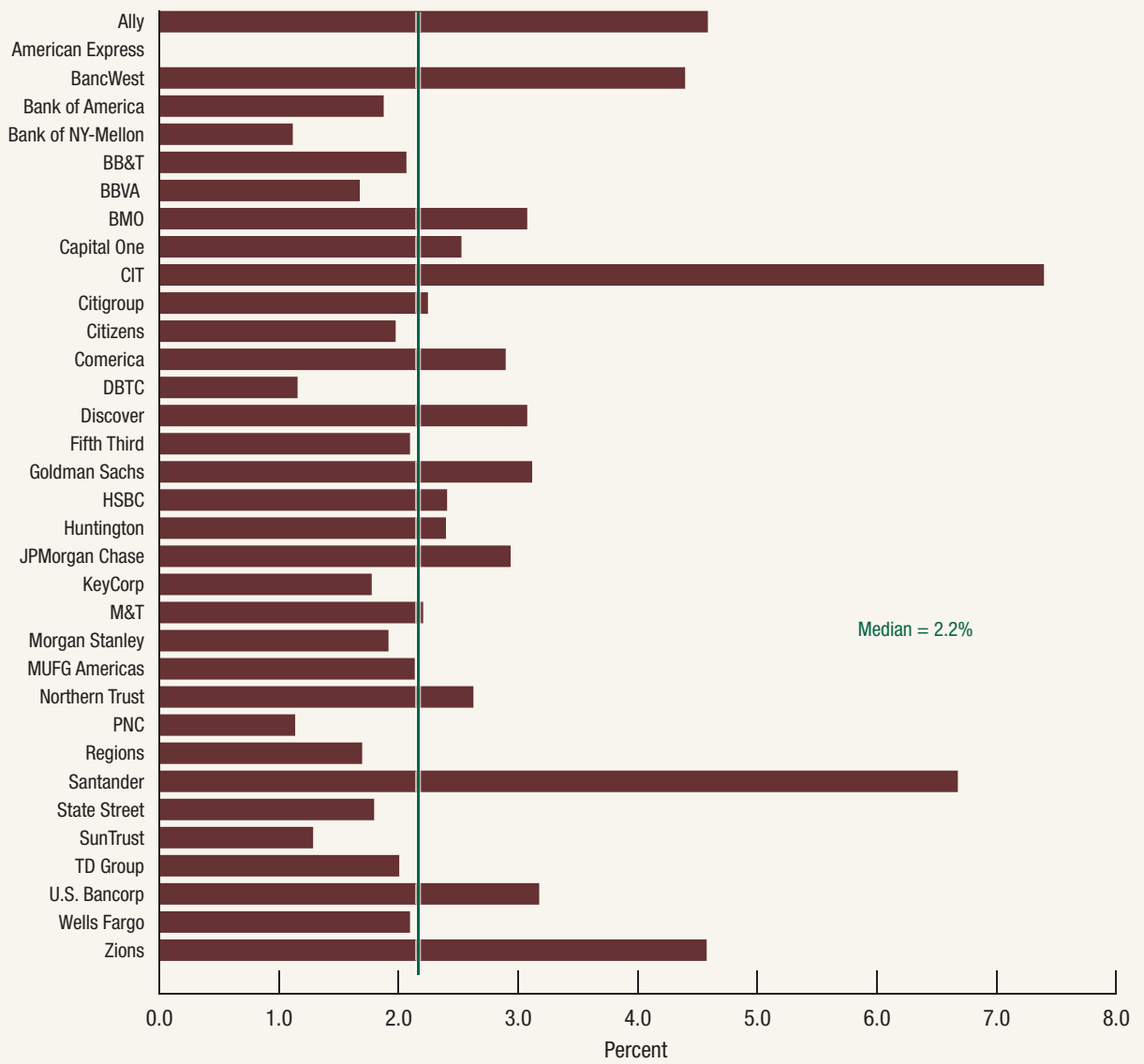
Note: Estimates are for the nine-quarter period from 2017:Q1–2019:Q1 as a percent of average balances.

Figure D.13. Other consumer loss rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2017:Q1–2019: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 2017:Q1–2019:Q1 as a percent of average balances.

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