Dodd-Frank Act Stress Test 2018: Supervisory Stress Test Methodology and Results

June 2018

Board of Governors of the Federal Reserve System

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Preface

The Federal Reserve promotes a safe, sound, and efficient 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 assesses whether BHCs with $100 billion or more in total consolidated assets and U.S. IHCs (together, firms) 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.[2] 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 heightened expectations for BHCs and U.S. IHCs supervised by the Large Institution Supervision Coordinating Committee (LISCC firms) and "large and complex firms."[3]

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 firms' 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 rules[4] serves to inform the Federal Reserve, firms, and the general public of how institutions' capital ratios might change under a hypothetical set of stressful economic conditions developed by the Federal Reserve. 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 with $100 billion or more in total consolidated assets and U.S. IHCs are currently subject to Dodd-Frank supervisory stress testing.[5]
- **The Comprehensive Capital Analysis and Review (CCAR)** consists of a quantitative assessment for all firms, and a qualitative assessment for firms that are LISCC or large and complex firms. The quantitative assessment evaluates a firm's capital adequacy and planned capital distributions, such 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 busi-

[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] Enacted on May 24, 2018, the Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCPA) raised the asset thresholds for application of section 165 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. The Board will not disclose the current supervisory stress test results for BHCs with greater than or equal to $50 billion but less than $100 billion in total consolidated assets. This document reflects those changes.

[3] Large and complex firms are BHCs or U.S. IHCs that (1) have average total consolidated assets over $250 billion or (2) have average total nonbank assets of $75 billion or more, and (3) are not LISCC firms.

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

[5] Currently, no nonbank financial companies supervised by the Board are subject to the capital planning or stress test requirements.

nesses throughout times of economic and financial market stress, even after making all planned capital distributions. 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 practices. 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.

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Executive Summary

The Dodd-Frank Act requires the Federal Reserve to conduct an annual stress test of BHCs with $100 billion or more in total consolidated assets, U.S. IHCs,[6] and any nonbank financial company that the FSOC has determined shall be supervised by the Board.[7] The Board first adopted rules implementing this requirement in October 2012 and most recently modified these rules in February 2017.[8]

For this year's stress test cycle (DFAST 2018), which began January 1, 2018, the Federal Reserve conducted supervisory stress tests of 35 firms.

This report provides

- background on Dodd-Frank Act stress testing;
- details of the adverse and severely adverse supervisory scenarios used in DFAST 2018;
- 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 firms that participated in the DFAST 2018 program, presented both in the aggregate and for individual institutions.

The adverse and severely adverse supervisory scenarios used in DFAST 2018 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 almost 6 percentage points to 10 percent, accompanied by a global aversion to long-term fixed-income assets. 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 firm's balance sheet, risk-weighted assets (RWAs), net income, and resulting regulatory capital ratios under these scenarios using data on firms' financial conditions and risk characteristics provided by the firms and a set of models developed or selected by the Federal Reserve. For DFAST 2018, the Federal Reserve updated the calculation of projected capital to reflect changes in the tax code associated with the passage of the Tax Cuts and Jobs Act (TCJA) in December 2017. As in past years, the Federal Reserve also enhanced some of the supervisory models to incorporate new data, where available, and to improve model stability and performance. 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 modifications to the calculation of projected capital is included in box 2. A description of a recent proposal to increase the transparency of the supervisory stress test, including a notice of enhanced disclosure, is included in box 3. Specific descriptions of the supervisory models and related assumptions can be found in appendix B.

The results of the DFAST 2018 projections suggest that, in the aggregate, the 35 firms would experience substantial losses under both the adverse and the severely adverse scenarios but could continue lending to businesses and households, due to the substantial accretion of capital since the financial crisis.

Over the nine quarters of the planning horizon, which for DFAST 2018 begins in the first quarter of 2018 and ends in the first quarter of 2020, aggregate losses at the 35 firms under the severely adverse scenario are projected to be $578 billion. This includes losses across loan portfolios, losses from credit impairment on securities held in the firms' investment portfolios, trading and counterparty credit

6 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).

7 12 USC 5365(i)(1).

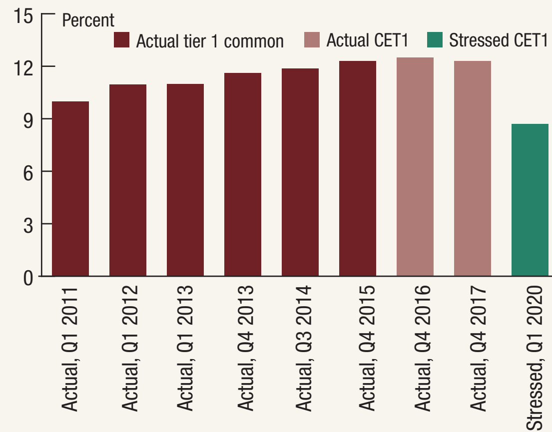
8 See 82 Fed. Reg. 9308 (February 3, 2017).

losses from a global market shock, and other losses. Projected aggregate pre-provision net revenue (PPNR) is $492 billion, and net income before taxes is projected to be −$139 billion.

In the severely adverse scenario, the aggregate Common Equity Tier 1 (CET1) capital ratio would fall from an actual 12.3 percent in the fourth quarter of 2017 to its minimum of 7.9 percent over the planning horizon. As illustrated in figure 1, the aggregate CET1 ratio is projected to rise to 8.7 percent by the end of the planning horizon.

In the adverse scenario, aggregate projected losses, PPNR, and net income before taxes are $333 billion, $467 billion, and $125 billion, respectively. The aggregate CET1 capital ratio under the adverse scenario would fall to its minimum of 10.9 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,[9] which, among other provisions, requires the Federal Reserve to conduct an annual supervisory stress test. The Dodd-Frank Act supervisory stress test applies to LISCC firms, large and complex firms,[10] and large and noncomplex firms.[11]

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.[12]

Together, the Dodd-Frank Act supervisory 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 the Federal Reserve to disclose a summary of its supervisory stress test results. The Federal Reserve must publicly disclose supervisory stress test results by June 30 of the calendar year in which the stress test was conducted.

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

10 The LISCC or large and complex firms required to participate in DFAST 2018 are Bank of America Corporation; The Bank of New York Mellon Corporation; Barclays US LLC; Capital One Financial Corporation; Citigroup Inc.; Credit Suisse Holdings (USA) LLC; Deutsche Bank USA Corp; The Goldman Sachs Group, Inc.; HSBC North America Holdings Inc.; JPMorgan Chase & Co.; Morgan Stanley; The PNC Financial Services Group, Inc.; RBC USA Holdco Corporation; State Street Corporation; TD Group US Holdings LLC; UBS Americas Holdings LLC; U.S. Bancorp; and Wells Fargo & Company.

11 The large and noncomplex firms participating in DFAST 2018 are Ally Financial Inc.; American Express Company; BB&T Corporation; BBVA Compass Bancshares, Inc.; BMO Financial Corp.; BNP Paribas USA, Inc.; Citizens Financial Group, Inc.; 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.; and SunTrust Banks, Inc.

12 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. 71435 (November 29, 2013), www.gpo.gov/fdsys/pkg/FR-2013-11-29/pdf/2013-27009.pdf (12 CFR part 252, appendix A).

Supervisory Scenarios

On February 1, 2018, the Federal Reserve released the three supervisory scenarios: baseline, adverse, and severely adverse.[13] 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.[14] 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 DFAST 2017, the Federal Reserve applied a global market shock to the trading portfolio of six firms with large trading and private equity exposures and a counterparty default scenario component to eight firms with substantial trading, processing, or custodial operations (see Global Market Shock and Counterparty Default Components). In addition, the Federal Reserve applied a supervisory market risk component, a simplified version of the global market shock and large counterparty default scenario component, to the six IHCs with trading activity that will be subject to the global market shock beginning in 2019.

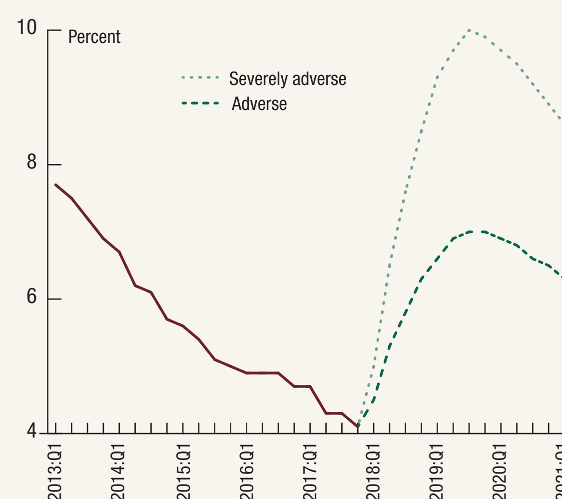
Severely Adverse Scenario

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.

The severely adverse scenario is characterized by a severe global recession that is accompanied by a global aversion to long-term fixed-income assets. As a result, long-term rates do not fall and yield curves steepen in the United States and the four countries/country blocks in the scenario. In turn, these developments lead to a broad-based and deep correction in asset prices—including in the corporate bond and real estate markets.

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

Figure 2. Unemployment rate in the severely adverse and adverse scenarios, 2013:Q1–2021:Q1

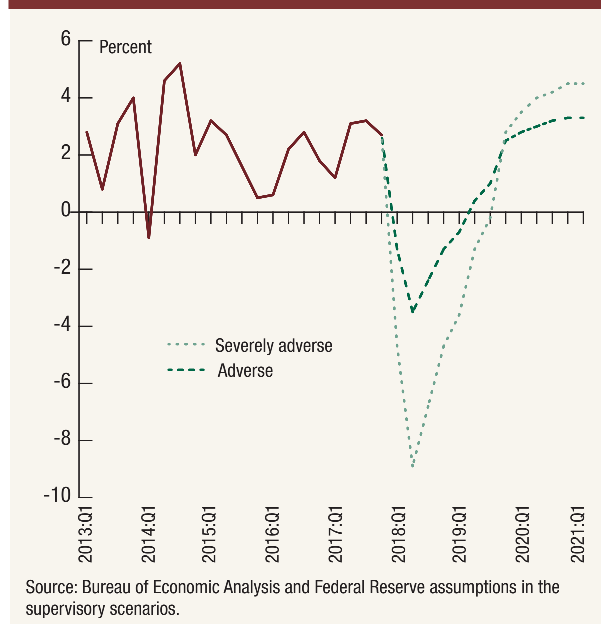


Source: Bureau of Labor Statistics and Federal Reserve assumptions in the supervisory scenarios.

[13] See Board of Governors of the Federal Reserve System (2018), "2018 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 2018), https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20180201a1.pdf for additional information and for the details of the supervisory scenarios.

[14] 12 CFR part 252, appendix A.

Figure 3. Real GDP growth rate in the severely adverse and adverse scenarios, 2013:Q1–2021:Q1

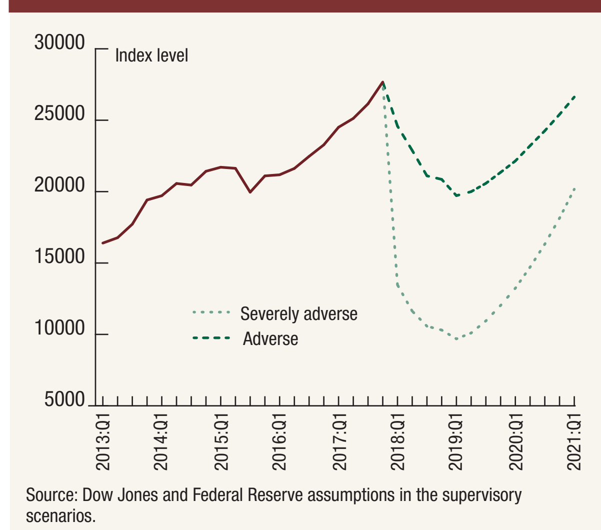


Source: Bureau of Economic Analysis and Federal Reserve assumptions in the supervisory scenarios.

rate increases almost 6 percentage points, to 10 percent, by the third quarter of 2019. Headline consumer price inflation falls below 1 percent at an annual rate in the second quarter of 2018 and rises to about 1½ percent at an annual rate by the end of the scenario.

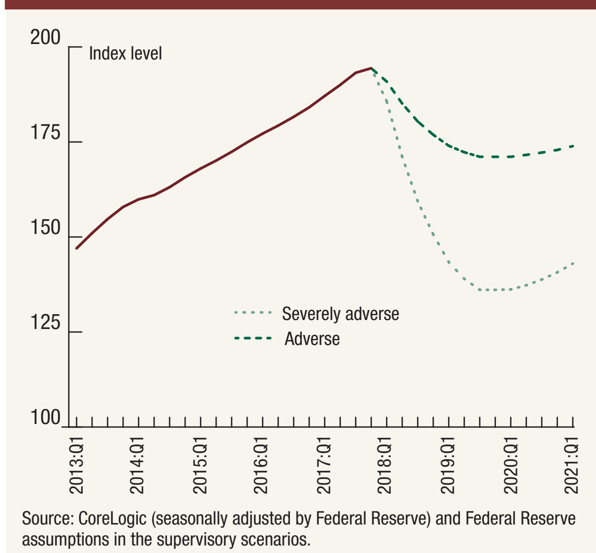
As a result of the severe decline in real activity, short-term Treasury rates fall and remain near zero

Figure 4. Dow Jones Total Stock Market Index, end of quarter, in the severely adverse and adverse scenarios, 2013:Q1–2021:Q1



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

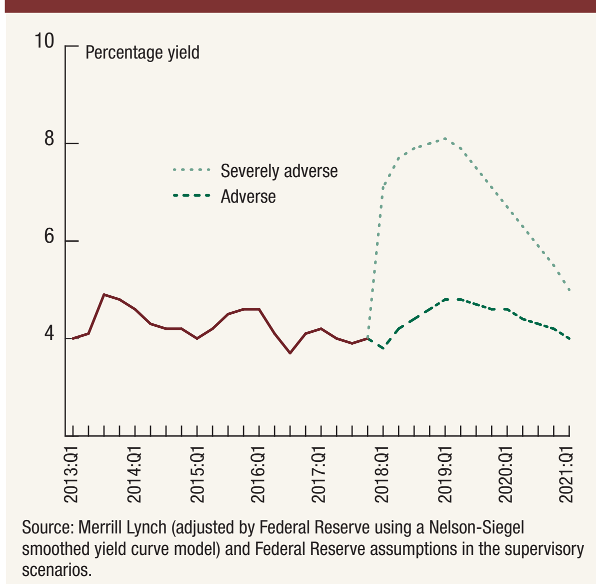
Figure 5. National House Price Index in the severely adverse and adverse scenarios, 2013:Q1–2021:Q1



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

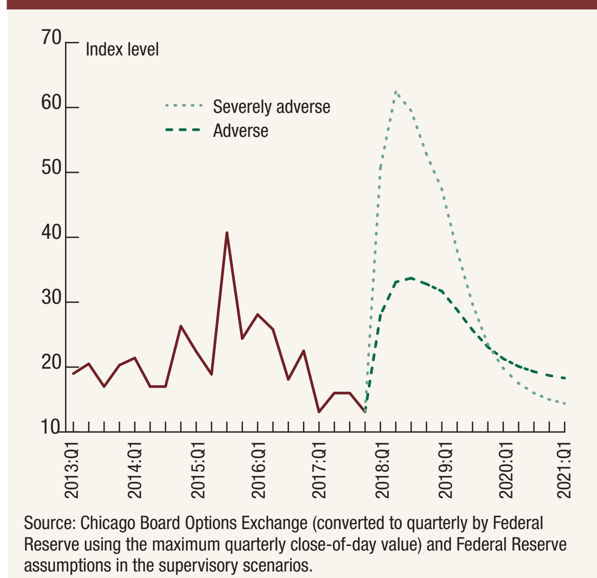
through the end of the scenario period. However, investor aversion to long-term fixed-income assets keeps 10-year Treasury yields unchanged through the scenario period. Financial conditions in corporate and real estate lending markets are stressed severely. The spread between yields on investment-grade corporate bonds and yields on long-term Treasury securities widens to 5¾ percentage points by the start of 2019, while the spread between mortgage rates and

Figure 6. U.S. BBB corporate yield, quarterly average in the severely adverse and adverse scenarios, 2013:Q1–2021: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, 2013:Q1–2021: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.

10-year Treasury yields widens to about 3½ percentage points over the same time period.

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

The international component of this scenario features a sharp global downturn, with severe recessions in the euro area, the United Kingdom, and Japan, and a shallow and brief recession in developing Asia. As a result of the sharp contraction in economic activity, all foreign economies included in the scenario experience a decline in consumer prices, with Japan experiencing a more significant deflation that persists through the end of the scenario period. 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.

The severely adverse scenario used in the 2018 stress test cycle features a more severe downturn in the U.S. economy as compared to the 2017 scenario. This increase in severity reflects the Federal Reserve's scenario design framework for stress testing, which includes elements that create a more severe test of the resilience of large firms when current economic conditions are especially strong. Under this framework, the unemployment rate in the severely adverse scenario will reach a peak of at least 10 percent, which leads to a progressively greater increase in the unemployment rate if the starting unemployment rate is below 6 percent. Furthermore, the 2018 scenario incorporates a steepening of the yield curve and a deeper correction in prices for a broad set of assets, including equities, housing, and commercial real estate. The international dimension of the scenario shows a recessionary episode that, relative to last year's scenario, is more severe in developing Asia and Japan but less severe in the euro area and the United Kingdom.

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 rapid declines in long-term rates and flattening 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 2018. Real GDP falls slightly more than 2¼ percent from the pre-recession peak in the fourth quarter of 2017 to the recession trough in the first quarter of 2019, while the unemployment rate rises steadily, peaking at 7 percent in the third quarter of 2019. The U.S. recession is accompanied by an initial fall in inflation in the first two quarters of 2018. The rate of increase in consumer prices then rises steadily before leveling off at around 2 percent by the second half of 2019.

Reflecting weak economic conditions, short-term interest rates in the United States decline to nearly zero, where they remain for the rest of the scenario period. Yields on 10-year Treasury securities drop to around ¾ of a percent in the first quarter of 2018 as the yield curve flattens, and then gradually rise to slightly less than 2 percent by the end of the scenario. Financial conditions tighten for corporations and households during the recession. Spreads between investment-grade corporate bond yields and 10-year Treasury yields gradually rise to about 3¾ percentage points by early 2019, while spreads

between mortgage rates and 10-year Treasury yields widen to about 2¾ percentage points over the same period.

Asset prices decline in the adverse scenario. Equity prices fall approximately 30 percent by early 2019, accompanied by a rise in equity market volatility. Nominal house prices and commercial real estate prices experience sustained declines; house prices fall 12 percent and commercial real estate prices fall 15 percent by the first quarter of 2020.

Following the recession, U.S. real activity picks up slowly at first and then gains momentum; growth in U.S. real GDP increases from ¾ of a percent in 2019 to about 3 percent in 2020. The unemployment rate declines modestly, to about 6¼ percent by the end of the scenario period. Consumer price inflation remains at roughly 2 percent through the end of the scenario period. Yields on 10-year Treasury securities continue to rise gradually to slightly less than 2 percent by the end of the scenario period.

Outside of the United States, the adverse scenario features moderate recessions in the euro area and the United Kingdom, a pronounced and protracted recession in Japan, and below-trend growth in developing Asia. Weakness in global demand results in slowing inflation in all of the foreign economies under consideration and the onset of deflationary episodes in Japan and—more modestly—developing Asia. 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 2017 adverse scenario is that the 2018 adverse scenario features lower long-term interest rates and a flatter yield curve across all of the economies included in the scenario. This different profile of interest rates is associated with a less pronounced decline in the U.S. equity price index in the 2018 scenario.

Global Market Shock and Counterparty Default Components

The Federal Reserve applied a global market shock to the trading portfolios of six firms with large trading and private equity exposures.[15] In addition, the Federal Reserve applied a counterparty default component, which assumes the default of a firm's largest counterparty under the global market shock, to the same six firms and two other firms with substantial trading, processing, or custodial operations.[16] 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.[17] The Federal Reserve published the global market shock for the adverse and severely adverse scenarios on February 1, 2018; the as-of date for the global market shock and the counterparty default is December 4, 2017.

The global market shock component for the severely adverse scenario is designed around three main elements: a sudden sharp increase in general risk premiums and credit risk, a rise and steepening of the U.S. yield curve, and a general selloff of U.S. assets relative to other developed countries. Markets that are more tightly linked to interest rates are more acutely affected. As an example, in general, corporate debt, residential mortgage-backed securities (RMBS), and commercial mortgage-backed securities (CMBS) markets are more severely affected than U.S. equities. Some markets less closely linked to interest rates experience conditions that are generally comparable to the second half of 2008.

Globally, yield curves for government bonds of most developed countries undergo moderate tightening due to outflows from U.S. asset markets. The U.S. yield curve rises across the term structure, particularly at the long end. Emerging market yield curves generally rise due to heightened risk premiums. The U.S. dollar depreciates relative to other developed market currencies due to investor outflows.

15 The six firms 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).

16 The eight LISCC firms 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)(ii).

17 See CCAR 2018: Severely Adverse Global Market Shocks at https://www.federalreserve.gov/supervisionreg/files/ccar-2018-severely-adverse-market-shocks.xlsx, and CCAR 2018: Adverse Global Market Shocks at https://www.federalreserve.gov/supervisionreg/files/ccar-2018-adverse-market-shocks.xlsx.

The major differences relative to the 2017 severely adverse scenario include a rise and steepening of the U.S. yield curve; greater depreciation of the U.S. dollar relative to other advanced currencies; and more muted shocks to some credit-sensitive assets, such as non-agency RMBS. These differences are intended to reflect a general sell-off in U.S. markets—combined with a less severe stress to illiquid assets.

The eight firms with substantial trading or custodial operations were required to incorporate a counterparty default scenario component into their supervisory adverse and severely adverse stress scenarios for CCAR 2018. The counterparty default scenario component involves the instantaneous and unexpected default of the firm's largest counterparty.[18]

In connection with the counterparty default scenario component, these firms 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. The counterparty default scenario component is an add-on to the macroeconomic conditions and financial market environment specified in the Federal Reserve's adverse and severely adverse stress scenarios.

Each firm's largest counterparty is determined by net stressed losses, estimated by applying the global market shock to revalue non-cash securities financing activity assets (securities or collateral) posted or received; and for derivatives, to the value of the trade position and non-cash collateral exchanged. The as-of date for the counterparty default scenario component is December 4, 2017—the same date as the global market shock.[19]

The global market shock component for the adverse scenario simulates a marked decline in the economic outlook for developing Asian markets. As a result, sovereign credit spreads widen and currencies generally depreciate significantly in these markets. This shock spreads to other global markets, which results in increases in general risk premiums and credit risk. U.S. interest rates move lower across the term structure. Due to a sharp reduction in demand from developing Asia, most global commodity prices and currencies of commodity exporters decline significantly. Equity markets decline broadly.

The major difference relative to the 2017 adverse scenario is a regional focus on developing Asian markets. In general, the 2018 adverse scenario includes larger changes in price, spread, and volatility levels across most markets.

In addition, the Federal Reserve applied a supervisory market risk component to the six IHCs with significant trading activity[20] that will be subject to the full global market shock component starting in 2019. For this simplified version, the Federal Reserve applied exposure-level loss rates based on the losses used in the global market shock and large counterparty default components in 2014–17.

[18] In selecting its largest counterparty, a firm subject to the counterparty default component will not consider certain sovereign entities (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States) or designated central clearing counterparties.

[19] As with the global market shock, a firm subject to the counterparty default component may use data as of the date that corresponds to its weekly internal risk reporting cycle as long as it falls during the business week of the as-of date for the counterparty default scenario component (i.e., December 4–8, 2017). Losses will be assumed to occur in the first quarter of the planning horizon.

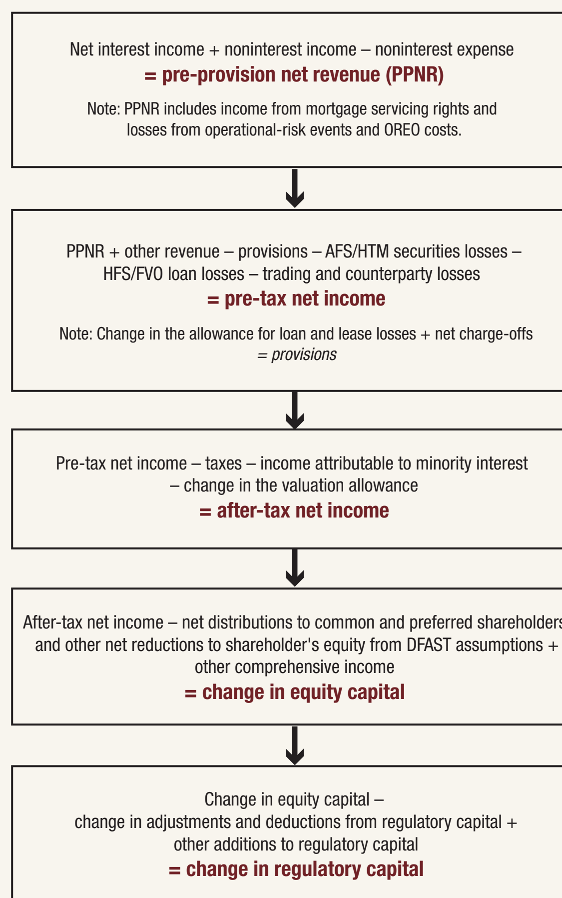
[20] The six firms subject to the supervisory market risk component are Barclays US LLC; Credit Suisse Holdings (USA), Inc.; DB USA Corporation; HSBC North America Holdings Inc.; RBC USA Holdco Corporation; and UBS Americas Holdings LLC. See 12 CFR 252.54(b)(2)(ii).

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 35 firms participating in DFAST 2018 by projecting the balance sheet, RWAs, net income, and resulting capital for each firm over a nine-quarter planning horizon, which for DFAST 2018 begins in the first quarter of 2018 and ends in the first quarter of 2020. 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.[21] Figure 8 illustrates the framework used to calculate changes in net income and regulatory capital.

Figure 8. Projecting net income and regulatory capital



Projected net income for the 35 firms 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 firms with large trading and private equity exposures; and
- losses from the default of the largest counterparty of firms with substantial trading, processing, or custodial operations.

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

[21] CFR part 217.

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 firms' 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 subject to OTTI, all or a portion of the difference between the fair value and amortized cost of the security must be recognized in earnings.[22] 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 firms subject to the full global market shock, the losses on trading and private equity positions as well as the credit valuation adjustment are projected assuming an instantaneous re-pricing of these positions under the global market shock (see Global Market Shock and Counterparty Default Components). Losses from the global market shock are assumed to occur in the first quarter of the planning horizon. No subsequent recoveries on these positions are assumed, nor are there offsetting changes such as reductions in compensation or other expenses in reaction to the global market shock. In addition, incremental losses from potential defaults of obligors underlying firms' trading positions are projected over the planning horizon.

For the eight firms 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.

For the six IHCs subject to the supervisory market risk component in 2018, losses associated with the supervisory market risk component are treated as an add-on to losses associated with the macroeconomic scenarios and 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 firms maintain their willingness to lend while demand for credit changes in response to conditions in the scenario. Firms 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 firm at the start of the planning horizon except for loan age. Where applicable, new loans are assumed to be current, and firms 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 firm's business plan, such as a planned merger, acquisition, consolidation, or divestiture.[23] Only divestitures that had been completed or contractually agreed to prior to April 5, 2018, 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 35 firms participating in DFAST 2018 and on models developed or selected by Federal Reserve staff and evaluated by an independent team

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

[23] The inclusion of the effects of such expected changes to a firm'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.

of Federal Reserve model reviewers. The models are intended to capture how the balance sheet, RWAs, and net income of each firm would be affected by the macroeconomic and financial conditions described in the supervisory scenarios, given the characteristics of the firms' loans and securities portfolios; trading, private equity, and counterparty exposures from derivatives and SFTs; business activities; and other relevant factors.[24]

Detail of model-specific methodology is provided in appendix B. Changes to supervisory models used in DFAST 2018 are described in box 1.

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 firms and reflect the industry-wide, 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 35 firms and the desire of the Federal Reserve not to assume that historical firm-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 firms.

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 firm-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 firm-specific indicator variables because available data are not sufficiently granular and a firm's own history, after controlling for structural changes over time, is proven to be more predictive of the firm's revenues and expenses under stress than industry-level history. In some other cases, such as the projections of trading and counterparty losses, sensitivities to risk factors and other information generated by the firms 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 firm 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 address other-

[24] 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 2018

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, 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 2018, the Federal Reserve enhanced the models that project other-than-temporary impairments (OTTI) for debt securities and losses on auto loans, first-lien mortgages, home equity loans, and credit cards. In addition, the Federal Reserve completed the phase-in of material enhancements to the model that estimates certain components of pre-provision net revenue (PPNR), updated the PPNR model to include a more granular model of deposit expenses, and made changes to the calculation of projected post-stress capital to account for the passage of the Tax Cuts and Jobs Act (see box 2).

In addition to the model changes described below, overall changes in securities, auto, first-lien, home equity, and credit card 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.

Enhancements to the PPNR Models

The Federal Reserve began a two-year transition to an updated PPNR model in DFAST 2017, and the updated model was fully in effect for DFAST 2018. The two-year phase-in policy was employed because the PPNR model enhancement materially affected the PPNR projections and post-stress capital ratios for a number of firms.[1]

The PPNR model for DFAST 2018 was also updated to include a more granular model of deposit expenses. The deposit expense model used in prior years was estimated on aggregate deposit data that included time, non-time, and foreign deposits. The more granular model adopted for DFAST 2018 estimates separate models for the three types of deposits (time, non-time, and foreign), allowing for different relationships with the macroeconomic variables. For most firms, the more granular deposit expense model resulted in lower deposit expenses and slightly higher PPNR.

Re-estimation of and Refinements to the Domestic Credit Card Model

The Federal Reserve regularly re-estimates model parameters and makes other model refinements resulting from ongoing model validation and performance monitoring. The frequency of model parameter re-estimation is informed by data availability and the results of performance monitoring. Although in most cases model re-estimations and refinements do not materially change projections, in some cases they can have material effects. For example, large changes in the data sample used for model estimation can result in material changes in projections.

For DFAST 2018, there were changes to the estimation sample for the probability of default component

[1] Starting in DFAST 2017, the Federal Reserve began to adhere to a policy of phasing in the most material model enhancements over two stress test cycles to smooth the effect on post-stress capital ratios. See 82 Fed. Reg. 59528 (Dec. 15, 2017).

(continued on next page)

than-temporary differences between amortized cost and fair market value due to credit impairment but generally do not intend to reflect temporary 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 results in OTTI charges. For all other debt securities, OTTI charges are projected using the statistical relationship between historically observed OTTI write-downs and measures of the fair value of the securities. 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 firm-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 firm's revenues and non-credit-related expenses, expressed as a share of relevant asset or liability balances, to firm 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 firms' historical losses related to

Box 1. Model Changes for DFAST 2018—*continued*

of the domestic credit card model and a number of other refinements were made to each of the three components of the model—probability of default, loss-given-default, and exposure-at-default. Collectively, the re-estimation and other refinements resulted in materially higher projected losses for firms with large bank card exposures. Consistent with stated policy, credit card loss estimates for the 2018 stress test reflect the average of the model used during DFAST 2017 and the updated model. Credit card loss estimates for the 2019 stress test will reflect the updated model only.[2]

Enhancements to the Model of Other-than-Temporary Impairments for Debt Securities

The model to project OTTI for debt securities was revised to increase simplicity and consistency across security types. Under the approach used in prior years, a number of different models were used to project OTTI for different types of debt securities, creating conceptual inconsistency. Under the approach used in DFAST 2018, a single conceptual framework is used to project OTTI on all debt securities.[3] The new framework is based on the historical relationship between OTTI write-downs on securities and measures of the fair value of the securities. That relationship is estimated on a comprehensive set of data on OTTI write-downs.[4] Projections of OTTI write-downs are made using this estimated relationship and projections of the fair value of securities from the supervisory fair value model.

The new OTTI framework represents a significant conceptual change to the Federal Reserve's approach to project OTTI on debt securities. The revised approach more consistently captures the OTTI response to the economic scenarios across the different asset types. This change resulted in small changes to post-stress capital ratios, both in the aggregate and for individual firms.

Re-estimation of and Refinements to Other Supervisory Models

In addition to the domestic credit card model, there were changes to the estimation samples for the auto loan, first-lien residential mortgage, and home equity models, and a number of other refinements were made to those models. Collectively, the re-estimation and other refinements resulted in higher projected losses for firms with large auto loan exposures, particularly exposures to subprime auto loans. For first-lien residential mortgages and home equity loans and lines of credit, the effects of the model changes are modest—model changes result in a small increase in the first-lien loss rate and a small decrease in the portfolio loss rate for home equity loans and lines of credit.

Both operational-risk models—the historical simulation model and the regression model—were re-estimated on updated operational-risk historical data. The model re-estimation and enhancements result in moderately higher operational-risk losses.

2 See footnote 1 above.

3 Losses on equity securities continue to be 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.

4 The dataset of OTTI write-downs is comprised of data from the FR Y-14Q as well as data from U.S. life insurance companies.

operational-risk events, which are modeled separately from other components of PPNR.

The balance sheet projections are derived using a common framework for determining the effect of the scenarios on balance sheet growth, and, as noted, incorporate assumptions about credit supply that limit aggregate credit contraction. These sets of projections are based on historical data from the Federal Reserve's Financial Accounts of the United States (Z.1) statistical release, which is a quarterly publication by the Federal Reserve of national flow of funds, consolidated balance sheet information for each firm, and additional data collected by the Federal Reserve.[25]

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. See box 2 for an explanation of modifications to the calculation of projected capital to account for the passage of the TCJA in December 2017.

Model Risk Management, Governance, and Validation

The Federal Reserve places great emphasis on the credibility of its supervisory stress testing process,

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

Box 2. Changes to the Capital Calculation to Account for the Tax Cuts and Jobs Act

The Tax Cuts and Jobs Act (TCJA), signed into law on December 22, 2017, contained a number of changes to the tax code that were incorporated into the projections of post-stress capital for DFAST 2018. The banking agencies have previously summarized the accounting and reporting requirement implications of the TCJA.[1] Certain elements of the TCJA—particularly those relating to taxes on foreign operations and earnings and deferred tax asset revaluation—had the immediate effect of reducing the amount of regulatory capital many firms held as of December 31, 2017.

The supervisory capital calculation was amended to conform to changes in the tax code that directly affect the supervisory post-stress capital projections. In prior years, supervisory projections applied a standard effective tax rate of 35 percent, consistent with the prevailing corporate tax rate, and incorporated net operating loss (NOL) carrybacks as well as NOL carryforwards. For DFAST 2018, the standard effective tax rate used in supervisory projections was lowered to 21 percent, to be consistent with the current corporate tax rate. In addition, supervisory calculations were changed to reflect the elimination of NOL carrybacks,[2] the new 80 percent limit on carryforward utilization, and the grandfathering of tax benefits resulting from pre-2018 NOLs.[3]

Effect of Capital Calculation Changes on Post-Stress Capital Ratios

The reduction in the corporate tax rate directly affects supervisory projections of after-tax net income. The lower corporate tax rate generally results in higher after-tax income and higher capital ratios for firms with positive pre-tax net income over the projection horizon. Conversely, a lower tax rate results in lower (more negative) after-tax income and lower capital ratios for firms with negative pre-tax net income over the projection horizon.

Under the pre-TCJA tax code, a firm with negative taxable income could recover its past two years of taxes paid (NOL carrybacks) before it began to generate new deferred tax assets from NOL carryforwards, which are fully deducted from regulatory capital. Consistent with the TCJA, NOL carrybacks are eliminated from the supervisory capital calculation. The elimination of NOL carrybacks generally results in higher DTAs from NOL and lower post-stress capital ratios for firms with positive taxes paid in the two years leading to the start of the stress test.

Similarly, the TCJA limitations on NOL carryforwards leads to a slower reduction of DTAs from NOLs when a firm is projected to earn positive net income in the stress test. Under the pre-TCJA tax code, a firm could offset up to 100 percent of taxable income using NOLs carried-forward from prior years, thus providing a net income boost as firms entered a recovery period. Under TCJA, a firm can only offset 80 percent of taxable income using NOL carryforwards.

Figure A depicts a hypothetical example of the impacts described above for two firms with the same pre-tax net income path in the stress test but different taxes paid leading up to it. As discussed above, prior to incurring losses, both firms exhibit higher after-tax net income resulting from the lower tax rate in the new tax code. During stressful conditions, the elimination of NOL carrybacks leads to lower after-tax income for both firms; however, when compared to the pre-TCJA tax code, the elimination of NOL carrybacks has a bigger impact on the firm with high taxes paid prior to the stress test. Finally, under TCJA, in the recovery period both firms have lower after-tax net income due to the 80 percent cap on NOL carryforwards. In total, under the pre-TCJA tax code, between two firms with same projected losses

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[1] See SR letter 18-2, "Interagency Statement on Accounting and Reporting Implications of the New Tax Law," January 18, 2018, https://www.federalreserve.gov/supervisionreg/srletters/sr1802.htm.

[2] Note that a firm may still consider the hypothetical reversal of temporary difference deferred tax assets (DTAs) based on taxes paid during a given year when determining the temporary difference DTAs subject to threshold deduction.

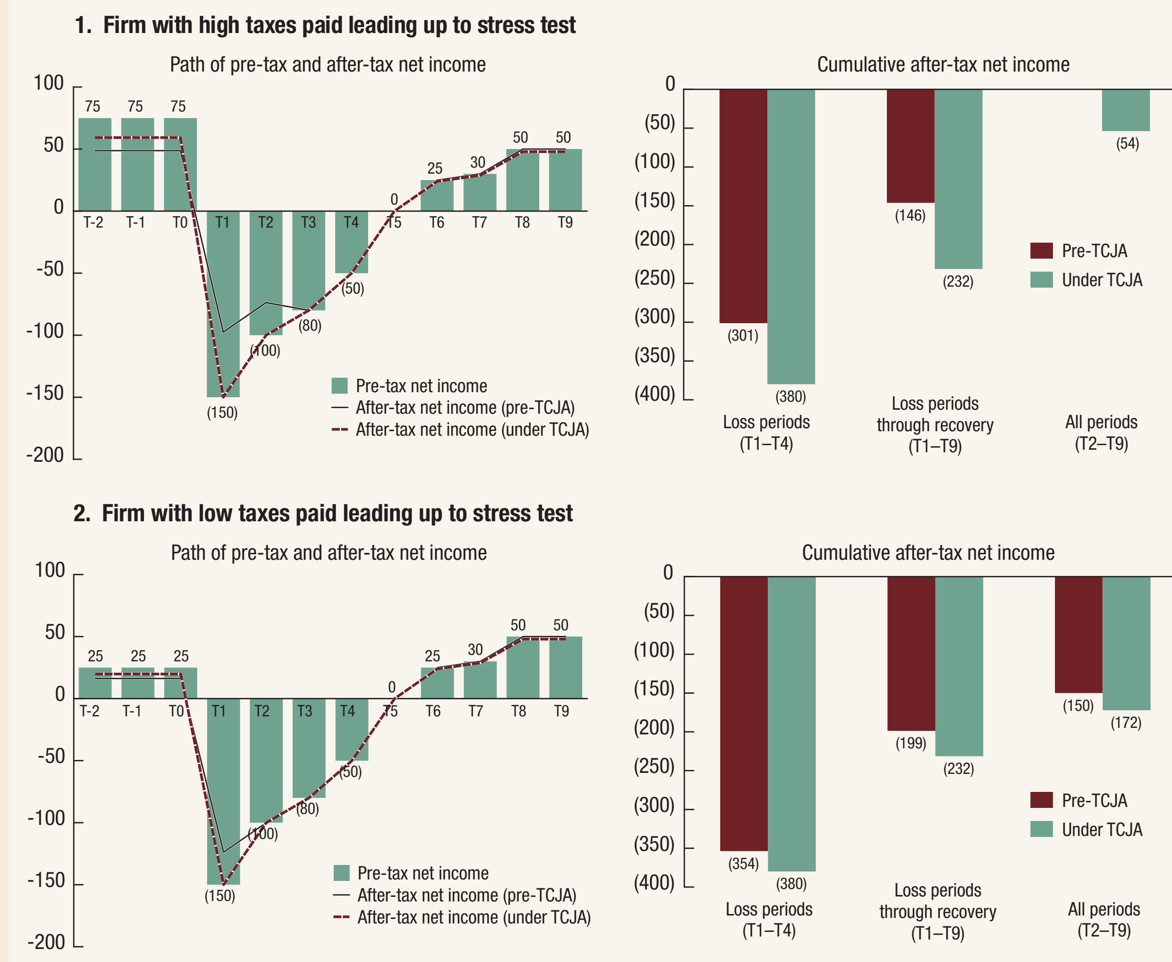
[3] Prior to the TCJA, NOLs could be carried forward to offset 100 percent of taxable income for up to 20 years. The TCJA lowered the offset percentage to 80 percent with no expiration.

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 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

Box 2. Changes to the Capital Calculation to Account for the Tax Cuts and Jobs Act—*continued*

Figure A. Hypothetical example of pre-tax and post-tax net income before and after the passage of TCJA



over the planning horizon, the firm with higher taxes paid in the two years leading up to the start of the stress test had significantly higher after-tax net income in the stress period than the firm with low taxes paid. Under TCJA, the two firms have identical paths of after-tax net income in the stress test.

In DFAST 2018, changes resulting from the TCJA had a negative effect on many firms' post-stress capital ratios, with the effects being material for some firms. On average, the impact of the changes was approximately –30 bps.

parties.[26] 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

26 A list of providers of the proprietary models and data used by the Federal Reserve in connection with DFAST 2018 is available in appendix B. In some instances, the Federal Reserve relies on firm-provided estimates in place of model output.

Group (MOG), the System Model Validation unit, and the Supervisory Stress Test Model Governance Committee.

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 firms;
- 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;
- 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,[27] 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 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, provides advice to the Federal Reserve on the validation program and activities.[28]

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, validation, and scenario design—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.[29] Each of the suggested improvements

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[27] 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.

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

[29] See *The Board Identified Areas of Improvement for Its Supervisory Stress Testing Model Validation Activities, and Opportuni-*

recommended by the OIG has 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.[30] 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 has already addressed a number of recommendations and continues to enhance the program consistent with other GAO recommendations.

To further enhance the credibility of the supervisory stress test, the Federal Reserve invited comment on a proposal to increase the transparency of the stress testing program in December 2017 (see box 3).

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 firm. 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.[31] 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 35 firms participating in DFAST 2018 submitted data as of December 31, 2017, through the FR Y-14M and FR Y-14Q reports in February, March, and April 2018. The same firms submitted the FR Y-14A reports, which also include projected data, on April 5, 2018.

Firms 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 firm'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 firm's tier 1 capital or $5 billion.[32] The portfolio categories are defined in the FR Y-14M and Y-14Q instructions. Each firm 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 firm does not submit data on its immaterial portfolio(s), the Federal Reserve will assign the median loss rate estimated across the set of firms with material portfolios.

While firms 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 firm-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 firm'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 firms. 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 percentile PPNR rate or 90th percentile loss rate) based on all available data reported by

ties Exist for Further Enhancement, October 29, 2015, https://oig.federalreserve.gov/reports/board-supervisory-stress-testing-model-validation-reissue-oct2015.pdf.

[30] 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.

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

[32] 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. 9308 (February 3, 2017), https://www.gpo.gov/fdsys/pkg/FR-2017-02-03/pdf/2017-02257.pdf.

Box 3. Notice of Proposed Rulemaking to Increase Transparency of Stress Testing Program

Through the Dodd-Frank Act supervisory stress test exercise, among other supervisory programs, the Federal Reserve promotes soundness and stability in the financial system and the U.S. economy. Regular, public disclosure of the supervisory stress test models, methodologies, and results enhances the credibility of the stress test. In addition, more transparency around the results and processes can lead to improvements in the Federal Reserve's approaches and provide information to the public that furthers the goal of maintaining market and public confidence in the financial system. For these reasons, the Federal Reserve publishes detailed information about its stress tests every year.

The annual disclosures of the stress test results and supervisory models represent a significant increase in the public transparency of large bank supervision in the United States when compared to the pre-crisis period. In addition to those public disclosures, the Federal Reserve has published information about its scenario design framework and annual letters detailing material model changes, and it hosts an annual symposium in which supervisors and financial industry practitioners share best practices in stress test modeling, model risk management, and governance.

The Federal Reserve is committed to finding additional ways to increase the transparency of its stress test to help the public better understand the workings of the stress test and thereby increase the credibility of the stress testing process and output. In December 2017, the Federal Reserve Board invited comment on a proposal designed to increase the transparency of the supervisory stress test while maintaining the Federal Reserve's ability to test the resilience of the nation's largest and most complex banks.[1]

The proposal has three elements. First, the proposed enhanced model disclosure would include the release of more detailed information about supervisory models, including the publication of portfolios of hypothetical loans and loss rates for those portfolios. Second, a proposed "Stress Testing Policy Statement" describes the Board's approach to the development, implementation, use, and validation of the supervisory stress test models and methodologies. Third, proposed amendments to the Scenario Design Policy Statement (originally published in November 2013) would increase counter-cyclicality in scenario design, clarify the Board's approach to setting the path of the unemployment rate and house prices in the macroeconomic scenarios, and provide notice that the Federal Reserve is exploring the possibility of incorporating stress to the cost of wholesale funding in the supervisory stress test scenarios. Together, these three elements of the proposal represent a notable increase in the transparency of the Federal Reserve's stress test.

The Federal Reserve Board received comments on the proposal in the first quarter of 2018 and is currently reviewing comments and considering ways to amend the proposals to be responsive to those comments.

[1] See https://www.federalreserve.gov/newsevents/pressreleases/bcreg20171207a.htm.

firms 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.

To project post-stress capital ratios for the Dodd-Frank Act supervisory stress tests, the Federal Reserve uses a standardized set of capital action assumptions that are specified in the Dodd-Frank Act stress test rules. Generally, common stock dividend payments are assumed to continue at the same level as the previous year. Scheduled dividend, interest, or principal payments on any other capital instrument eligible for inclusion in the numerator of

Table 1. Applicable capital ratios and calculations for firms in the 2018 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

a regulatory capital ratio are assumed to be paid, and repurchases of such capital instruments are assumed to be zero.

The capital action assumptions do not include issuances of new common stock or preferred stock, except for issuances related to expensed employee compensation or in connection with a planned merger or acquisition, the extent that the merger or acquisition is reflected in the firm's pro forma balance sheet estimates.[33] The projection of post-stress capital ratios includes capital actions and other changes in the balance sheet associated with any business plan changes under a given scenario.

For the first quarter of the planning horizon, capital actions for each firm are assumed to be the actual actions taken by the firm during that quarter. Over the remaining eight quarters, common stock dividend payments are generally assumed to be the average of the first quarter of the planning horizon and the three preceding calendar quarters.[34] Also, firms 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.

The five regulatory capital measures in DFAST 2018 are the common equity tier 1, tier 1 risk-based capital, total risk-based capital, tier 1 leverage, and supplementary leverage ratios. A firm'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 firm'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.[35]

[33] See 12 CFR 252.56(b).

[34] 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 firm's pro forma balance sheet estimates. This assumption provides consistency with assumptions regarding issuance of common stock.

[35] See 12 CFR 252.42(m); 80 Fed. Reg. 75419 (Dec. 2, 2015); 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 35 firms participating in DFAST 2018 under the severely adverse and adverse scenarios. Results are presented both in the aggregate for the 35 firms and for individual firms. 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 firms as a group to the stressed economic and financial market conditions contained in those scenarios. The range of results across individual firms reflects differences in business focus, asset composition, revenue and expense sources, and portfolio risk characteristics. The comprehensive results for individual firms are reported in appendix C.

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

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

Severely Adverse Scenario

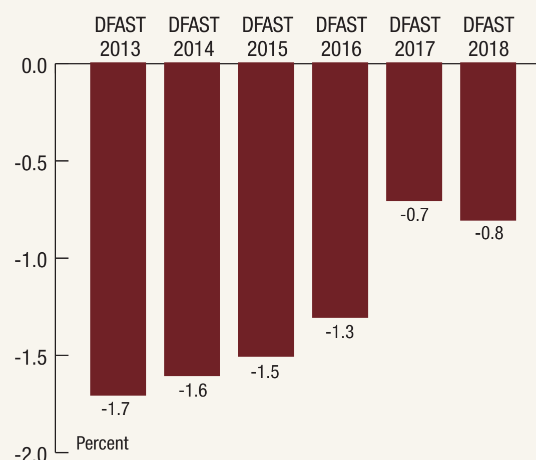
In the aggregate, capital ratios at the beginning of the projection horizon were lower than starting capital ratios in the DFAST 2017 exercise, reflecting growth in firms' balance sheets as well as the effects of tax reform on firms' capital positions. The aggregate decline in pre-tax net income over the projection horizon was greater than the decline in pre-tax net income in the DFAST 2017 exercise. However, as a percent of aggregate total assets, the decline in pre-tax net income in DFAST 2018 is less than the decline in most of prior stress testing exercises since 2013 (see Figure 9). The decline in pre-tax net income as a percent of total assets is 0.8 percent in DFAST 2018, while the average decline in pre-tax net income in 2013–17 is 1.4 percent.

Under the severely adverse scenario, firms experienced a decline in OCI of $32 billion over the nine quarters of the planning horizon in DFAST 2018, compared to an increase of $2 billion in DFAST 2017. Relative to the DFAST 2017 exercise, the higher long-term Treasury yield in the severely adverse scenario reduced unrealized gains on U.S. Treasury and agency securities, which had previously offset unrealized losses on other securities, and the greater widening of the corporate bond spread resulted in higher losses for some portfolios. The steeper yield curve also resulted in higher net interest income and higher PPNR in the aggregate.

The effects of the severely adverse scenario varied across firms of different sizes and business mixes.

As noted in box 2, certain elements of TCJA—particularly those relating to taxes of foreign operations and earnings and deferred tax asset revaluation—had the immediate effect of reducing the amount of regulatory capital many firms held as of December 31, 2017. In addition, the reduction in the corpo-

Figure 9. Pre-tax net income as a percent of average total assets, severely adverse scenario



Note: Pre-tax net income as a percent of average total assets is calculated for all firms subject to the supervisory stress test in each exercise.

rate tax rate and the elimination of NOL carrybacks affected supervisory projections of after-tax net income. In DFAST 2018, changes resulting from the TCJA had a negative effect on many firms' post-stress capital ratios, with the effects being material for some firms. On average, the impact of the changes was approximately −30 bps.

Stressed Regulatory Capital Ratios and Risk-Weighted Assets

Capital ratios are generally projected to decline under the severely adverse scenario. In the aggregate, each of the five capital and leverage ratios calculated in the fourth quarter of 2017 declines over the course of the planning horizon, with first-quarter 2020 levels ranging from 2.3 percentage points to 3.6 percentage points lower than at the start of the planning horizon (see table 2). Tables 4.A, 4.B, and 4.C present these ratios for each of the 35 firms.

The changes in post-stress capital ratios vary considerably across firms (see figure 11). 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.

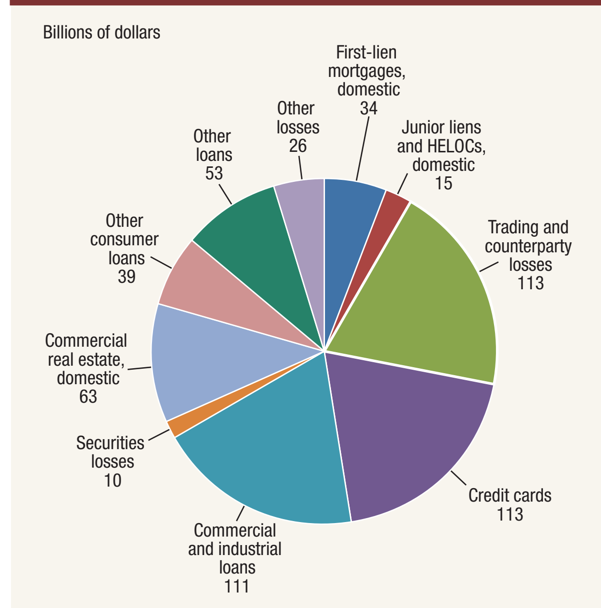
Projected Losses

The Federal Reserve projects that the 35 firms as a group would experience significant losses on loans and other positions under the severely adverse scenario. In this scenario, losses are projected to be $578[36] billion for the 35 firms in the aggregate over the nine quarters of the planning horizon. These losses include

- $429 billion in accrual loan portfolio losses;
- $10 billion in OTTI and other realized securities losses;
- $113 billion in trading and/or counterparty losses at the 14 firms with substantial trading, processing, or custodial operations; and
- $26 billion in additional losses from items such as loans booked under the fair-value option (see table 2).

[36] Projected losses in figure 10 sum to $577 billion. Difference due to rounding.

Figure 10. Projected losses in the severely adverse scenario



The largest losses derive from two sources: (1) accrual loan portfolios and (2) trading and counterparty positions subject to the global market shock and counterparty default component. Together, these account for 94 percent of the projected losses for the 35 firms in the severely adverse scenario (figure 10).

Loan Losses

Projected losses on domestic residential mortgages, credit cards, and other consumer loans represent 47 percent of projected loan losses and 35 percent of total projected losses for the 35 firms (see table 2). This is consistent with the severely adverse scenario, which features high unemployment rates and significant declines in housing prices. For the fourth year in a row, commercial and industrial loan losses and credit card losses are the two largest categories of loan losses at $111 billion and $113 billion, respectively. Combined, commercial and industrial and credit cards represent 39 percent of total projected losses. Trading and counterparty losses, which include losses from supervisory market risk component in DFAST 2018, represent 20 percent of total projected losses.

For the 35 firms as a group, the nine-quarter cumulative loss rate for all accrual loan portfolios is 6.4 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 firms, ranging between 0.6 percent and 14.2 percent across these institutions (see table 7 and figure 12).

The differences in total loan loss rates across the firms reflect differences in the risk characteristics of the portfolios held by each firm with regard to both the type of lending of each portfolio and the loans within each portfolio. Loan portfolio composition matters because projected loss rates vary significantly by loan type. In the aggregate, nine-quarter cumulative loss rates vary between 2.7 percent on domestic first-lien mortgages and 14.4 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 credit spreads 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 firms (see table 7 and figures D.1 through D.7).[37] There are significant differences across firms 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 7.3 percent, the rates among firms with commercial and industrial loans vary from a low of 2.4 percent to a high of 24.4 percent. For credit card loans, the range of projected loss rates is from 9.1 percent to 21.2 percent, with a median of 14.7 percent.

Differences in projected loss rates across firms primarily reflect differences in loan and borrower characteristics. The composition of firms' loan portfolios shifted since the DFAST 2017 exercise, with corporate lending experiencing the most rapid growth. In the aggregate, risk in bank holdings declined modestly relative to DFAST 2017, due in part to improved macroeconomic conditions. However, pockets of risk grew in certain loan portfolios, such as corporate loan portfolios, and certain individual firms have increased risk in their holdings.

In addition, some firms 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 in general reduced by the amount of such write-downs. For these firms, projected loss rates will be lower than for firms that hold similar loans that have not been subject to purchase-related write-downs.

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

The severely adverse scenario results include $113 billion in trading losses from the global market shock at the 12 firms with large trading and private-equity exposures and losses from the counterparty default component at the 14 firms with substantial trading, processing, or custodial operations. Trading and counterparty losses range between $0.6 billion and $29 billion across the 14 firms (see table 5) subject to the full global market shock and the supervisory market risk component.

The relative size of losses across firms depends not on nominal portfolio size but rather on the specific risk characteristics of each firm'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 (December 4, 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 35 firms are projected to generate $492 billion in PPNR cumulatively over the nine quarters of the planning horizon, equal to 3.0 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

[37] 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 average outstanding balances over the planning horizon. See appendix B for more detail on the models used to project net income and stressed capital.

computer system or other operating disruptions.[38] In aggregate for the 35 firms, those operational risk losses of almost $135 billion this year are $26 billion higher this year than last year, but remain within the range of what has been projected in previous DFAST exercises.

The ratio of projected cumulative PPNR to average assets varies across firms (see figure 13). 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 firms focusing on credit card lending, reflecting the higher net interest income that credit cards generally produce relative to other forms of lending.[39] Importantly, lower PPNR rates do not necessarily imply lower net income, because the same business focus and revenue risk characteristics determining differences in PPNR across firms could also result in offsetting differences in projected losses across firms.

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 35 firms (see table 2 for aggregate). The projections are cumulative for the nine quarters of the planning horizon.

Of note, following U.S. GAAP, the net income projections incorporate loan losses indirectly through provisions, which equal projected loan losses plus the amount needed for the ALLL to be at an appropriate level at the end of each quarter. The $482 billion in total provisions includes $429 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 35 firms individually and for the firms as a group over the nine-quarter planning horizon. Projected net income before taxes (pre-tax net income) is an aggregate net loss of $139 billion over the planning horizon for the 35 firms.

The ratio of pre-tax net income to average assets for each of the 35 firms ranges from −2.9 percent to 2.8 percent (see figure 14). Projected cumulative net income for most of the firms (26 of 35) 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 14 firms subject to the global market shock, the supervisory market risk component, 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 firms and the other firms participating in DFAST 2018.

Final capital ratios for advanced approaches firms and other firms 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.

The interest rate path and credit spreads assumed in the scenario result in −$32 billion of OCI over the nine quarters of the planning horizon for advanced approaches firms and other firms that opt into advanced approaches treatment for AOCI. Reflecting the complete phase-in of portions of AOCI in the revised regulatory capital framework, −$89 billion in AOCI is included in post-stress regulatory capital in the severely adverse scenario as of the first quarter of 2020.

[38] These estimates are conditional on the hypothetical adverse and severely adverse scenario and on conservative assumptions. They are not a supervisory estimate of the firms' current or expected legal liability.

[39] As noted, credit card lending also tends to generate relatively high loss rates, so the higher PPNR rates at these firms do not necessarily indicate higher profitability.

Table 2. 35 participating firms

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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	8.7	7.9
Tier 1 capital ratio	13.9	10.3	9.5
Total capital ratio	16.3	12.8	12.1
Tier 1 leverage ratio	8.8	6.5	6.1
Supplementary leverage ratio	n/a	5.1	4.7

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	429.3	6.4
First-lien mortgages, domestic	34.3	2.7
Junior liens and HELOCs, domestic	15.4	4.9
Commercial and industrial[2]	111.3	7.3
Commercial real estate, domestic	63.4	8.3
Credit cards	112.7	14.4
Other consumer[3]	39.3	5.5
Other loans[4]	52.9	4.0

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	10,044.8	10,553.8

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	492.3	3.0
Other revenue[3]	0.0	
less		
Provisions	481.7	
Realized losses/gains on securities (AFS/HTM)	10.0	
Trading and counterparty losses[4]	113.0	
Other losses/gains[5]	26.1	
equals		
Net income before taxes	-138.5	-0.8
Memo items		
Other comprehensive income[6]	-31.8	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-53.2	-88.8

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. Those transitions are 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, 2018:Q1–2020:Q1
35 participating firms
Percent

Firm	Stressed ratios with DFA stress testing capital action assumptions
Ally Financial Inc.	6.8
American Express Company	7.8
Bank of America Corporation	7.9
The Bank of New York Mellon Corporation	9.0
Barclays US LLC	9.6
BB&T Corporation	7.9
BBVA Compass Bancshares, Inc.	7.6
BMO Financial Corp.	8.3
BNP Paribas USA, Inc.	7.9
Capital One Financial Corporation	5.7
Citigroup Inc.	7.2
Citizens Financial Group, Inc.	6.8
Credit Suisse Holdings (USA), Inc.	17.6
DB USA Corporation	12.2
Discover Financial Services	8.9
Fifth Third Bancorp	7.5
The Goldman Sachs Group, Inc.	5.6
HSBC North America Holdings Inc.	8.1
Huntington Bancshares Incorporated	8.1
JPMorgan Chase & Co.	7.2
KeyCorp	6.8
M&T Bank Corporation	7.5
Morgan Stanley	7.3
MUFG Americas Holdings Corporation	12.2
Northern Trust Corporation	11.7
The PNC Financial Services Group, Inc.	6.4
RBC USA Holdco Corporation	11.2
Regions Financial Corporation	8.1
Santander Holdings USA, Inc.	15.2
State Street Corporation	5.3
SunTrust Banks, Inc.	6.6
TD Group US Holdings LLC	11.2
UBS Americas Holding LLC	16.4
U.S. Bancorp	7.5
Wells Fargo & Company	8.6

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2018:Q1 to 2020: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 2017:Q4 and projected 2018:Q1–2020:Q1 under the severely adverse scenario: Advanced approaches firms

Percent

Firm	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio			Supplementary leverage ratio[1]		
	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum
American Express Company	9.0	8.7	7.8	10.1	9.7	8.8	11.8	11.3	10.5	8.6	8.3	7.6	n/a	7.1	6.6
Bank of America Corporation	11.9	8.3	7.9	13.4	9.9	9.5	15.9	12.4	12.3	8.6	6.3	6.1	n/a	5.0	4.9
The Bank of New York Mellon Corporation	11.9	12.5	9.0	14.2	14.6	11.2	15.1	15.8	12.3	6.6	6.7	5.3	n/a	6.2	4.8
Barclays US LLC	13.1	11.3	9.6	15.7	13.8	12.1	18.8	16.7	14.8	8.2	7.1	6.5	n/a	5.7	5.3
Capital One Financial Corporation	10.3	5.8	5.7	11.8	7.1	7.1	14.4	9.6	9.6	9.9	6.0	6.0	n/a	5.1	5.1
Citigroup Inc.	13.0	9.2	7.2	14.5	10.8	8.8	17.8	14.0	12.1	8.8	6.5	5.4	n/a	5.0	4.2
Credit Suisse Holdings (USA), Inc.[2]	24.7	20.4	17.6	24.7	21.0	18.2	24.8	21.1	18.3	7.3	7.6	6.7	n/a	7.4	6.6
DB USA Corporation	16.5	12.7	12.2	25.9	22.2	21.7	25.9	22.5	22.0	7.2	5.7	5.7	n/a	5.2	5.2
The Goldman Sachs Group, Inc.	12.1	6.9	5.6	14.1	8.7	7.3	16.8	11.4	10.2	8.4	5.1	4.4	n/a	3.5	3.1
HSBC North America Holdings Inc.	15.5	8.1	8.1	18.3	10.9	10.9	22.8	15.3	15.3	8.9	5.2	5.2	n/a	4.0	4.0
JPMorgan Chase & Co.	12.2	7.9	7.2	13.9	9.5	8.8	15.9	11.9	11.0	8.3	5.6	5.3	n/a	4.4	4.2
Morgan Stanley	16.5	8.9	7.3	18.9	11.1	9.4	21.7	13.6	12.2	8.3	4.7	4.3	n/a	3.7	3.3
Northern Trust Corporation	12.6	12.5	11.7	13.8	13.7	12.9	15.8	16.1	15.4	7.8	7.6	7.3	n/a	6.7	6.4
The PNC Financial Services Group, Inc.	10.4	7.1	6.4	11.6	8.2	7.6	13.7	10.6	10.1	9.9	7.0	6.5	n/a	5.9	5.5
State Street Corporation	11.9	8.4	5.3	15.0	11.9	9.0	16.0	12.7	10.0	7.3	5.5	4.2	n/a	4.9	3.7
TD Group US Holdings LLC	16.0	13.3	11.2	16.0	13.3	11.2	17.0	14.5	12.4	8.8	7.4	6.4	n/a	6.6	5.6
U.S. Bancorp	9.3	7.7	7.5	10.8	9.1	8.9	12.9	11.0	10.8	8.9	7.5	7.4	n/a	6.0	5.9
Wells Fargo & Company	12.3	9.9	8.6	14.1	11.6	10.4	17.5	14.9	13.8	9.4	7.6	6.9	n/a	6.5	5.9

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 are for the period 2018:Q1 to 2020: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.

[1] The supplementary leverage ratio is calculated only for firms subject to the advanced approaches.

[2] The minimum and ending leverage ratios and supplementary leverage ratios for Credit Suisse Holdings (USA), Inc., reflect an adjustment to average consolidated assets and to total leverage exposure, respectively, to account for asset migrations completed at the end of 2017:Q4.

n/a Not applicable.

Source: Federal Reserve estimates in the severely adverse scenario.

Table 4.B. Capital ratios, actual 2017:Q4 and projected 2018:Q1–2020:Q1 under the severely adverse scenario: Non-advanced approaches firms
Percent

Firm	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio		
	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum
Ally Financial Inc.	9.5	6.8	6.8	11.2	8.5	8.5	12.9	10.4	10.4	9.5	7.0	7.0
BB&T Corporation	10.2	8.0	7.9	11.9	9.6	9.5	13.9	12.0	11.9	9.9	7.8	7.8
BBVA Compass Bancshares, Inc.	11.8	7.6	7.6	12.1	8.0	8.0	14.4	10.3	10.3	10.0	6.4	6.4
BMO Financial Corp.	12.1	8.3	8.3	12.6	8.9	8.9	15.3	12.0	12.0	9.8	6.8	6.8
BNP Paribas USA, Inc.	12.4	7.9	7.9	12.8	8.4	8.4	15.0	10.9	10.9	9.3	5.9	5.9
Citizens Financial Group, Inc.	11.2	6.8	6.8	11.4	6.9	6.9	13.9	9.4	9.4	10.0	5.9	5.9
Discover Financial Services	11.6	9.5	8.9	12.3	10.1	9.5	13.8	11.8	11.3	10.8	8.8	8.5
Fifth Third Bancorp	10.6	7.5	7.5	11.7	8.5	8.5	15.2	11.8	11.8	10.0	7.1	7.1
Huntington Bancshares Incorporated	10.0	8.1	8.1	11.3	9.6	9.6	13.4	11.5	11.5	9.1	7.5	7.5
KeyCorp	10.2	6.8	6.8	11.0	7.6	7.6	12.9	9.8	9.8	9.7	6.6	6.6
M&T Bank Corporation	11.0	7.6	7.5	12.3	8.8	8.8	14.8	11.1	11.0	10.3	7.2	7.2
MUFG Americas Holdings Corporation	16.3	12.2	12.2	16.3	12.2	12.2	17.8	14.0	14.0	10.1	7.3	7.3
RBC USA Holdco Corporation	15.6	11.6	11.2	15.6	11.6	11.2	16.8	12.9	12.6	7.9	6.2	6.0
Regions Financial Corporation	11.1	8.1	8.1	11.9	8.9	8.9	13.8	11.0	11.0	10.0	7.3	7.3
Santander Holdings USA, Inc.	16.4	15.9	15.2	17.8	17.0	16.5	19.5	18.6	18.2	14.2	13.2	13.0
SunTrust Banks, Inc.	9.7	6.6	6.6	11.2	7.7	7.7	13.1	9.8	9.8	9.8	6.7	6.7
UBS Americas Holding LLC	21.9	17.4	16.4	24.3	21.6	20.6	25.8	24.0	22.9	8.9	7.8	7.5

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 are for the period 2018:Q1 to 2020:Q1.

Source: Federal Reserve estimates in the severely adverse scenario.

Table 4.C. Capital ratios, actual 2017:Q4 and projected 2018:Q1–2020:Q1 under the severely adverse scenario: 35 participating firms
Percent

Firm	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio			Supplementary leverage ratio[1]		
	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum
35 participating firms	12.3	8.7	7.9	13.9	10.3	9.5	16.3	12.8	12.1	8.8	6.5	6.1	n/a	5.1	4.7

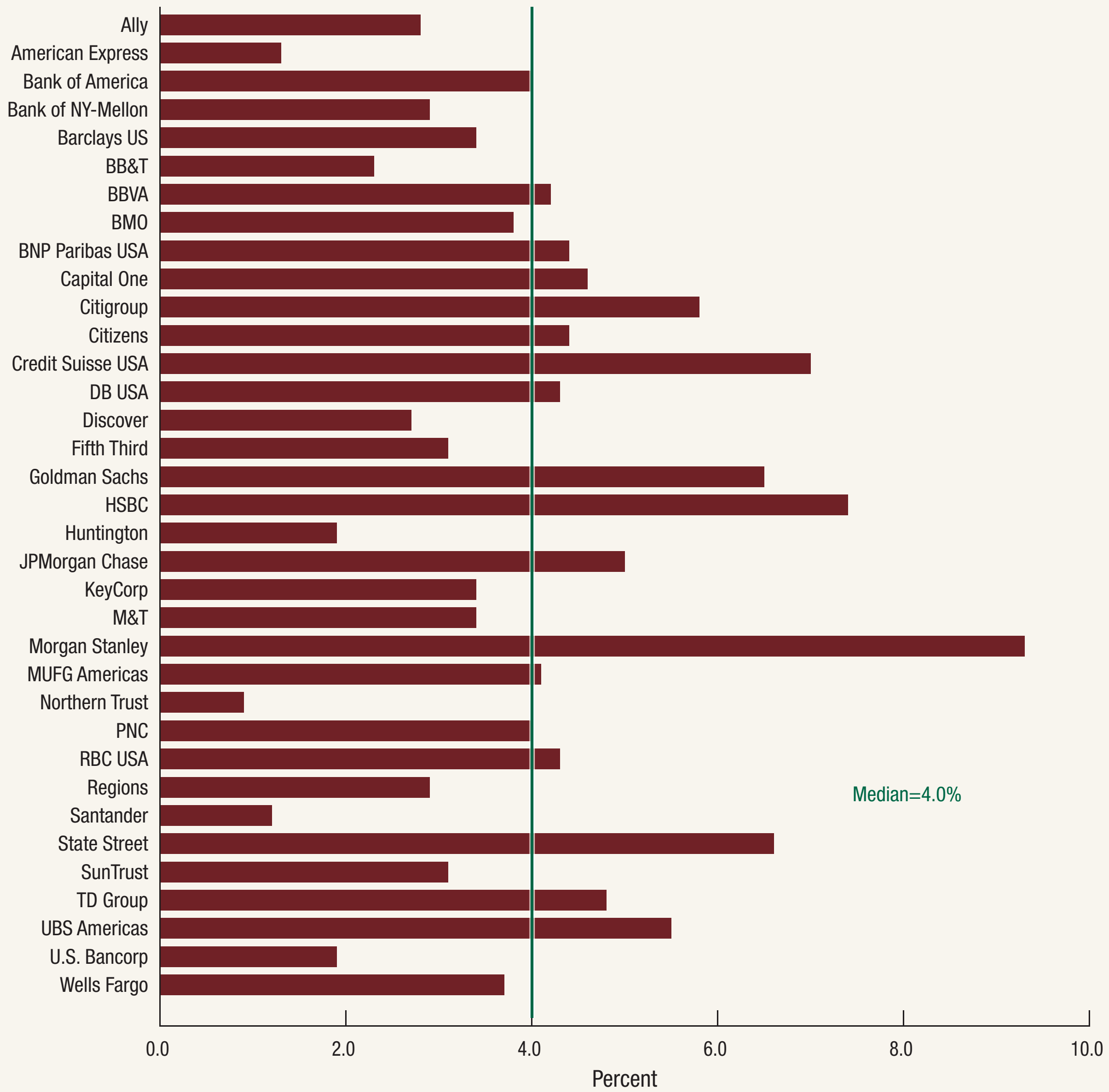
Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2018:Q1 to 2020: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.

[1] The supplementary leverage ratio is calculated only for firms subject to the advanced approaches.

n/a Not applicable.

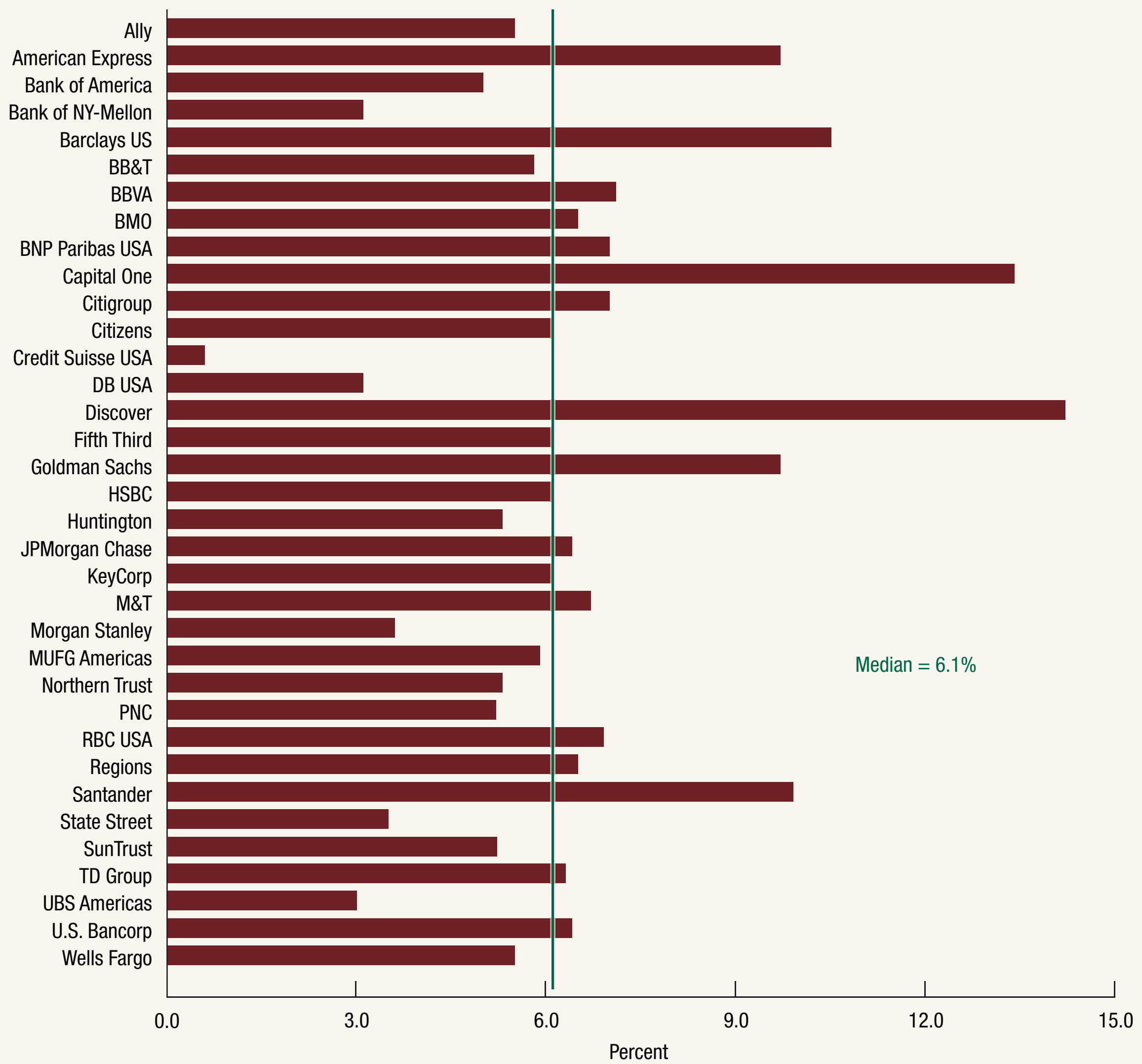
Source: Federal Reserve estimates in the severely adverse scenario.

Figure 11. Change from 2017:Q4 to minimum CET1 ratio in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of risk-weighted assets.

Figure 12. Total loan loss rates in the severely adverse scenario



Note: Estimates are for nine quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Table 5. Projected losses, revenue, and net income before taxes through 2020:Q1 under the severely adverse scenario: 35 participating firms

Billions of dollars

Firm	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] (2020:Q1)
Ally Financial Inc.	5.7	0.0	8.3	0.6	0.0	0.1	-3.3	0.0	0.0
American Express Company	21.5	0.0	16.2	0.0	0.0	0.0	5.2	0.0	-2.4
Bank of America Corporation	51.3	0.0	55.8	0.4	17.3	4.4	-26.6	-1.0	-7.2
The Bank of New York Mellon Corporation	11.6	0.0	2.4	0.3	1.9	0.0	6.9	-1.4	-3.8
Barclays US LLC	5.4	0.0	4.2	0.0	1.2	0.1	-0.1	0.0	-0.1
BB&T Corporation	9.5	0.0	9.7	0.0	0.0	0.0	-0.3	0.0	0.0
BBVA Compass Bancshares, Inc.	2.5	0.0	4.9	0.0	0.0	0.0	-2.4	0.0	0.0
BMO Financial Corp.	2.6	0.0	5.6	0.0	0.0	0.0	-3.1	0.0	0.0
BNP Paribas USA, Inc.	2.6	0.0	6.6	0.0	0.0	0.0	-4.0	0.0	0.0
Capital One Financial Corporation	32.0	0.0	39.2	0.2	0.0	0.3	-7.5	-1.2	-1.8
Citigroup Inc.	61.9	0.0	52.4	2.9	16.2	3.8	-13.4	-5.0	-38.9
Citizens Financial Group, Inc.	3.5	0.0	8.0	0.1	0.0	0.1	-4.6	0.0	0.0
Credit Suisse Holdings (USA), Inc.	1.6	0.0	0.1	0.0	3.5	0.1	-2.1	0.0	-0.2
DB USA Corporation	0.4	0.0	0.6	0.0	0.8	0.0	-1.0	0.0	-0.3
Discover Financial Services	14.8	0.0	14.5	0.0	0.0	0.0	0.3	0.0	0.0
Fifth Third Bancorp	4.3	0.0	6.1	0.2	0.0	0.0	-2.0	0.0	0.0
The Goldman Sachs Group, Inc.	6.1	0.0	11.3	0.0	13.3	6.4	-25.0	0.0	-1.9
HSBC North America Holdings Inc.	-0.6	0.0	4.6	0.0	0.8	0.3	-6.2	0.4	-0.3
Huntington Bancshares Incorporated	3.8	0.0	4.3	0.0	0.0	0.0	-0.6	0.0	0.0
JPMorgan Chase & Co.	71.5	0.0	68.5	1.0	29.4	1.2	-28.5	-6.7	-6.9
KeyCorp	3.8	0.0	6.1	0.0	0.0	0.2	-2.5	0.0	0.0
M&T Bank Corporation	5.4	0.0	6.7	0.0	0.0	0.0	-1.3	0.0	0.0
Morgan Stanley	3.0	0.0	5.9	0.0	11.7	6.1	-20.8	0.1	-3.0
MUFG Americas Holdings Corporation	3.1	0.0	5.6	0.1	0.0	0.1	-2.7	0.0	-0.1
Northern Trust Corporation	4.0	0.0	2.2	0.1	0.0	0.0	1.7	0.0	-0.4
The PNC Financial Services Group, Inc.	13.9	0.0	12.9	0.4	0.0	0.7	-0.1	-1.9	-2.1
RBC USA Holdco Corporation	2.1	0.0	3.7	0.0	0.6	0.0	-2.2	0.0	0.0
Regions Financial Corporation	4.2	0.0	6.0	0.1	0.0	0.0	-1.8	0.0	0.0
Santander Holdings USA, Inc.	8.0	0.0	7.1	0.0	0.0	0.1	0.8	0.0	0.0
State Street Corporation	5.9	0.0	1.0	0.4	3.4	0.0	1.0	-1.4	-2.4
SunTrust Banks, Inc.	6.1	0.0	8.5	0.1	0.0	0.3	-2.8	0.0	0.0
TD Group US Holdings LLC	10.7	0.0	11.0	0.4	0.0	0.0	-0.7	-1.9	-1.9
UBS Americas Holding LLC	3.1	0.0	2.5	0.0	0.6	0.0	0.0	0.0	0.0
U.S. Bancorp	20.8	0.0	19.8	0.0	0.0	0.0	1.1	0.1	-1.4
Wells Fargo & Company	85.8	0.0	59.4	2.6	12.2	1.6	10.1	-11.9	-13.6
35 participating firms	492.3	0.0	481.7	10.0	113.0	26.1	-138.5	-31.8	-88.8

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 firms and other firms 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 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 2018:Q1–2020:Q1 under the severely adverse scenario: 35 participating firms

Billions of dollars

Firm	Loan losses	First-lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial[1]	Commercial real estate, domestic	Credit cards	Other consumer[2]	Other loans[3]
Ally Financial Inc.	6.9	0.3	0.1	2.4	0.1	0.0	3.9	0.0
American Express Company	12.8	0.0	0.0	4.9	0.0	7.8	0.2	0.0
Bank of America Corporation	49.7	4.7	2.8	14.9	5.9	12.9	1.6	6.9
The Bank of New York Mellon Corporation	2.0	0.3	0.0	0.1	0.4	0.0	0.3	0.9
Barclays US LLC	4.0	0.0	0.0	0.0	0.0	3.9	0.0	0.1
BB&T Corporation	8.4	0.9	0.4	1.8	2.9	0.3	1.3	0.9
BBVA Compass Bancshares, Inc.	4.4	0.7	0.2	1.5	1.5	0.1	0.4	0.2
BMO Financial Corp.	4.8	0.3	0.3	2.2	0.9	0.1	0.1	0.9
BNP Paribas USA, Inc.	5.5	0.3	0.2	1.7	1.7	0.1	1.0	0.5
Capital One Financial Corporation	34.8	0.1	0.1	3.8	2.2	23.1	4.6	0.9
Citigroup Inc.	48.4	2.7	1.3	9.0	2.1	22.5	3.2	7.7
Citizens Financial Group, Inc.	6.8	0.4	0.7	2.3	1.5	0.2	1.3	0.3
Credit Suisse Holdings (USA), Inc.	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
DB USA Corporation	0.4	0.1	0.0	0.0	0.2	0.0	0.0	0.1
Discover Financial Services	12.2	0.0	0.0	0.0	0.0	10.3	1.9	0.0
Fifth Third Bancorp	5.7	0.5	0.3	2.2	1.4	0.4	0.4	0.4
The Goldman Sachs Group, Inc.	9.6	1.6	0.0	3.4	0.6	0.0	0.4	3.7
HSBC North America Holdings Inc.	4.1	0.5	0.1	2.0	0.9	0.1	0.0	0.5
Huntington Bancshares Incorporated	3.8	0.4	0.3	1.2	0.9	0.1	0.6	0.2
JPMorgan Chase & Co.	61.8	5.8	1.9	18.1	5.9	17.3	2.2	10.5
KeyCorp	5.4	0.3	0.4	2.2	1.5	0.1	0.4	0.5
M&T Bank Corporation	6.0	0.8	0.2	1.0	3.1	0.1	0.4	0.3
Morgan Stanley	4.6	0.6	0.0	1.1	1.0	0.0	0.1	1.8
MUFG Americas Holdings Corporation	4.8	1.4	0.1	1.4	1.4	0.0	0.2	0.4
Northern Trust Corporation	1.8	0.2	0.1	0.3	0.3	0.0	0.0	0.9
The PNC Financial Services Group, Inc.	11.6	0.5	0.4	5.6	2.7	0.7	0.7	0.9
RBC USA Holdco Corporation	3.1	0.2	0.1	1.2	0.8	0.0	0.1	0.6
Regions Financial Corporation	5.3	0.6	0.4	1.7	1.5	0.2	0.5	0.4
Santander Holdings USA, Inc.	8.1	0.3	0.3	0.9	1.2	0.1	4.8	0.5
State Street Corporation	0.8	0.0	0.0	0.3	0.0	0.0	0.0	0.6
SunTrust Banks, Inc.	7.5	1.0	0.7	2.3	1.4	0.2	1.5	0.4
TD Group US Holdings LLC	9.9	0.6	0.5	2.5	2.2	2.6	0.6	1.0
UBS Americas Holding LLC	1.8	0.3	0.0	0.6	0.0	0.0	0.1	0.7
U.S. Bancorp	18.3	1.4	0.9	5.5	4.2	3.5	1.4	1.3
Wells Fargo & Company	53.6	6.3	2.6	13.0	12.9	6.0	5.1	7.7
35 participating firms	429.3	34.3	15.4	111.3	63.4	112.7	39.3	52.9

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 2018:Q1–2020:Q1 under the severely adverse scenario: 35 participating firms

Percent of average balances[1]

Firm	Loan losses	First-lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial[2]	Commercial real estate, domestic	Credit cards	Other consumer[3]	Other loans[4]
Ally Financial Inc.	5.5	2.6	8.7	5.4	3.1	0.0	6.3	7.8
American Express Company	9.7	0.0	0.0	10.6	0.0	9.1	12.9	6.6
Bank of America Corporation	5.0	2.3	4.7	5.6	8.1	13.1	2.0	3.3
The Bank of New York Mellon Corporation	3.1	2.5	5.4	3.1	10.8	0.0	9.6	2.1
Barclays US LLC	10.5	0.0	0.0	24.4	7.1	14.7	12.9	0.9
BB&T Corporation	5.8	3.1	3.8	6.2	7.8	13.8	6.9	4.4
BBVA Compass Bancshares, Inc.	7.1	4.8	5.4	8.1	10.4	16.0	7.9	2.0
BMO Financial Corp.	6.5	3.3	9.6	7.3	8.9	12.5	2.6	5.6
BNP Paribas USA, Inc.	7.0	2.7	5.8	10.4	9.0	14.7	5.6	5.1
Capital One Financial Corporation	13.4	0.7	5.5	12.9	7.3	21.2	8.4	5.0
Citigroup Inc.	7.0	3.6	7.5	5.1	10.6	13.9	10.2	3.6
Citizens Financial Group, Inc.	6.1	2.5	4.8	7.2	9.8	12.3	5.6	4.3
Credit Suisse Holdings (USA), Inc.	0.6	0.0	0.0	0.0	0.0	0.0	12.9	0.6
DB USA Corporation	3.1	2.8	6.9	2.4	7.4	0.0	5.9	1.3
Discover Financial Services	14.2	3.3	14.8	15.1	18.8	15.0	11.1	6.5
Fifth Third Bancorp	6.1	3.3	4.7	5.9	12.8	18.4	3.9	4.3
The Goldman Sachs Group, Inc.	9.7	46.9	5.2	16.9	12.2	0.0	8.5	5.6
HSBC North America Holdings Inc.	6.1	3.0	5.1	7.5	8.8	14.7	7.1	4.6
Huntington Bancshares Incorporated	5.3	3.7	3.6	6.1	8.5	14.7	3.8	4.4
JPMorgan Chase & Co.	6.4	2.4	4.5	11.0	5.1	12.3	3.4	5.3
KeyCorp	6.1	3.9	4.3	6.7	9.3	13.2	5.8	3.2
M&T Bank Corporation	6.7	4.3	4.3	5.8	9.3	14.7	5.8	5.6
Morgan Stanley	3.6	2.2	5.2	11.3	7.3	0.0	0.6	3.1
MUFG Americas Holdings Corporation	5.9	3.7	4.6	8.2	8.3	14.7	15.3	4.6
Northern Trust Corporation	5.3	2.4	9.6	5.5	7.7	0.0	12.9	5.4
The PNC Financial Services Group, Inc.	5.2	1.8	2.0	7.0	7.5	14.4	3.3	2.6
RBC USA Holdco Corporation	6.9	2.5	5.7	12.8	8.2	14.7	11.0	4.6
Regions Financial Corporation	6.5	3.7	5.1	7.5	11.1	14.9	7.9	3.0
Santander Holdings USA, Inc.	9.9	3.4	4.6	5.8	7.4	13.9	18.0	6.6
State Street Corporation	3.5	0.0	0.0	7.3	6.3	0.0	0.6	2.8
SunTrust Banks, Inc.	5.2	3.6	6.7	5.5	7.3	13.8	5.2	2.5
TD Group US Holdings LLC	6.3	2.6	5.4	7.3	7.9	19.2	2.6	3.8
UBS Americas Holding LLC	3.0	2.4	0.0	10.2	5.4	14.7	0.6	4.1
U.S. Bancorp	6.4	2.2	5.3	7.2	11.0	15.6	3.4	5.0
Wells Fargo & Company	5.5	2.3	4.8	6.8	9.4	15.5	5.9	4.2
35 participating firms	6.4	2.7	4.9	7.3	8.3	14.4	5.5	4.0

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.

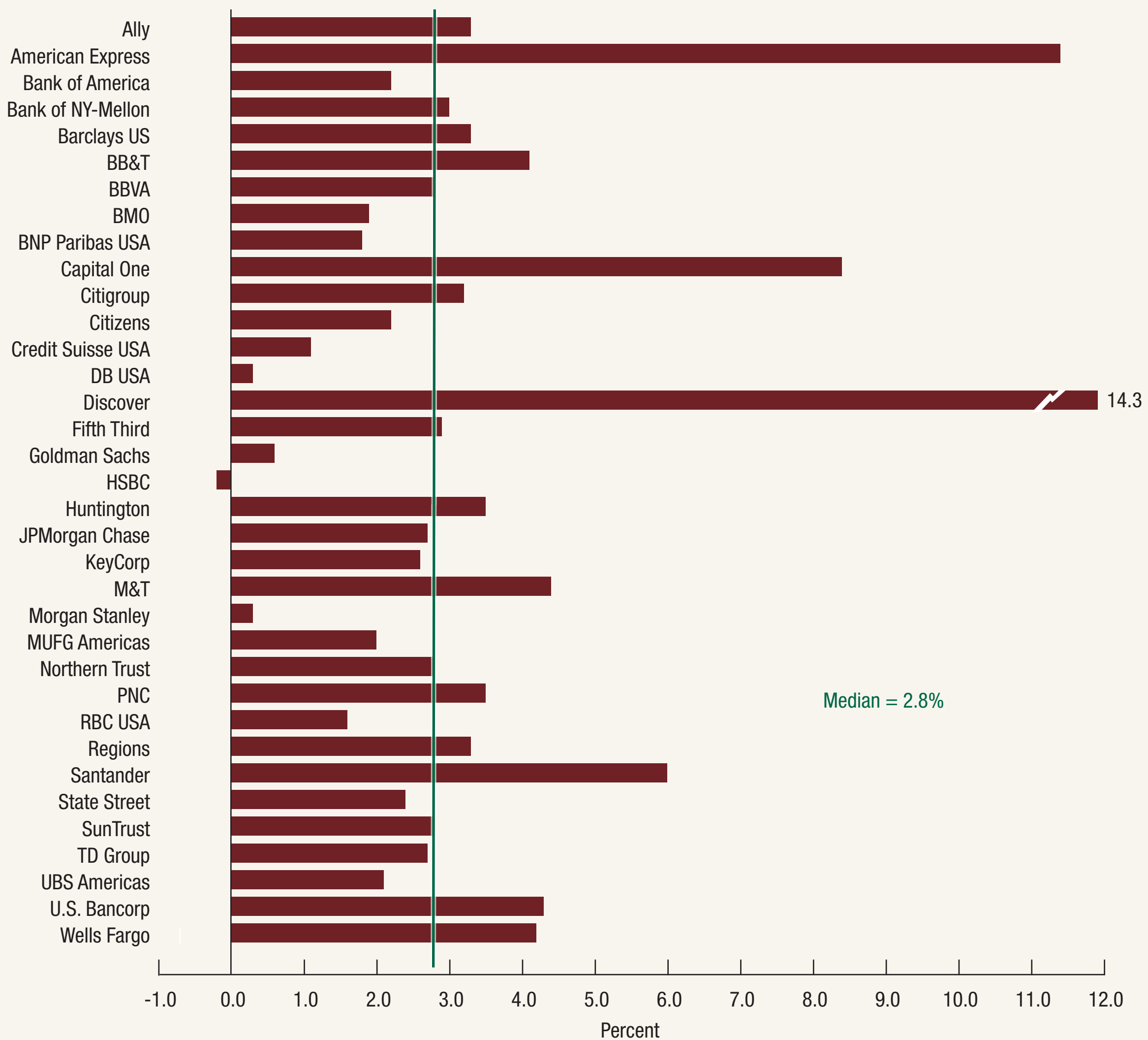
2 Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

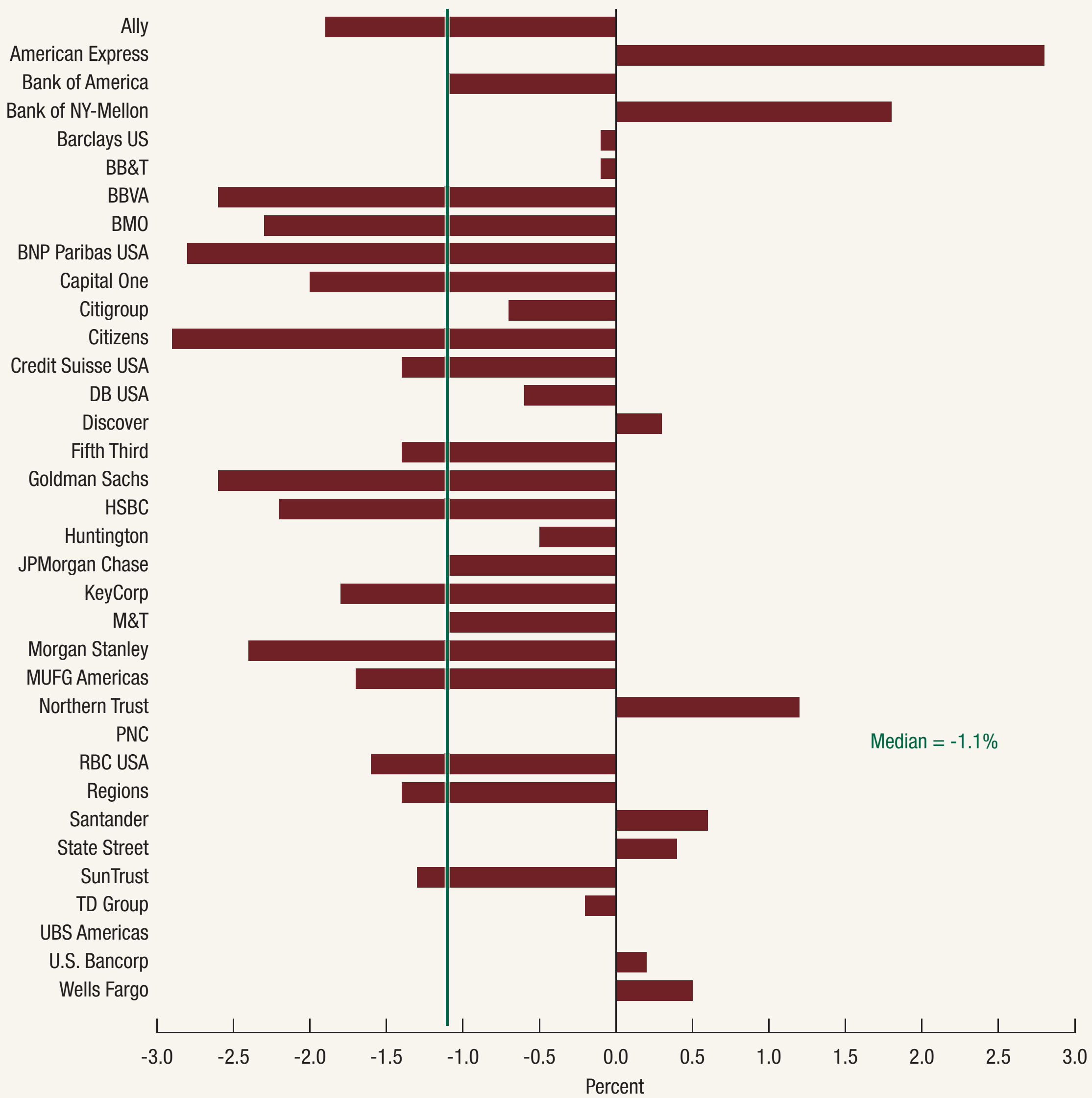
Source: Federal Reserve estimates in the severely adverse scenario.

Figure 13. PPNR rates in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average assets.

Figure 14. Pre-tax net income rates in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average assets. Pre-tax net income rates of PNC Financial Services Group, Inc., and UBS Americas Holding LLC presented as zero because of rounding.

Adverse Scenario

Stressed Capital Ratios and Risk-Weighted Assets

The adverse scenario projections suggest moderate declines in aggregate capital ratios for the 35 firms. The aggregate CET1 ratio is projected to fall 1.4 percentage points to its minimum over the planning horizon and to be 1.1 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 1.1 and 1.4 percentage points lower than at the start of the planning horizon, respectively. The tier 1 leverage ratio is projected to decline 0.8 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 generally 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 in part by 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 35 firms 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 $333 billion for the 35 firms over the nine-quarter planning horizon.

These losses include

- $263 billion in accrual loan losses;
- $3 billion in OTTI and other realized securities losses;
- $48 billion in losses from the global market shock and the largest counterparty default components; and
- $19 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 35 firms (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.

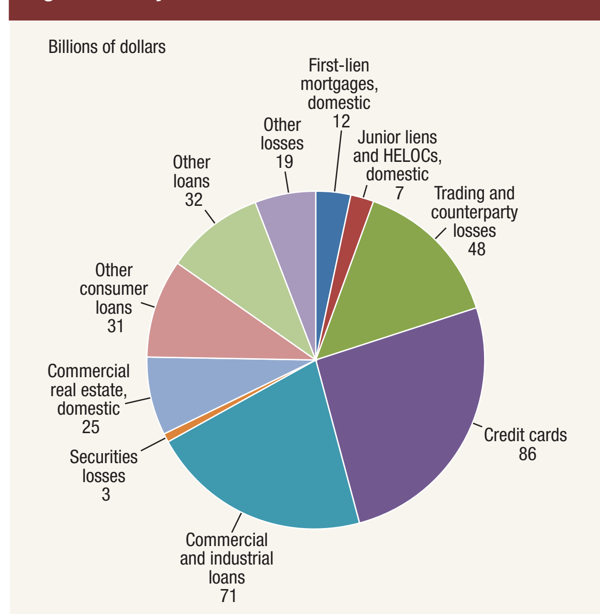
Loan Losses

As in the severely adverse scenario, the accrual loan portfolio is the largest source of losses in the adverse scenario, accounting for $263 billion of projected losses for the 35 firms. 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 35 firms 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 17 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 supervisory market risk component at the 12 firms with large trading and private-equity exposures and losses from the counterparty default component at the 14 firms with substantial trading, processing, or custodial operations

Figure 15. Projected losses in the adverse scenario



equal $48 billion under the adverse scenario. These losses are less than half of those projected under the severely adverse scenario, reflecting the less severe market shocks assumed in the adverse scenario. Trading and counterparty losses range between $0.4 billion and $13 billion across the 14 firms (see table 11) subject to the full global market shock and the supervisory market risk component.

Projected PPNR and Net Income

Aggregate PPNR is projected to equal $467 billion for the 35 firms under the adverse scenario, equal to 2.8 percent of average projected assets for these firms. Projected PPNR is lower than under the severely adverse scenario due to a steeper yield curve in the severely adverse scenario. As a result, net interest income in the adverse scenario is lower than in the severely adverse scenario. 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 35 firms (see figure 18).

In the aggregate, the 35 firms are projected to have cumulative pre-tax net income of $125 billion over the nine-quarter planning horizon under the adverse scenario. Twenty-three of the firms are projected to have positive cumulative pre-tax net income, though 24 firms experience at least one quarter of negative pre-tax net income during the planning horizon. The $272 billion in total provisions reported in table 8 includes $263 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 0.7 percent. Projected nine-quarter return on assets under the adverse scenario ranges between −1.3 and 4.6 percent for the 35 firms (see figure 19).

Results reflect $19 billion of OCI over the nine quarters of the planning horizon for advanced approaches firms and other firms that opt into advanced approaches treatment for AOCI in the adverse scenario. In the aggregate, −$38 billion in AOCI is included in post-stress regulatory capital as of the first quarter of 2020.

Table 8. 35 participating firms

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

Federal Reserve estimates: Adverse scenario

Capital ratios, actual 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	11.2	10.9
Tier 1 capital ratio	13.9	12.8	12.5
Total capital ratio	16.3	14.9	14.8
Tier 1 leverage ratio	8.8	8.0	7.9
Supplementary leverage ratio	n/a	6.4	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	262.9	3.9
First-lien mortgages, domestic	12.0	0.9
Junior liens and HELOCs, domestic	6.8	2.1
Commercial and industrial[2]	70.6	4.6
Commercial real estate, domestic	25.2	3.3
Credit cards	85.8	10.9
Other consumer[3]	30.7	4.3
Other loans[4]	31.8	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	10,044.8	10,846.0

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	466.7	2.8
Other revenue[3]	0.0	
less		
Provisions	271.6	
Realized losses/gains on securities (AFS/HTM)	2.8	
Trading and counterparty losses[4]	48.2	
Other losses/gains[5]	18.9	
equals		
Net income before taxes	125.0	0.7
Memo items		
Other comprehensive income[6]	19.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-53.2	-38.0

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

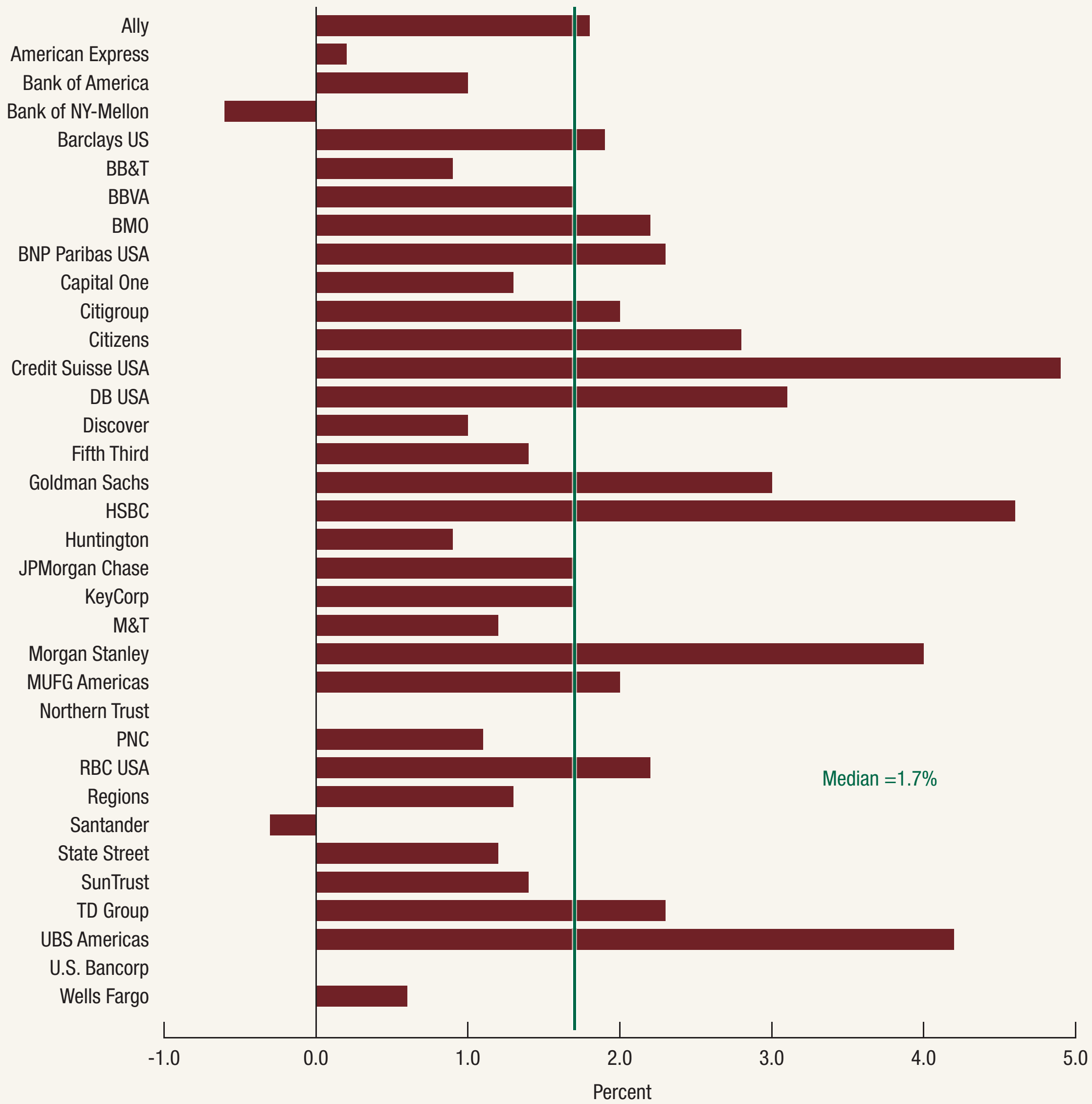
Table 9. Projected minimum common equity tier 1 ratio under the adverse scenario, 2018:Q1–2020:Q1
35 participating firms
Percent

Firm	Stressed ratios with DFA stress testing capital action assumptions
Ally Financial Inc.	7.7
American Express Company	8.8
Bank of America Corporation	10.9
The Bank of New York Mellon Corporation	12.6
Barclays US LLC	11.2
BB&T Corporation	9.3
BBVA Compass Bancshares, Inc.	10.1
BMO Financial Corp.	9.9
BNP Paribas USA, Inc.	10.0
Capital One Financial Corporation	9.0
Citigroup Inc.	11.0
Citizens Financial Group, Inc.	8.4
Credit Suisse Holdings (USA), Inc.	19.8
DB USA Corporation	13.3
Discover Financial Services	10.6
Fifth Third Bancorp	9.2
The Goldman Sachs Group, Inc.	9.1
HSBC North America Holdings Inc.	10.9
Huntington Bancshares Incorporated	9.1
JPMorgan Chase & Co.	10.6
KeyCorp	8.4
M&T Bank Corporation	9.8
Morgan Stanley	12.5
MUFG Americas Holdings Corporation	14.3
Northern Trust Corporation	12.5
The PNC Financial Services Group, Inc.	9.3
RBC USA Holdco Corporation	13.4
Regions Financial Corporation	9.8
Santander Holdings USA, Inc.	16.7
State Street Corporation	10.6
SunTrust Banks, Inc.	8.3
TD Group US Holdings LLC	13.7
UBS Americas Holding LLC	17.7
U.S. Bancorp	9.3
Wells Fargo & Company	11.7

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2018:Q1 to 2020: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.

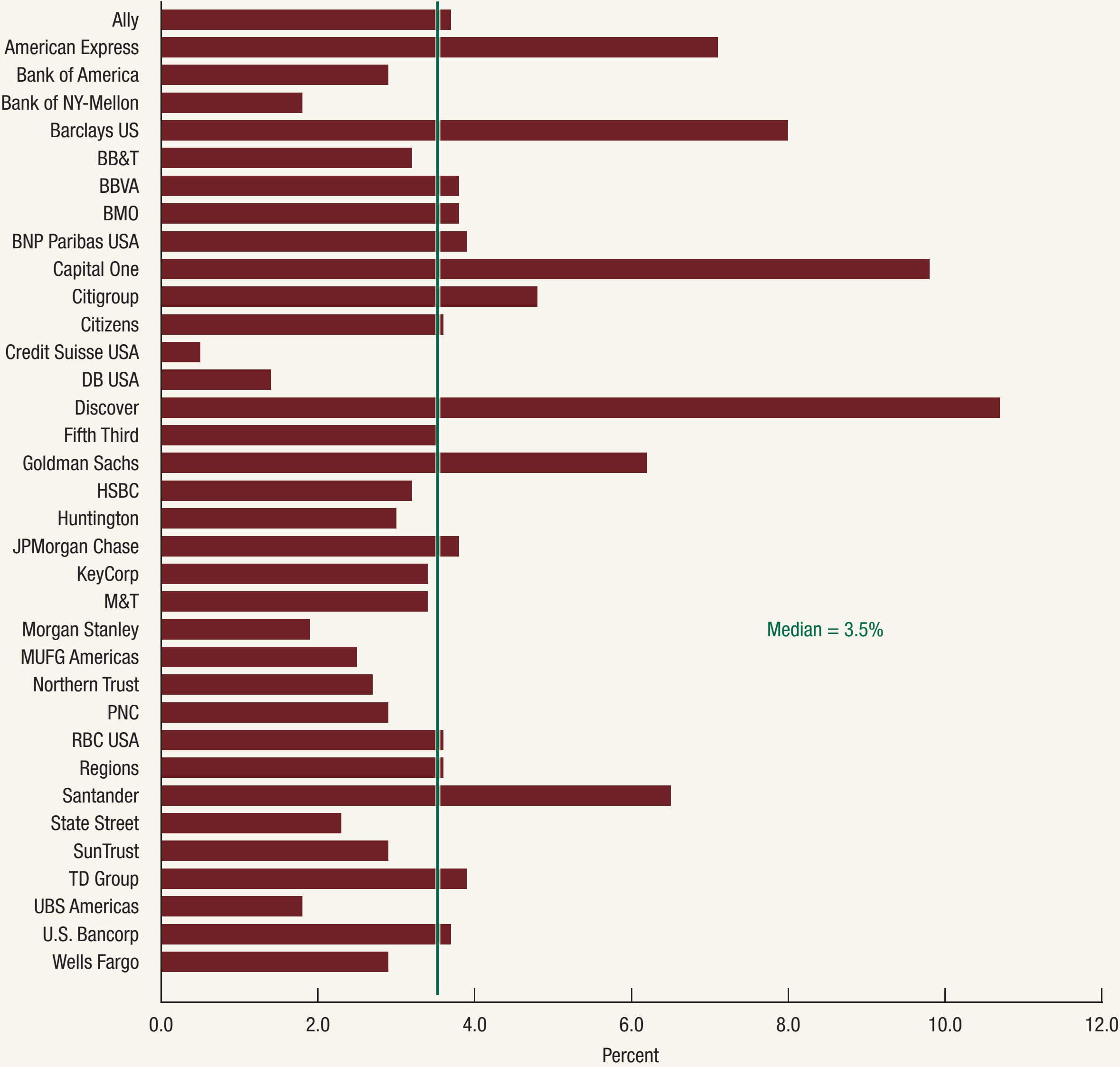
Source: Federal Reserve estimates in the adverse scenario.

Figure 16. Change from 2017:Q4 to minimum CET1 ratio in the adverse scenario



Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of risk-weighted assets.

Figure 17. Total loan loss rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Table 10.A. Capital ratios, actual 2017:Q4 and projected 2018:Q1–2020:Q1 under the adverse scenario: Advanced approaches firms

Percent

Firm	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio			Supplementary leverage ratio[1]		
	Actual 2017:Q4	Ending	Mini-mum	Actual 2017:Q4	Ending	Mini-mum	Actual 2017:Q4	Ending	Mini-mum	Actual 2017:Q4	Ending	Mini-mum	Actual 2017:Q4	Ending	Mini-mum
American Express Company	9.0	10.8	8.8	10.1	11.8	9.8	11.8	13.3	11.5	8.6	9.9	8.5	n/a	8.6	7.4
Bank of America Corporation	11.9	10.9	10.9	13.4	12.5	12.5	15.9	14.7	14.7	8.6	7.9	7.9	n/a	6.4	6.4
The Bank of New York Mellon Corporation	11.9	14.1	12.6	14.2	16.2	14.7	15.1	17.2	15.7	6.6	7.4	6.9	n/a	6.8	6.4
Barclays US LLC	13.1	12.9	11.2	15.7	15.3	13.7	18.8	17.6	16.0	8.2	7.9	7.3	n/a	6.4	5.9
Capital One Financial Corporation	10.3	9.3	9.0	11.8	10.7	10.4	14.4	13.0	12.8	9.9	8.9	8.8	n/a	7.6	7.5
Citigroup Inc.	13.0	12.0	11.0	14.5	13.6	12.6	17.8	16.4	15.8	8.8	8.2	7.7	n/a	6.3	5.9
Credit Suisse Holdings (USA), Inc.[2]	24.7	21.4	19.8	24.7	21.9	20.3	24.8	21.9	20.4	7.3	8.5	7.9	n/a	8.3	7.7
DB USA Corporation	16.5	13.6	13.3	25.9	22.4	22.2	25.9	22.6	22.4	7.2	6.1	6.0	n/a	5.5	5.5
The Goldman Sachs Group, Inc.	12.1	10.2	9.1	14.1	11.9	10.9	16.8	14.2	13.5	8.4	7.1	6.6	n/a	4.9	4.6
HSBC North America Holdings Inc.	15.5	10.9	10.9	18.3	13.6	13.6	22.8	17.4	17.4	8.9	6.4	6.4	n/a	5.0	5.0
JPMorgan Chase & Co.	12.2	10.8	10.6	13.9	12.4	12.2	15.9	14.3	14.1	8.3	7.3	7.3	n/a	5.7	5.7
Morgan Stanley	16.5	13.1	12.5	18.9	15.2	14.6	21.7	17.4	17.0	8.3	6.7	6.5	n/a	5.2	5.1
Northern Trust Corporation	12.6	12.6	12.5	13.8	13.8	13.7	15.8	15.8	15.8	7.8	7.6	7.6	n/a	6.6	6.6
The PNC Financial Services Group, Inc.	10.4	9.4	9.3	11.6	10.6	10.4	13.7	12.4	12.4	9.9	8.9	8.9	n/a	7.4	7.4
State Street Corporation	11.9	10.9	10.6	15.0	14.4	14.3	16.0	15.1	15.0	7.3	6.5	6.5	n/a	5.8	5.8
TD Group US Holdings LLC	16.0	14.4	13.7	16.0	14.4	13.7	17.0	15.3	14.8	8.8	7.9	7.7	n/a	7.0	6.8
U.S. Bancorp	9.3	9.4	9.3	10.8	10.8	10.7	12.9	12.3	12.3	8.9	8.7	8.7	n/a	7.0	7.0
Wells Fargo & Company	12.3	12.4	11.7	14.1	14.1	13.5	17.5	16.9	16.6	9.4	9.2	8.9	n/a	7.9	7.6

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 are for the period 2018:Q1 to 2020: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.

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

2 The minimum and ending leverage ratios and supplementary leverage ratios for Credit Suisse Holdings (USA), Inc., reflect an adjustment to average consolidated assets and to total leverage exposure, respectively, to account for asset migrations completed at the end of 2017:Q4.

n/a Not applicable.

Source: Federal Reserve estimates in the adverse scenario.

Table 10.B. Capital ratios, actual 2017:Q4 and projected 2018:Q1–2020:Q1 under the adverse scenario: Non-advanced approaches firms

Percent

Firm	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio		
	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum
Ally Financial Inc.	9.5	7.7	7.7	11.2	9.4	9.4	12.9	11.3	11.3	9.5	7.7	7.7
BB&T Corporation	10.2	9.3	9.3	11.9	11.0	10.9	13.9	13.0	13.0	9.9	8.8	8.8
BBVA Compass Bancshares, Inc.	11.8	10.1	10.1	12.1	10.4	10.4	14.4	12.6	12.6	10.0	8.3	8.3
BMO Financial Corp.	12.1	9.9	9.9	12.6	10.6	10.6	15.3	13.4	13.4	9.8	7.9	7.9
BNP Paribas USA, Inc.	12.4	10.0	10.0	12.8	10.5	10.5	15.0	12.9	12.9	9.3	7.4	7.4
Citizens Financial Group, Inc.	11.2	8.4	8.4	11.4	8.6	8.6	13.9	11.0	11.0	10.0	7.3	7.3
Discover Financial Services	11.6	12.2	10.6	12.3	12.8	11.2	13.8	14.4	12.7	10.8	10.9	10.1
Fifth Third Bancorp	10.6	9.3	9.2	11.7	10.3	10.3	15.2	13.1	13.1	10.0	8.5	8.5
Huntington Bancshares Incorporated	10.0	9.1	9.1	11.3	10.5	10.5	13.4	12.1	12.1	9.1	8.1	8.1
KeyCorp	10.2	8.4	8.4	11.0	9.2	9.2	12.9	11.0	11.0	9.7	7.9	7.9
M&T Bank Corporation	11.0	9.9	9.8	12.3	11.1	11.0	14.8	13.1	13.1	10.3	9.0	9.0
MUFG Americas Holdings Corporation	16.3	14.3	14.3	16.3	14.3	14.3	17.8	15.5	15.5	10.1	8.6	8.6
RBC USA Holdco Corporation	15.6	13.8	13.4	15.6	13.8	13.4	16.8	14.6	14.4	7.9	7.4	7.3
Regions Financial Corporation	11.1	9.8	9.8	11.9	10.5	10.5	13.8	12.4	12.4	10.0	8.6	8.6
Santander Holdings USA, Inc.	16.4	17.9	16.7	17.8	19.2	18.2	19.5	20.8	19.9	14.2	14.9	14.2
SunTrust Banks, Inc.	9.7	8.3	8.3	11.2	9.4	9.4	13.1	11.3	11.3	9.8	8.1	8.1
UBS Americas Holding LLC	21.9	18.7	17.7	24.3	22.7	22.0	25.8	24.8	23.5	8.9	8.2	8.0

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2018:Q1 to 2020:Q1.

Source: Federal Reserve estimates in the adverse scenario.

Table 10.C. Capital ratios, actual 2017:Q4 and projected 2018:Q1–2020:Q1 under the adverse scenario: 35 participating firms

Percent

Firm	Common equity tier 1 capital ratio			Tier 1 capital ratio			Total capital ratio			Tier 1 leverage ratio			Supplementary leverage ratio[1]		
	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum	Actual 2017:Q4	Ending	Minimum
35 participating firms	12.3	11.2	10.9	13.9	12.8	12.5	16.3	14.9	14.8	8.8	8.0	7.9	n/a	6.4	6.3

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 are for the period 2018:Q1 to 2020: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.

[1] 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 2020:Q1 under the adverse scenario: 35 participating firms

Billions of dollars

Firm	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 compre-hensive income[5]	AOCI included in capital[6] (2020:Q1)
Ally Financial Inc.	4.2	0.0	5.5	0.2	0.0	0.1	-1.5	0.0	0.0
American Express Company	20.6	0.0	11.8	0.0	0.0	0.0	8.8	0.1	-2.4
Bank of America Corporation	47.8	0.0	28.8	0.2	7.0	3.2	8.6	8.3	2.1
The Bank of New York Mellon Corporation	9.6	0.0	1.4	0.1	0.4	0.0	7.7	1.0	-1.3
Barclays US LLC	5.9	0.0	3.0	0.0	0.8	0.0	2.1	0.0	-0.1
BB&T Corporation	8.4	0.0	5.1	0.0	0.0	0.0	3.2	0.0	0.0
BBVA Compass Bancshares, Inc.	2.0	0.0	2.4	0.0	0.0	0.0	-0.4	0.0	0.0
BMO Financial Corp.	2.1	0.0	3.2	0.0	0.0	0.0	-1.1	0.0	0.0
BNP Paribas USA, Inc.	2.2	0.0	3.5	0.0	0.0	0.0	-1.4	0.0	0.0
Capital One Financial Corporation	29.6	0.0	27.4	0.1	0.0	0.2	1.9	0.4	-0.3
Citigroup Inc.	58.8	0.0	32.9	0.8	7.6	2.5	15.0	3.5	-30.5
Citizens Financial Group, Inc.	2.6	0.0	4.5	0.0	0.0	0.1	-2.0	0.0	0.0
Credit Suisse Holdings (USA), Inc.	2.1	0.0	0.1	0.0	1.9	0.1	0.0	0.0	-0.2
DB USA Corporation	0.7	0.0	0.3	0.0	0.5	0.0	-0.1	0.0	-0.3
Discover Financial Services	14.3	0.0	10.7	0.0	0.0	0.0	3.5	0.0	0.0
Fifth Third Bancorp	3.7	0.0	3.1	0.0	0.0	0.0	0.6	0.0	0.0
The Goldman Sachs Group, Inc.	16.0	0.0	6.9	0.0	6.5	5.4	-2.8	0.5	-1.3
HSBC North America Holdings Inc.	-0.6	0.0	2.1	0.0	0.5	0.2	-3.3	1.4	0.7
Huntington Bancshares Incorporated	2.9	0.0	2.3	0.0	0.0	0.0	0.5	0.0	0.0
JPMorgan Chase & Co.	73.0	0.0	37.2	0.4	13.1	0.9	21.5	-0.2	-0.4
KeyCorp	3.2	0.0	3.2	0.0	0.0	0.1	-0.1	0.0	0.0
M&T Bank Corporation	4.7	0.0	3.1	0.0	0.0	0.0	1.5	0.0	0.0
Morgan Stanley	8.1	0.0	3.1	0.0	4.2	4.0	-3.2	1.5	-1.6
MUFG Americas Holdings Corporation	2.3	0.0	2.3	0.0	0.0	0.1	0.0	0.0	-0.1
Northern Trust Corporation	2.7	0.0	1.1	0.1	0.0	0.0	1.4	0.4	0.0
The PNC Financial Services Group, Inc.	12.5	0.0	6.4	0.1	0.0	0.5	5.5	0.7	0.4
RBC USA Holdco Corporation	2.1	0.0	1.9	0.0	0.4	0.0	-0.2	0.0	0.0
Regions Financial Corporation	3.4	0.0	3.2	0.0	0.0	0.0	0.2	0.0	0.0
Santander Holdings USA, Inc.	7.3	0.0	3.6	0.0	0.0	0.1	3.6	0.0	0.0
State Street Corporation	4.3	0.0	0.7	0.1	1.3	0.0	2.2	0.3	-0.7
SunTrust Banks, Inc.	5.6	0.0	4.5	0.0	0.0	0.3	0.8	0.0	0.0
TD Group US Holdings LLC	6.9	0.0	6.1	0.1	0.0	0.0	0.6	-0.6	-0.5
UBS Americas Holding LLC	2.9	0.0	1.5	0.0	0.4	0.0	1.1	0.0	0.0
U.S. Bancorp	18.3	0.0	10.3	0.0	0.0	0.0	8.0	1.7	0.3
Wells Fargo & Company	76.5	0.0	28.4	0.6	3.7	1.1	42.7	0.0	-1.7
35 participating firms	466.7	0.0	271.6	2.8	48.2	18.9	125.0	19.0	-38.0

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 firms and other firms 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 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 2018:Q1–2020:Q1 under the adverse scenario: 35 participating firms

Billions of dollars

Firm	Loan losses	First-lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial[1]	Commercial real estate, domestic	Credit cards	Other consumer[2]	Other loans[3]
Ally Financial Inc.	4.7	0.1	0.1	1.5	0.1	0.0	3.0	0.0
American Express Company	9.5	0.0	0.0	3.6	0.0	5.8	0.1	0.0
Bank of America Corporation	28.7	1.2	0.9	9.2	2.5	9.6	1.1	4.2
The Bank of New York Mellon Corporation	1.1	0.1	0.0	0.1	0.1	0.0	0.3	0.6
Barclays US LLC	3.1	0.0	0.0	0.0	0.0	3.0	0.0	0.1
BB&T Corporation	4.7	0.4	0.2	1.1	1.3	0.2	1.0	0.5
BBVA Compass Bancshares, Inc.	2.4	0.3	0.1	1.0	0.6	0.1	0.3	0.1
BMO Financial Corp.	2.8	0.1	0.2	1.4	0.4	0.0	0.1	0.6
BNP Paribas USA, Inc.	3.1	0.1	0.1	1.1	0.8	0.0	0.6	0.3
Capital One Financial Corporation	25.7	0.0	0.1	2.5	0.8	18.1	3.5	0.5
Citigroup Inc.	33.2	0.9	0.5	6.2	0.7	17.4	2.8	4.7
Citizens Financial Group, Inc.	4.0	0.2	0.4	1.4	0.6	0.2	1.1	0.2
Credit Suisse Holdings (USA), Inc.	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
DB USA Corporation	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Discover Financial Services	9.3	0.0	0.0	0.0	0.0	7.7	1.6	0.0
Fifth Third Bancorp	3.3	0.3	0.2	1.3	0.6	0.3	0.3	0.3
The Goldman Sachs Group, Inc.	6.2	1.4	0.0	2.1	0.2	0.0	0.3	2.2
HSBC North America Holdings Inc.	2.1	0.1	0.0	1.3	0.3	0.1	0.0	0.3
Huntington Bancshares Incorporated	2.2	0.2	0.2	0.8	0.4	0.1	0.4	0.1
JPMorgan Chase & Co.	37.3	1.7	0.9	11.6	2.5	12.8	1.7	6.3
KeyCorp	3.1	0.2	0.2	1.3	0.6	0.1	0.3	0.3
M&T Bank Corporation	3.0	0.4	0.1	0.7	1.3	0.1	0.3	0.2
Morgan Stanley	2.4	0.2	0.0	0.7	0.3	0.0	0.1	1.1
MUFG Americas Holdings Corporation	2.0	0.3	0.0	0.8	0.5	0.0	0.1	0.2
Northern Trust Corporation	0.9	0.0	0.1	0.2	0.1	0.0	0.0	0.5
The PNC Financial Services Group, Inc.	6.5	0.2	0.1	3.5	1.0	0.5	0.6	0.5
RBC USA Holdco Corporation	1.6	0.1	0.0	0.7	0.3	0.0	0.1	0.4
Regions Financial Corporation	3.0	0.3	0.2	1.1	0.7	0.1	0.4	0.3
Santander Holdings USA, Inc.	5.4	0.1	0.2	0.6	0.5	0.1	3.7	0.3
State Street Corporation	0.5	0.0	0.0	0.2	0.0	0.0	0.0	0.4
SunTrust Banks, Inc.	4.3	0.4	0.4	1.4	0.6	0.2	1.2	0.2
TD Group US Holdings LLC	6.1	0.3	0.3	1.5	0.9	2.0	0.5	0.6
UBS Americas Holding LLC	1.1	0.1	0.0	0.4	0.0	0.0	0.1	0.4
U.S. Bancorp	10.6	0.4	0.4	3.6	1.7	2.7	1.0	0.8
Wells Fargo & Company	28.5	1.6	0.9	8.1	4.8	4.6	4.0	4.5
35 participating firms	262.9	12.0	6.8	70.6	25.2	85.8	30.7	31.8

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 2018:Q1–2020:Q1 under the adverse scenario: 35 participating firms

Percent of average balances[1]

Firm	Loan losses	First-lien mortgages, domestic	Junior liens and HELOCs, domestic	Commercial and industrial[2]	Commercial real estate, domestic	Credit cards	Other consumer[3]	Other loans[4]
Ally Financial Inc.	3.7	1.0	4.8	3.3	1.6	0.0	4.7	4.6
American Express Company	7.1	0.0	0.0	7.7	0.0	6.8	10.2	3.7
Bank of America Corporation	2.9	0.6	1.6	3.4	3.3	9.7	1.4	2.0
The Bank of New York Mellon Corporation	1.8	0.9	3.0	1.9	3.8	0.0	7.6	1.4
Barclays US LLC	8.0	0.0	0.0	20.3	2.4	11.2	10.2	0.6
BB&T Corporation	3.2	1.4	1.9	3.9	3.4	10.0	4.9	2.5
BBVA Compass Bancshares, Inc.	3.8	2.0	2.7	5.1	4.2	12.4	6.4	1.2
BMO Financial Corp.	3.8	1.4	7.0	4.7	3.7	9.2	1.9	3.4
BNP Paribas USA, Inc.	3.9	0.9	2.6	6.5	4.1	10.6	3.6	3.3
Capital One Financial Corporation	9.8	0.3	3.3	8.6	2.7	16.5	6.4	2.9
Citigroup Inc.	4.8	1.2	2.7	3.5	3.6	10.7	9.1	2.2
Citizens Financial Group, Inc.	3.6	1.1	2.7	4.3	4.0	9.3	4.6	2.4
Credit Suisse Holdings (USA), Inc.	0.5	0.0	0.0	0.0	0.0	0.0	10.2	0.5
DB USA Corporation	1.4	1.1	3.0	1.4	2.3	0.0	4.7	0.9
Discover Financial Services	10.7	1.4	7.1	11.2	6.7	11.1	9.4	3.7
Fifth Third Bancorp	3.5	2.0	2.9	3.6	5.0	12.8	3.0	2.5
The Goldman Sachs Group, Inc.	6.2	40.4	2.8	10.3	4.1	0.0	6.9	3.3
HSBC North America Holdings Inc.	3.2	0.8	2.5	4.8	2.9	10.6	5.9	2.7
Huntington Bancshares Incorporated	3.0	1.7	2.1	3.8	3.9	10.6	2.7	2.5
JPMorgan Chase & Co.	3.8	0.7	2.0	7.0	2.1	9.0	2.5	3.1
KeyCorp	3.4	2.2	2.6	3.9	3.9	9.7	4.6	1.9
M&T Bank Corporation	3.4	2.1	2.6	3.8	3.7	10.6	4.1	3.1
Morgan Stanley	1.9	0.7	2.8	6.8	2.3	0.0	0.6	1.9
MUFG Americas Holdings Corporation	2.5	0.8	1.1	4.8	3.1	10.6	12.6	2.7
Northern Trust Corporation	2.7	0.6	4.4	3.2	2.9	0.0	10.2	3.1
The PNC Financial Services Group, Inc.	2.9	0.7	0.8	4.3	2.8	10.4	2.6	1.6
RBC USA Holdco Corporation	3.6	0.7	1.9	7.5	3.1	10.6	8.3	2.8
Regions Financial Corporation	3.6	1.7	2.8	4.6	5.0	10.9	6.3	1.8
Santander Holdings USA, Inc.	6.5	1.4	2.7	3.7	2.7	10.8	13.8	3.9
State Street Corporation	2.3	0.0	0.0	4.2	2.1	0.0	0.6	1.9
SunTrust Banks, Inc.	2.9	1.6	3.4	3.2	2.9	9.8	4.1	1.5
TD Group US Holdings LLC	3.9	1.3	3.3	4.4	3.2	14.9	1.9	2.3
UBS Americas Holding LLC	1.8	0.8	0.0	5.9	1.8	10.6	0.6	2.5
U.S. Bancorp	3.7	0.7	2.6	4.6	4.4	11.7	2.4	3.1
Wells Fargo & Company	2.9	0.6	1.6	4.2	3.5	11.8	4.7	2.4
35 participating firms	3.9	0.9	2.1	4.6	3.3	10.9	4.3	2.4

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.

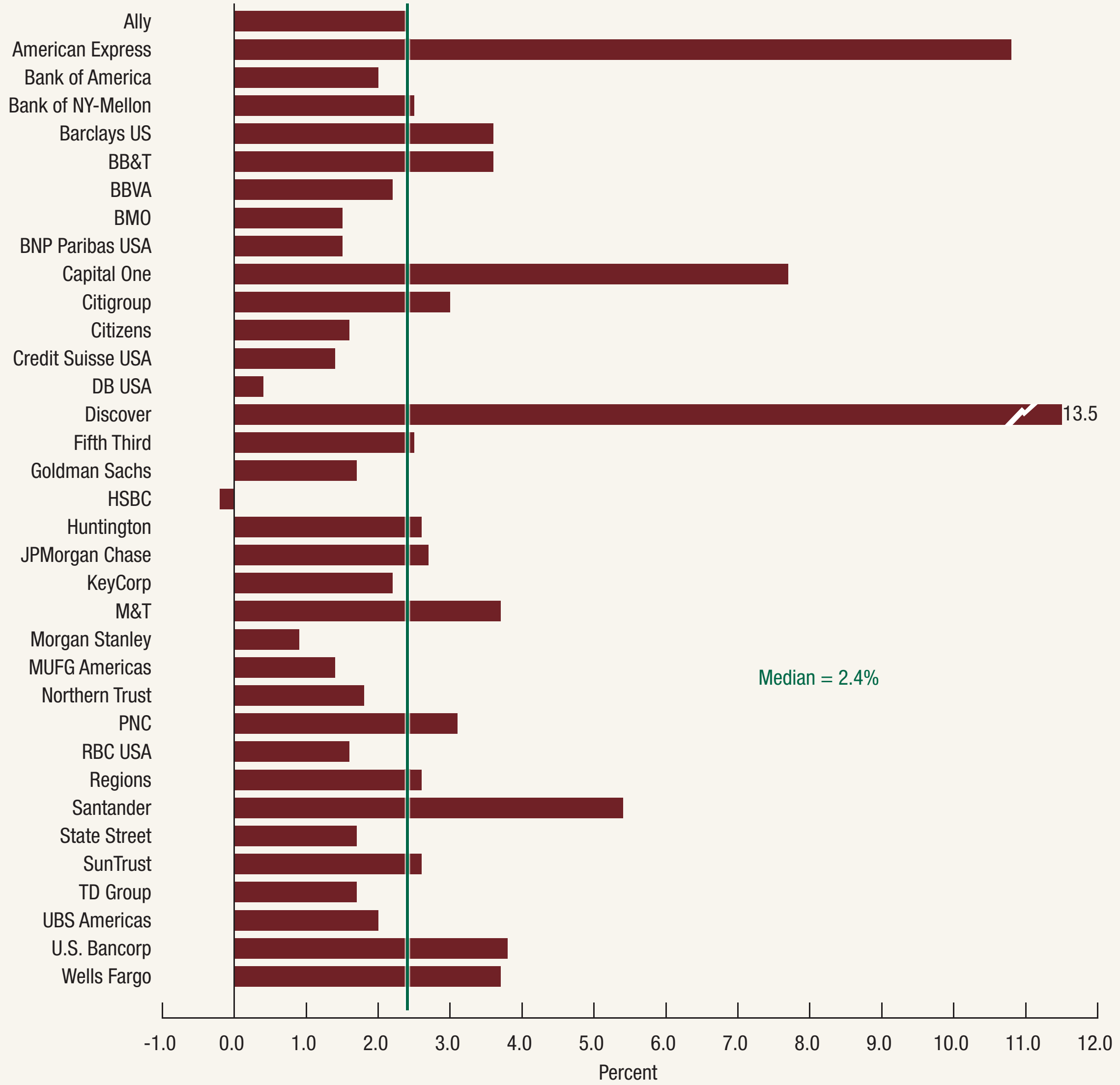
2 Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

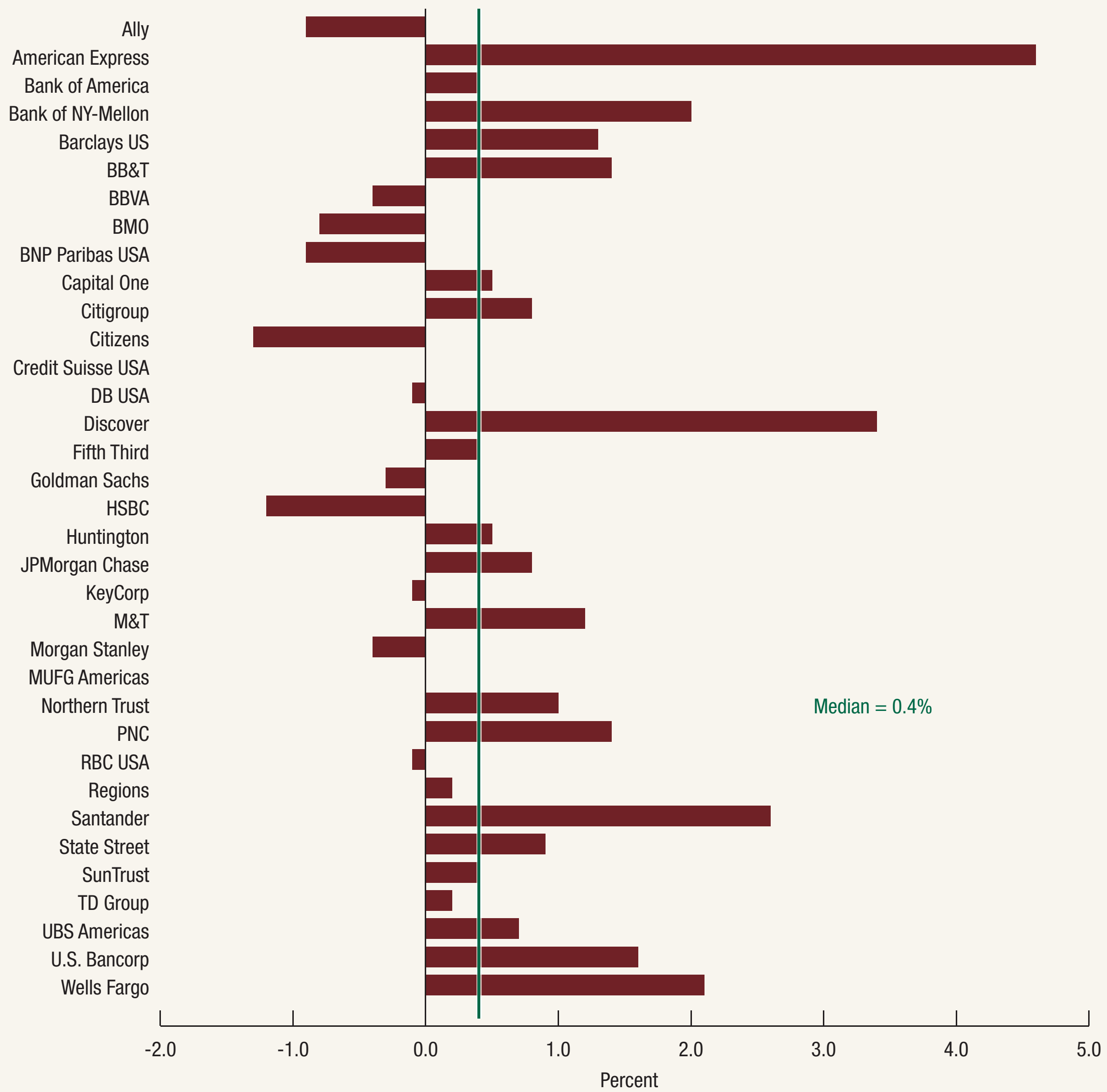
Source: Federal Reserve estimates in the adverse scenario.

Figure 18. PPNR rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average assets.

Figure 19. Pre-tax net income rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2018:Q1–2020: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	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.

It is important to note that the adverse and severely adverse scenarios are not forecasts but rather are hypothetical scenarios designed to assess the strength of banking organizations and their resilience to adverse economic environments.

Table A.1. Historical data: Domestic variables, Q1:2000–Q4:2017

Percent, unless otherwise indicated.

Date	Real GDP growth	Nominal GDP growth	Real dispo-sable income growth	Nominal dispo-sable income growth	Unem-ployment 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	Com-mercial 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	127	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	125	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	139	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	144	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	143	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	142	34.7
Q3 2001	-1.3	0.0	9.8	10.1	4.8	1.1	3.2	4.6	5.3	7.3	7.0	6.6	9,563	116	143	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	139	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	140	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	140	28.4
Q3 2002	2.0	3.8	-0.5	1.5	5.7	2.2	1.6	3.4	4.5	7.3	6.3	4.8	7,774	127	142	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	144	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	151	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	151	29.1
Q3 2003	6.9	9.3	6.7	9.3	6.1	3.0	0.9	3.1	4.4	6.0	6.0	4.0	9,650	139	149	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	147	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	6.1	4.0	11,145	154	164	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	175	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	178	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	179	14.7
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	185	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	190	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	199	16.5
Q1 2006	4.9	8.2	9.5	11.5	4.7	2.1	4.4	4.6	4.7	6.0	6.2	7.4	13,122	194	204	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	213	23.8
Q3 2006	0.4	3.2	1.2	4.1	4.6	3.8	4.9	4.8	5.0	6.4	6.6	8.3	13,322	192	220	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	222	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	230	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	184	239	18.9
Q3 2007	2.7	4.2	1.1	3.4	4.7	2.6	4.3	4.5	4.8	6.5	6.6	8.2	15,318	178	247	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	249	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	236	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	150	231	46.7
Q4 2008	-8.2	-7.7	2.6	-3.2	6.9	-8.9	0.3	2.2	3.7	9.4	5.9	4.1	9,057	142	219	80.9
Q1 2009	-5.4	-4.5	-0.8	-3.0	8.3	-2.7	0.2	1.9	3.2	9.0	5.1	3.3	8,044	138	208	56.7
Q2 2009	-0.5	-1.2	2.9	4.7	9.3	2.1	0.2	2.3	3.7	8.2	5.0	3.3	9,343	138	180	42.3
Q3 2009	1.3	1.2	-4.3	-1.9	9.6	3.5	0.2	2.5	3.8	6.8	5.2	3.3	10,813	138	160	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	139	160	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	139	152	27.3
Q2 2010	3.9	5.8	5.3	5.8	9.6	-0.1	0.1	2.3	3.6	5.6	4.9	3.3	10,646	138	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	165	32.9
Q4 2010	2.5	4.7	2.8	5.0	9.5	3.3	0.1	1.5	3.0	5.0	4.4	3.3	13,131	134	167	23.5
Q1 2011	-1.5	0.2	5.0	8.2	9.0	4.3	0.1	2.1	3.5	5.4	4.8	3.3	13,909	133	172	29.4
Q2 2011	2.9	6.0	-0.6	3.5	9.1	4.6	0.0	1.8	3.3	5.1	4.7	3.3	13,843	132	173	22.7
Q3 2011	0.8	3.3	2.1	4.3	9.0	2.6	0.0	1.1	2.5	4.9	4.3	3.3	11,677	133	172	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	133	178	45.5
Q1 2012	2.7	4.9	6.7	9.2	8.3	2.3	0.1	0.9	2.1	4.7	3.9	3.3	14,627	134	180	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	138	181	26.7
Q3 2012	0.5	2.7	-0.2	1.1	8.0	1.8	0.1	0.7	1.6	4.2	3.6	3.3	14,895	140	187	20.5
Q4 2012	0.1	1.7	10.9	13.3	7.8	2.7	0.1	0.7	1.7	3.9	3.4	3.3	14,835	143	187	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	190	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	199	20.5
Q3 2013	3.1	5.1	2.4	3.9	7.2	2.2	0.0	1.5	2.7	4.9	4.4	3.3	17,718	155	208	17.0
Q4 2013	4.0	6.1	0.9	2.6	6.9	1.6	0.1	1.4	2.8	4.8	4.3	3.3	19,413	158	212	20.3
Q1 2014	-0.9	0.7	4.3	6.5	6.7	2.6	0.0	1.6	2.8	4.6	4.4	3.3	19,711	160	211	21.4
Q2 2014	4.6	7.0	5.3	7.1	6.2	1.9	0.0	1.7	2.7	4.3	4.2	3.3	20,569	161	220	17.0
Q3 2014	5.2	7.1	4.2	5.5	6.1	1.0	0.0	1.7	2.5	4.2	4.1	3.3	20,459	163	223	17.0
Q4 2014	2.0	2.6	5.9	5.7	5.7	-0.7	0.0	1.6	2.3	4.2	4.0	3.3	21,425	166	234	26.3
Q1 2015	3.2	3.2	4.3	2.6	5.6	-2.5	0.0	1.5	2.0	4.0	3.7	3.3	21,708	168	249	22.4
Q2 2015	2.7	5.0	3.8	5.6	5.4	2.4	0.0	1.5	2.2	4.2	3.8	3.3	21,631	170	251	18.9
Q3 2015	1.6	3.0	1.8	3.2	5.1	1.5	0.0	1.6	2.3	4.5	4.0	3.3	19,959	172	257	40.7
Q4 2015	0.5	1.3	2.9	3.1	5.0	0.4	0.1	1.6	2.2	4.6	3.9	3.3	21,101	175	254	24.4
Q1 2016	0.6	0.8	0.2	0.9	4.9	0.1	0.3	1.4	2.0	4.6	3.7	3.5	21,179	177	245	28.1
Q2 2016	2.2	4.7	1.9	4.0	4.9	2.3	0.3	1.3	1.8	4.1	3.6	3.5	21,621	179	248	25.8
Q3 2016	2.8	4.2	0.7	2.5	4.9	1.8	0.3	1.2	1.6	3.7	3.4	3.5	22,469	182	266	18.1
Q4 2016	1.8	3.8	-1.8	0.1	4.7	3.0	0.4	1.7	2.2	4.1	3.8	3.5	23,277	184	269	22.5
Q1 2017	1.2	3.3	2.9	5.2	4.7	3.1	0.6	2.0	2.5	4.2	4.2	3.8	24,508	187	262	13.1
Q2 2017	3.1	4.1	2.7	3.0	4.3	-0.3	0.9	1.8	2.3	4.0	4.0	4.0	25,125	190	272	16.0
Q3 2017	3.2	5.3	0.5	2.1	4.3	2.0	1.0	1.8	2.3	3.9	3.9	4.3	26,149	193	275	16.0
Q4 2017	2.7	5.0	1.9	5.6	4.1	3.7	1.2	2.1	2.4	4.0	3.9	4.3	27,673	194	279	13.1

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–Q4:2017
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	4.6	2.6	0.957	7.0	1.5	100.0	8.0	-0.5	102.7	3.8	0.3	1.592
Q2 2000	3.6	0.9	0.955	7.1	-0.3	100.7	0.9	-1.1	106.1	2.9	0.5	1.513
Q3 2000	2.2	3.4	0.884	8.1	2.2	101.5	0.3	-0.3	107.9	1.2	1.0	1.479
Q4 2000	3.1	2.8	0.939	3.0	2.4	105.1	3.8	-1.1	114.4	0.8	1.9	1.496
Q1 2001	3.4	1.2	0.879	4.9	1.7	106.0	2.3	0.7	125.5	4.1	-0.1	1.419
Q2 2001	0.6	4.0	0.847	5.5	2.1	106.1	-1.9	-2.3	124.7	3.4	3.2	1.408
Q3 2001	0.3	1.4	0.910	4.7	1.3	106.4	-4.4	-0.5	119.2	2.6	1.0	1.469
Q4 2001	0.9	1.7	0.890	8.5	0.0	106.9	-1.0	-1.9	131.0	1.3	-0.1	1.454
Q1 2002	0.5	3.1	0.872	7.7	0.5	107.3	0.4	-1.1	132.7	1.9	2.0	1.425
Q2 2002	1.9	2.0	0.986	8.1	1.1	104.8	3.2	0.1	119.9	2.9	0.9	1.525
Q3 2002	1.6	1.6	0.988	7.2	1.5	105.5	1.6	-0.4	121.7	3.3	1.3	1.570
Q4 2002	0.6	2.3	1.049	6.5	0.7	104.5	1.1	-0.8	118.8	3.8	1.9	1.610
Q1 2003	-1.0	3.3	1.090	6.7	3.6	105.5	-0.5	0.0	118.1	2.5	1.7	1.579
Q2 2003	0.2	0.5	1.150	2.1	1.1	104.0	3.3	0.3	119.9	3.7	0.2	1.653
Q3 2003	2.1	2.1	1.165	14.3	0.1	102.6	1.6	-0.5	111.4	4.0	1.7	1.662
Q4 2003	3.1	2.3	1.260	13.0	5.5	103.4	4.5	-1.0	107.1	3.1	1.7	1.784
Q1 2004	2.3	2.2	1.229	5.6	4.0	101.4	3.1	0.8	104.2	2.1	1.4	1.840
Q2 2004	2.1	2.6	1.218	6.9	4.1	102.8	-0.1	-0.4	109.4	1.7	0.8	1.813
Q3 2004	1.2	2.0	1.242	8.2	4.1	102.7	2.1	-0.1	110.2	0.9	1.1	1.809
Q4 2004	1.5	2.4	1.354	6.4	0.8	98.9	-1.1	1.9	102.7	1.5	2.4	1.916
Q1 2005	0.7	1.4	1.297	10.6	2.9	98.6	1.9	-1.2	107.2	3.4	2.6	1.889
Q2 2005	2.7	2.2	1.210	8.6	1.5	98.9	3.2	-1.0	110.9	4.4	1.8	1.793
Q3 2005	3.0	3.1	1.206	9.3	2.4	98.6	3.9	-1.0	113.3	4.3	2.8	1.770
Q4 2005	2.4	2.4	1.184	11.7	1.6	98.1	0.8	0.1	117.9	6.0	1.4	1.719
Q1 2006	3.7	1.7	1.214	11.0	2.4	96.8	0.3	1.2	117.5	1.1	1.9	1.739
Q2 2006	4.3	2.5	1.278	7.0	3.2	96.7	1.4	0.4	114.5	0.8	3.0	1.849
Q3 2006	2.6	2.1	1.269	10.3	2.2	96.4	-0.7	0.4	118.0	0.3	3.3	1.872
Q4 2006	4.5	0.9	1.320	11.2	3.6	94.6	4.9	-0.5	119.0	1.5	2.6	1.959
Q1 2007	3.0	2.3	1.337	13.9	3.6	94.0	3.0	-0.7	117.6	3.7	2.5	1.969
Q2 2007	2.6	2.3	1.352	10.5	4.9	91.9	0.5	0.4	123.4	2.9	1.8	2.006
Q3 2007	2.0	2.1	1.422	8.7	7.6	90.6	-1.8	0.3	115.0	2.7	0.3	2.039
Q4 2007	2.1	4.8	1.460	12.8	5.9	89.4	2.0	2.2	111.7	3.3	4.0	1.984
Q1 2008	2.2	4.3	1.581	7.2	8.1	88.0	1.2	1.2	99.9	1.1	3.4	1.986
Q2 2008	-1.5	3.2	1.575	6.0	6.3	88.7	-2.0	1.8	106.2	-2.7	5.8	1.991
Q3 2008	-2.3	3.2	1.408	3.1	2.9	91.5	-5.0	3.4	105.9	-6.3	5.9	1.780
Q4 2008	-6.7	-1.4	1.392	0.3	-1.1	92.2	-8.8	-2.1	90.8	-8.4	0.4	1.462
Q1 2009	-11.2	-1.1	1.326	4.4	-1.4	94.2	-18.2	-3.6	99.2	-6.2	-0.2	1.430
Q2 2009	-1.1	0.0	1.402	15.1	2.3	92.2	8.7	-1.6	96.4	-0.9	2.3	1.645
Q3 2009	1.2	1.1	1.463	12.7	4.1	91.3	0.1	-1.4	89.5	0.6	3.6	1.600
Q4 2009	2.2	1.6	1.433	9.2	5.0	90.6	5.9	-1.5	93.1	1.1	2.8	1.617
Q1 2010	1.7	1.8	1.353	9.8	4.4	89.8	3.5	1.0	93.4	2.2	4.2	1.519
Q2 2010	3.8	2.0	1.229	9.7	3.4	91.0	5.1	-1.4	88.5	3.6	3.3	1.495
Q3 2010	1.8	1.6	1.360	8.8	4.2	88.4	7.5	-1.9	83.5	1.9	2.2	1.573
Q4 2010	2.4	2.6	1.327	9.2	7.5	87.4	-2.9	1.3	81.7	0.3	3.9	1.539
Q1 2011	3.4	3.7	1.418	9.8	6.2	86.4	-6.1	-0.1	82.8	2.4	7.0	1.605
Q2 2011	0.0	3.2	1.452	6.5	5.4	85.3	-1.9	-0.7	80.6	0.6	4.6	1.607
Q3 2011	0.0	1.3	1.345	5.4	5.3	87.3	10.1	0.3	77.0	1.5	3.5	1.562
Q4 2011	-1.4	3.5	1.297	6.7	3.0	87.3	-0.6	-0.6	77.0	0.8	3.4	1.554
Q1 2012	-0.6	2.8	1.333	7.4	3.2	86.2	4.6	2.2	82.4	2.6	2.3	1.599
Q2 2012	-1.4	2.3	1.267	5.9	3.9	88.0	-2.4	-1.4	79.8	-0.4	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	6.6	2.2	86.1	-1.5	-1.9	77.9	4.7	2.1	1.613
Q4 2012	-1.7	2.4	1.319	7.2	3.5	86.0	0.9	0.1	86.6	-0.6	4.2	1.626
Q1 2013	-1.3	1.2	1.282	6.5	4.3	86.2	4.5	0.7	94.2	2.6	3.0	1.519
Q2 2013	1.9	0.4	1.301	6.4	3.0	87.1	3.8	-0.1	99.2	2.2	1.5	1.521
Q3 2013	1.4	1.3	1.354	7.7	3.7	86.5	3.1	2.7	98.3	3.4	2.1	1.618
Q4 2013	1.0	0.3	1.378	6.7	4.0	85.8	0.0	2.6	105.3	2.1	1.7	1.657
Q1 2014	1.7	0.8	1.378	6.0	1.4	86.8	3.3	1.1	103.0	3.5	1.8	1.668
Q2 2014	0.5	0.0	1.369	7.4	2.6	86.6	-6.6	8.2	101.3	3.5	1.4	1.711
Q3 2014	1.7	0.3	1.263	6.7	2.3	86.9	-0.2	1.6	109.7	3.1	0.8	1.622
Q4 2014	2.0	-0.4	1.210	5.7	1.2	88.1	2.8	-0.5	119.9	3.1	-0.4	1.558
Q1 2015	3.0	-0.9	1.074	6.1	0.8	87.9	5.1	0.4	120.0	1.4	-1.3	1.485
Q2 2015	1.3	1.9	1.115	6.9	2.8	88.3	0.5	0.5	122.1	2.3	0.8	1.573
Q3 2015	1.7	-0.2	1.116	6.5	2.7	90.9	0.3	0.1	119.8	1.7	0.8	1.512
Q4 2015	1.9	-0.1	1.086	5.4	1.5	92.2	-0.9	-0.4	120.3	2.9	0.0	1.475
Q1 2016	2.0	-1.3	1.139	6.6	2.8	91.7	2.2	0.0	112.4	0.8	-0.1	1.438
Q2 2016	1.4	1.2	1.103	6.6	2.8	94.0	1.6	-1.1	102.8	1.9	0.7	1.324
Q3 2016	1.6	1.2	1.124	6.1	1.2	93.6	0.9	-0.5	101.2	2.2	2.2	1.302
Q4 2016	2.7	1.8	1.055	5.7	2.3	97.5	1.4	3.0	116.8	3.0	2.0	1.234
Q1 2017	2.5	2.8	1.070	6.7	0.6	95.2	1.5	-0.1	111.4	1.2	3.7	1.254
Q2 2017	2.9	0.2	1.141	6.0	2.0	94.5	2.9	-0.8	112.4	1.2	3.0	1.300
Q3 2017	2.9	1.0	1.181	6.6	2.4	93.5	2.5	0.4	112.6	1.6	2.4	1.340
Q4 2017	2.3	1.7	1.202	5.9	2.6	91.0	1.8	0.9	112.7	1.4	2.9	1.353

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, Q1:2018–Q1:2021
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 2018	2.5	4.6	4.0	6.1	4.0	2.1	1.4	2.2	2.6	4.1	4.1	4.6	28,019	196	282	15.3
Q2 2018	2.8	4.8	2.9	4.8	4.0	1.9	1.7	2.4	2.7	4.3	4.3	4.8	28,382	197	286	17.5
Q3 2018	2.6	4.7	2.9	4.9	3.9	2.1	1.9	2.5	2.8	4.4	4.4	5.0	28,747	198	289	18.7
Q4 2018	2.5	4.6	2.8	4.8	3.8	2.1	2.1	2.7	2.9	4.5	4.5	5.2	29,110	199	293	20.0
Q1 2019	2.3	4.5	2.9	5.0	3.8	2.2	2.2	2.8	3.1	4.6	4.7	5.3	29,472	201	297	20.9
Q2 2019	2.3	4.4	2.5	4.5	3.8	2.2	2.4	2.8	3.1	4.7	4.8	5.5	29,830	202	300	21.5
Q3 2019	2.1	4.3	2.4	4.4	3.8	2.2	2.5	2.9	3.2	4.8	4.9	5.6	30,187	203	304	22.1
Q4 2019	2.0	4.2	2.3	4.4	3.7	2.4	2.6	2.9	3.3	4.9	4.9	5.7	30,538	204	308	22.1
Q1 2020	2.1	4.2	2.2	4.3	3.8	2.3	2.7	3.0	3.5	5.1	5.1	5.7	30,892	206	310	23.5
Q2 2020	2.1	4.2	2.3	4.4	3.9	2.3	2.7	3.0	3.5	5.1	5.2	5.7	31,255	207	313	23.6
Q3 2020	2.1	4.2	2.3	4.4	4.0	2.3	2.7	3.1	3.5	5.2	5.2	5.7	31,623	209	315	23.8
Q4 2020	2.1	4.2	2.3	4.4	4.0	2.3	2.7	3.1	3.6	5.2	5.2	5.8	31,995	211	317	23.8
Q1 2021	2.1	4.2	2.3	4.4	4.1	2.3	2.7	3.1	3.6	5.2	5.3	5.8	32,371	212	320	23.9

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, Q1:2018–Q1:2021
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 2018	2.1	1.5	1.201	6.0	2.5	91.5	1.5	0.9	112.7	1.4	2.6	1.350
Q2 2018	2.1	1.5	1.199	6.0	2.5	92.0	1.4	1.0	112.8	1.4	2.5	1.347
Q3 2018	2.0	1.6	1.198	6.0	2.5	92.5	1.2	1.0	112.8	1.4	2.4	1.344
Q4 2018	2.0	1.6	1.197	5.9	2.6	93.0	1.1	1.1	112.8	1.4	2.3	1.341
Q1 2019	1.9	1.6	1.202	5.8	2.7	93.2	1.1	1.2	112.6	1.4	2.2	1.344
Q2 2019	1.9	1.6	1.208	5.8	2.8	93.5	1.0	1.2	112.3	1.4	2.1	1.347
Q3 2019	1.8	1.7	1.213	5.7	2.9	93.7	1.0	1.3	112.0	1.4	2.1	1.351
Q4 2019	1.8	1.7	1.219	5.8	2.8	94.0	0.9	1.4	111.8	1.4	2.0	1.354
Q1 2020	1.8	1.8	1.219	5.8	2.8	94.0	0.8	1.4	111.8	1.5	2.0	1.354
Q2 2020	1.7	1.8	1.219	5.9	2.7	94.0	0.8	1.5	111.8	1.5	1.9	1.354
Q3 2020	1.7	1.9	1.219	5.9	2.7	94.0	0.8	1.5	111.8	1.5	1.9	1.354
Q4 2020	1.7	1.9	1.219	5.8	2.7	94.0	0.8	1.6	111.8	1.5	1.9	1.354
Q1 2021	1.6	1.9	1.219	5.7	2.8	94.0	0.8	1.6	111.8	1.6	1.9	1.354

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, Q1:2018–Q1:2021
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 2018	-1.3	1.2	2.4	4.2	4.5	1.7	0.6	0.0	0.7	3.8	3.2	3.8	24,589	191	272	28.0
Q2 2018	-3.5	-1.4	-1.2	0.2	5.3	1.3	0.1	0.1	0.8	4.2	3.4	3.3	22,884	185	262	33.1
Q3 2018	-2.4	-0.4	-1.8	-0.2	5.8	1.6	0.1	0.2	0.9	4.4	3.6	3.3	21,104	180	254	33.7
Q4 2018	-1.3	0.6	-1.1	0.6	6.3	1.7	0.1	0.3	1.0	4.6	3.7	3.3	20,858	177	247	32.8
Q1 2019	-0.7	1.3	-0.3	1.5	6.6	1.8	0.1	0.4	1.1	4.8	3.9	3.2	19,718	174	242	31.7
Q2 2019	0.4	2.3	-0.1	1.6	6.9	1.9	0.1	0.5	1.2	4.8	3.9	3.2	19,998	172	239	28.8
Q3 2019	1.0	2.9	0.5	2.2	7.0	1.9	0.1	0.6	1.3	4.7	3.9	3.2	20,580	171	237	25.7
Q4 2019	2.5	4.3	1.0	2.9	7.0	2.1	0.1	0.6	1.4	4.6	3.9	3.2	21,350	171	237	23.1
Q1 2020	2.8	4.5	2.3	4.2	6.9	2.1	0.1	0.7	1.6	4.6	4.0	3.2	22,145	171	237	21.3
Q2 2020	3.0	4.7	2.4	4.2	6.8	2.0	0.1	0.7	1.7	4.4	4.0	3.2	23,213	172	238	20.1
Q3 2020	3.2	4.8	2.6	4.4	6.6	2.0	0.1	0.8	1.8	4.3	4.0	3.2	24,259	172	239	19.3
Q4 2020	3.3	4.9	2.8	4.5	6.5	2.0	0.1	0.9	1.8	4.2	3.9	3.2	25,405	173	240	18.7
Q1 2021	3.3	4.8	2.9	4.6	6.3	1.9	0.1	0.9	1.9	4.0	3.9	3.2	26,625	174	242	18.3

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, Q1:2018–Q1:2021
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 2018	-2.6	0.8	1.133	2.1	1.3	97.0	-1.7	-1.3	110.7	-2.8	1.3	1.319
Q2 2018	-3.4	0.3	1.113	2.5	0.5	99.8	-4.0	-1.9	109.6	-3.9	0.6	1.304
Q3 2018	-2.6	-0.1	1.115	3.7	0.1	101.1	-4.9	-2.2	109.6	-3.4	0.3	1.296
Q4 2018	-1.9	-0.4	1.118	4.4	-0.1	102.1	-5.1	-2.4	109.1	-2.8	0.2	1.287
Q1 2019	-0.9	-0.6	1.146	5.4	0.1	101.4	-4.0	-1.9	108.6	-1.6	0.4	1.295
Q2 2019	-0.1	-0.2	1.155	5.9	0.3	100.8	-2.7	-1.5	108.1	-0.4	0.6	1.301
Q3 2019	0.7	0.1	1.163	6.1	0.6	100.2	-1.6	-1.1	107.7	0.5	0.8	1.307
Q4 2019	1.3	0.4	1.171	6.1	0.8	99.6	-0.8	-0.7	107.3	1.1	1.0	1.312
Q1 2020	1.7	0.7	1.174	6.2	0.9	98.9	-0.1	-0.3	107.3	1.7	1.1	1.313
Q2 2020	2.0	0.9	1.178	6.2	1.1	98.2	0.4	0.0	107.4	2.0	1.2	1.313
Q3 2020	2.1	1.1	1.181	6.3	1.3	97.7	0.8	0.3	107.5	2.2	1.3	1.314
Q4 2020	2.1	1.2	1.185	6.3	1.5	97.2	1.0	0.5	107.7	2.3	1.4	1.314
Q1 2021	2.0	1.3	1.188	6.3	1.7	96.9	1.2	0.7	107.8	2.3	1.5	1.315

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, Q1:2018–Q1:2021
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 2018	-4.7	-2.3	1.4	3.0	5.0	1.4	0.1	1.9	2.4	7.1	5.3	3.3	13,466	186	262	50.7
Q2 2018	-8.9	-7.1	-4.2	-3.1	6.5	0.9	0.1	1.9	2.4	7.7	5.7	3.3	11,631	171	234	62.4
Q3 2018	-6.8	-5.1	-5.1	-3.8	7.6	1.2	0.1	1.9	2.4	7.9	5.8	3.3	10,575	159	212	59.5
Q4 2018	-4.7	-3.0	-3.9	-2.5	8.5	1.3	0.1	1.9	2.4	8.0	5.9	3.3	10,306	151	195	52.8
Q1 2019	-3.6	-1.8	-2.9	-1.5	9.3	1.5	0.1	1.9	2.4	8.1	6.0	3.2	9,689	143	181	47.4
Q2 2019	-1.3	0.3	-2.4	-1.0	9.7	1.5	0.1	1.9	2.4	7.9	6.0	3.2	10,100	139	173	37.9
Q3 2019	-0.2	1.4	-1.4	-0.1	10.0	1.5	0.1	1.9	2.4	7.5	5.8	3.2	10,949	136	167	29.7
Q4 2019	2.8	4.3	-0.1	1.5	9.9	1.8	0.1	1.9	2.4	7.1	5.7	3.2	12,031	136	167	23.5
Q1 2020	3.5	4.8	1.9	3.4	9.7	1.8	0.1	1.9	2.4	6.7	5.5	3.2	13,234	136	167	19.8
Q2 2020	4.0	5.2	2.3	3.7	9.5	1.7	0.1	1.9	2.4	6.3	5.3	3.2	14,713	137	170	17.5
Q3 2020	4.2	5.3	2.7	4.1	9.2	1.6	0.1	1.9	2.4	5.9	5.1	3.2	16,323	139	172	16.0
Q4 2020	4.5	5.5	3.1	4.3	8.9	1.6	0.1	1.9	2.4	5.5	4.9	3.2	18,143	141	176	15.0
Q1 2021	4.5	5.4	3.3	4.5	8.6	1.5	0.1	1.9	2.4	5.0	4.7	3.2	20,168	143	180	14.4

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, Q1:2018–Q1:2021
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 2018	-4.0	0.1	1.123	-1.5	0.3	99.5	-3.8	-2.6	108.6	-3.5	0.6	1.316
Q2 2018	-5.2	-0.7	1.097	-0.8	-1.0	103.5	-7.4	-3.7	106.4	-5.1	-0.2	1.296
Q3 2018	-4.3	-1.1	1.084	1.5	-1.7	105.9	-9.9	-5.0	103.4	-4.8	-0.7	1.284
Q4 2018	-3.3	-1.2	1.071	2.9	-2.2	107.5	-11.4	-5.8	100.9	-4.1	-0.9	1.271
Q1 2019	-1.6	-0.8	1.081	4.9	-2.1	106.3	-9.8	-5.2	100.5	-2.8	-0.6	1.278
Q2 2019	-0.1	-0.5	1.091	5.9	-1.8	105.0	-7.3	-4.5	100.0	-1.4	-0.3	1.284
Q3 2019	1.0	-0.1	1.101	6.2	-1.4	103.7	-5.0	-3.7	99.6	-0.2	0.1	1.290
Q4 2019	1.7	0.3	1.111	6.2	-1.0	102.5	-3.2	-3.0	99.3	0.8	0.4	1.295
Q1 2020	2.1	0.6	1.116	6.3	-0.6	101.1	-1.7	-2.3	99.3	1.5	0.7	1.295
Q2 2020	2.4	0.8	1.121	6.4	-0.3	100.0	-0.5	-1.7	99.4	2.1	1.0	1.294
Q3 2020	2.4	1.0	1.127	6.5	0.0	98.9	0.3	-1.2	99.6	2.4	1.2	1.294
Q4 2020	2.4	1.1	1.132	6.5	0.4	98.1	0.9	-0.7	99.9	2.6	1.3	1.293
Q1 2021	2.3	1.2	1.136	6.6	0.8	97.4	1.3	-0.3	100.1	2.6	1.4	1.293

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 2017:Q4 (as released through January 18, 2018). The 2017:Q4 values of variables marked with an asterisk (*) are projected.

***U.S. real GDP growth**: Percent change in real gross domestic product, chained (2009) 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 gross domestic product (current dollars), 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 disposable personal income (current dollars) 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 disposable personal income (current dollars), 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 (series RIFSGFSM03_N.B).

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: Merrill Lynch 10-year BBB corporate bond yield, Z.1 Release (Financial Accounts of the United States), Federal Reserve Board (series FL073163013.Q).

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

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

U.S. Dow Jones Total Stock Market (Float Cap) Index: End of quarter value via Bloomberg Finance L.P.

***U.S. House Price Index**: Price Index for Owner-Occupied Real Estate, CoreLogic National, Z.1 Release (Financial Accounts of the United States), Federal Reserve Board (series FL075035243.Q).

***U.S. Commercial Real Estate Price Index:** Commercial Real Estate Price Index, Z.1 Release (Financial Accounts of the United States), Federal Reserve Board (series FL075035503.Q divided by 1000).

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

***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 data from Bank of Korea via Haver; National Bureau of Statistics of China via Haver; Indian Central Statistics Office via Haver; Census and Statistics Department of Hong Kong via Haver; and Taiwan Directorate-General of Budget, Accounting and Statistics via Haver.

***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 data from National Bureau of Statistics of China via Haver; Indian Ministry of Statistics and Programme Implementation via Haver; Labour Bureau of India via Haver; National Statistical Office of the Republic of Korea via Haver; Census and Statistics Department of Hong Kong via Haver; and Taiwan Directorate-General of Budget, Accounting and Statistics via Haver.

***Japan real GDP growth:** Percent change in gross domestic product at an annualized rate from 1980 to present and percent change in gross domestic expenditure at an annualized rate prior to 1980, Cabinet Office of Japan via Haver.

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

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

U.K. inflation: Percent change in the quarterly average of the consumer price index at an annualized rate from 1988 to present and percent change in the quarterly average of the retail prices index prior to 1988, staff calculations based on data from the U.K. Office for National Statistics via Haver.

Exchange rates: End-of-quarter exchange rates, 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 35 firms subject to DFAST 2018.[40] 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.

[40] In connection with DFAST 2018, 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.; ICE Data Services; Bloomberg L.P.; CB Richard Ellis, Inc.; CoreLogic Inc.; CoStar Group, Inc.; Equifax Information Services LLC; Fitch Ratings, Inc.; Haver Analytics; Kenneth French; IDC Financial Publishing, Inc.; Intex Solutions, Inc.; Black Knight McDash Data from Black Knight IP Holding Company, LLC; Markit Group; Moody's Analytics, Inc.; Moody's Investors Service, Inc.; Mergent, Inc.; Morningstar, Inc.; MSCI, Inc.; Municipal Securities Rulemaking Board; SNL Financial; StataCorp LP; S&P Global Market Intelligence: S&P Capital IQ Estimates; Standard & Poor's Financial Services LLC; and World Bank Group. 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: Bloomberg L.P.; Intercontinental Exchange; JPMorgan Chase & Co.; Markit Group; and MSCI, Inc.

For DFAST 2018, the Federal Reserve materially enhanced its models for projecting PPNR and other-than-temporary impairments for debt securities. The Federal Reserve re-estimated and refined models for projecting domestic credit card losses, auto loan losses, first-lien residential mortgage losses, and home equity losses. The Federal Reserve also made material changes to its capital calculations to account for changes in the tax law due to the Tax Cuts and Jobs Act. See box 1 for more details on material model changes for DFAST 2018.

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 firms on the 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 loans, home equity loans, and home equity lines of credit 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 2018—the models estimate expected losses under the macroeconomic scenario; that is, they project the probability of default (PD), loss given default (LGD), and expo-

sure 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, 2017. 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, 2017, 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 firms 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 firms 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. Loss projections do not take private loss-sharing agreements into account, reflecting the complexity and heterogeneity of such agreements and their uncertainty under stress.

Wholesale Loans: Corporate Loans[41]

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 firm's corporate loan rating process.[42] 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, 2017, is calculated for every C&I loan in a firm's portfolio using detailed, loan-level information submitted by the firm. 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 firm's internal credit rating for the borrower, which is converted to a standardized rating scale and then

[41] This description is consistent with the more detailed description of the DFAST 2017 corporate loan model provided in 82 Fed. Reg. 59547 (December 15, 2017) because the corporate loan model did not change between DFAST 2017 and DFAST 2018. The more detailed description is part of a rulemaking that has yet to be finalized. For more on the status of that rulemaking see box 3.

[42] 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.

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, 2017, 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 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 advance of a future default. This drawdown amount is calibrated to the historical drawdown experience for defaulted U.S. syndicated revolving lines of credit that are in the Shared National Credit (SNC) database.[43] 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, syndication pipeline loans, non-purpose margin loans (net of loans to purchase and carry securities), and other loans.[44] Projected losses on owner-occupied CRE loans are disclosed in total CRE losses, while projected losses for the remaining other corporate loans are disclosed in the other loans category.

Wholesale 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 and C&LD loans, and the effect of reaching loan maturity on the PD is allowed to vary for each type of loan. The model is estimated using the historical FR Y-14Q information collection and historical commercial mortgage-backed security (CMBS) data pooled together. The model also includes controls for the types of property (for example, multifamily) to account for differences in risk characteristics.

The LGD for CRE loans is calculated using 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

[43] 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.

[44] 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 firm portfolios. For these loans, a conservative and uniform loss rate based on analysis of historical data is assigned.

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 firm 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.[45]

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 closed-end fixed-rate mortgages and 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.[46] 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 firm 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 loss severity (in the case of prime loans) or dollars of losses (in the case of subprime and alt-A loans).[47]

For prime loans, loss amounts and severities are calculated from historical data on loan balances, servicer advances, and losses from defaulted loans in both private-label, residential mortgage-backed securities (RMBS) and Freddie Mac securities. For subprime and alt-A loans, only RMBS data are used.[48]

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, 2017, 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 a loan transitions to different payment statuses, including current, impaired, default, 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-

[45] 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.

[46] 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).

[47] 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.

[48] The differences between characteristics of mortgages in MBS and mortgages in firm 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, 2017, 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 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 for lines that are open and have not reached the end-of-draw period, and equal to the outstanding line balance for loans that have been closed by the servicer or are past the end-of-draw period.

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 conditions, including the level and changes in the unemployment rate. 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, current and inactive accounts, and delinquent accounts. In addition, because this relationship can also vary by time horizon, separate transition models are estimated for short-, medium-, and long-term horizons. The historical data used to estimate this model are industry-wide, loan-level data from many banks, and separate models were estimated for bank cards and charge cards. The PD model is used to forecast the PD for each loan reported by each firm in the 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 the estimated amount of the available credit line 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 used to estimate the drawdown amount 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. The estimated EAD is further adjusted to better reflect typical accounting practice for accrued, unpaid interest and fees.

For DFAST 2018, the estimation sample for the PD model was expanded, and the historical data used to estimate LGD were updated to include a larger set of firms and a slightly longer downturn period to better capture lags in the recovery of credit card losses. For DFAST 2018, credit card loss projections are calculated as the arithmetic average of the projection from the models used in DFAST 2017 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.[49]

[49] For more information on the Federal Reserve's policy regarding material model changes, see the proposed Stress Testing Policy Statement (82 Fed. Reg. 59528, December 15, 2017). Projections of credit card losses in DFAST 2019 will reflect the enhanced models only.

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 for those that are delinquent. 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 firms on the 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.[50] 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.[51] Each retail product type is modeled separately, and, for each product type, economic theory and the institutional characteristics of the product guide the inclusion and lag structure of the macroeconomic variables in the model.

Because of data limitations and the relatively small size of these portfolios, the net charge-off rate for each loan type is modeled using industry-wide, monthly data at the segment level. For most portfolios, these data are collected on the FR Y-14Q Retail schedule, which segments each portfolio by characteristics such as borrower credit score; loan vintage; type of facility (e.g., installment versus revolving); and, for international portfolios, geographic region.[52]

Charge-off rates are projected by applying the estimated system of equations to each segment of the firm's loan portfolio as of December 31, 2017. The portfolio-level charge-off rate equals the dollar-weighted average of the segment-level charge-off rates.[53]

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[50] For the government-guaranteed portion of firms' student loan portfolios, an assumption of low PD and LGD is applied.

[51] "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.

[52] 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.

[53] 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.

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.[54] Because this calculation of ALLL is based on projected losses under the adverse or severely adverse scenarios, it may differ from a firm's actual level of ALLL at the beginning of the planning horizon, which is based on the firm's estimate of incurred losses as of the balance sheet date.[55] Any difference between these two measures of ALLL is smoothed into the provisions projection over the nine quarters of the planning horizon. Because projected loan losses include off-balance sheet commitments, the firm'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 firms 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 firms. Profits and losses are calculated for a variety of hedge types, including corporate credit, rates, equities, and 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, sovereign debt, collateralized loan obligation, collateralized debt obligation, and equity securities. The AFS/HTM portfolio does not include securities held for trading; losses on these

[54] 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.

[55] With regard to Accounting Standards Update No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments (CECL), the Federal Reserve has not included the potential effect of CECL in the 2018 stress testing exercise. Covered banking organizations that have adopted ASU 2016-13 would not include the effect of ASU 2016-13 on their provisioning for purposes of stress testing until the 2020 stress testing cycle.

securities are projected separately. Changes in the value of the AFS/HTM portfolio can potentially impact a firm's capital in two ways. First, other-than-temporary impairment (OTTI) losses on AFS/HTM securities, realized gains and losses on sold securities, and unrealized gains and losses on equity securities are recognized in the net income of all firms. Second, under regulatory capital rules, accumulated other comprehensive income (AOCI) that arises from unrealized changes in the value of AFS securities must be incorporated into the Common Equity Tier 1 (CET1) for advanced approaches firms (and other firms that do not opt out of including AOCI in regulatory capital). Both OTTI and unrealized gains and losses on securities are projected at the security level, based on FR Y-14Q data, and aggregated up to the firm-level.

Other comprehensive income (OCI) associated with AFS securities arises from changes in their unrealized gains and losses, 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 that is periodically adjusted if the debt security (1) was purchased at a price other than par or face value or (2) 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 debt 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 the supervisory scenarios. Final projections of OCI take into account applicable interest rate 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 firm intends to sell a security, or if it is more likely than not that the firm will have to sell without recovering its investment, then any impairment on that security will flow through the firm's earnings. The full write-down to fair value is recognized periodically as OTTI until the quarter in which the security is sold. Otherwise, a firm 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.

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 model estimates OTTI for all other debt securities 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 consist of securitizations and direct debt obligations. Securitized obligations include mortgage-backed, asset-backed, collateralized loan obligation, and collateralized debt obligation securities. Direct debt obligations are issued by a single issuer with recourse and include municipal, corporate, and sovereign debt securities.

As described in box 1, the model used to project OTTI charges for securitizations and direct debt obligations has changed for DFAST 2018. For all debt securities, OTTI charges for these securities are projected using the statistical relationship between historically observed OTTI write-downs and measures of the fair value of the securities. The model estimates this relationship separately for securitized obligations and direct debt obligations and accounts for each security's current amortized cost basis. Historical data on securities' amortized cost, fair values, and OTTI write-downs are obtained from the FR Y-14Q report and additional data from filings by

[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.

U.S. life insurance companies. OTTI charges for each security are projected using this estimated relationship, the security's current amortized cost, current fair value, and projected fair value over the scenario from the supervisory fair value model.

Fair value losses and gains on equity securities are based on the projected fair value of each security as determined by the U.S. equities index in the scenario and the sensitivity of each security's returns to the overall returns of the index. Unrealized losses and gains for equity securities are recognized in net income and affect capital directly for all firms.[57]

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 firm's securities portfolio after December 31, 2017, 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 firms 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 firms. 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. Firms provide the market value of their securitized products and private equity positions. For all other market factors, firms 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 firms. 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 firm's trading position that accounts for the risk of adverse changes in a counterparty's credit quality. Firms report their baseline and stressed CVA at the counterparty-level on the FR Y-14Q report as well as the associated baseline and stressed values of the components of CVA (i.e., counterparty expected exposure, probability of default (PD), and loss given default (LGD). The loss estimate is computed as the difference between the baseline and the stressed CVA aggregated across all counterparties.

Incremental Default Risk

In addition to mark-to-market and CVA losses on trading positions, the losses associated with the explicit default of issuers of credit instruments are captured through an incremental default risk (IDR) model. The IDR model estimates the credit 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 prod-

[57] Financial Accounting Standards Board Accounting Standards Update No. 2016-01.

ucts, and securitized products.[58] A distribution of simulated sets of issuer defaults is created through a random jump-to-default framework that is based on factors such as PD 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 (LGD), 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 firms that have substantial trading or custodial operations. The loss is based on the assumed instantaneous and unexpected default of a firm'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 firms. 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 counterparties were excluded when selecting the largest counterparty.

[58] These exposures are distinct from the bilateral derivatives agreements and securities financing transactions included in the largest counterparty default scenario component (described below).

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 firms' business models and the ability to model the individual income or expense component accurately. Separate models are estimated for 24 different components of PPNR:

- The eight components of interest income modeled include income on loans, interest bearing balances, Treasury securities, mortgage-backed securities, federal funds and repurchase agreements, other securities, trading assets, and all other interest income.
- The seven components of interest expense modeled include interest expense on domestic time deposits, non-time deposits, foreign deposits, federal funds and repurchase agreements, trading liabilities and other borrowed money, subordinated debt, and all other interest expenses.
- The six components of noninterest income include trading revenue, and five components of noninterest, non-trading income: service charges on deposits, fiduciary income and insurance and annuity

fees, investment banking fees, net servicing fees, and all other noninterest income.

- Finally, the 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 firm's revenues and non-provision-related expenses, expressed as a share of relevant asset or liability balances, to firm characteristics and to macroeconomic variables;
- aggregate models in which the revenue or expense is allocated to each firm based on a measure of the firm'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 firms 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 firm based on a measure of the firm'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 firms 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.

In the autoregressive models, projections for PPNR components (expressed as a share of a relevant asset or liability balance) converge over time towards the firm's own post-crisis average performance for that revenue or expense category, while still varying in response to changes in macroeconomic conditions. The post-crisis period in this context is defined as the time period from 2009:Q4 onwards. This enhanced modeling approach was introduced in DFAST 2017. For DFAST 2018, PPNR projections reflect only the enhanced models. For DFAST 2017, PPNR projections were calculated as the arithmetic average of the enhanced models and the prior modeling approach.[59]

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 opera-

[59] For more details, see box 1 and box 2 of the disclosure document: *Dodd-Frank Act Stress Test 2017: Supervisory Stress Test Methodology and Results*.

tional losses for the 35 firms and are based on historical operational-loss data submitted by the firms 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 firm and each of the seven operational-risk categories identified in the Board's regulatory capital rule.[60] The historical simulation approach models the loss frequency and loss severity separately. The tails of the loss severity and frequency distributions are informed by historical industry loss severity and frequency scaled to the assets of individual firms, while the bodies of these distributions are informed by each firm's historical loss severity and frequency. The distribution of aggregate losses is then simulated by repeatedly drawing the nine-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 firm are the sum of the firm'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.[61] 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 firms based on each firm's size.

[60] The seven operational-loss event type categories identified in the Federal Reserve's regulatory capital 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).

[61] 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 modeled separately only as a function of size, but not of macroeconomic variables.

Balance-Sheet Items and Risk-Weighted Assets

The size of each firm'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 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 firm tightening that often occur in stressful periods. Over this horizon, each firm is assumed to maintain a constant share of the industry's total assets, total loans, and total trading assets. In addition, each firm 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 firm is assumed to grow at the projected rate of total loans in the industry.
- Each category of trading assets at a firm 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 firm, including securities, are assumed to grow at the projected rate of non-loan assets in the industry.
- A firm'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 firm's business plan, such as mergers, acquisitions, and divestitures that are likely to have a material impact on its capital adequacy and funding profile. Firm-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, 2018, 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 regulatory capital rule.[62] The first part requires estimating the path of credit RWAs based on exposures from loans and securities.[63] The second requires estimating the path of market risk-weighted assets (MRWAs) based on exposures under the market-risk rule.[64]

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 firm'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.

[62] 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 deferred indefinitely. See 80 Fed. Reg. 75419 (Dec. 2, 2015); 12 CFR 225.8(d)(10); and 252.42(m).

[63] CFR part 217, subpart D.

[64] 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 firm under the supervisory scenarios. Regulatory capital is calculated using the definitions of capital in the Board's regulatory capital rule.[65] Regulatory capital is calculated consistent with the requirements that will be in effect during the projected quarter of the planning horizon.[66] The definition of regulatory capital changes throughout the planning horizon in accordance with the transition arrangements in the revised regulatory capital framework, where applicable.[67]

Regulatory capital incorporates estimates of net income from supervisory projections of revenues, total losses, and tax expense. Current and deferred tax expenses, and related changes to net deferred tax assets (DTAs), are calculated by applying a consistent tax rate of 21 percent[68] to pretax income or loss. The tax expense includes changes to DTA valuation allowance, which is comprised of a calculation that evaluates whether a firm will have sufficient taxable income to realize its DTAs. Finally, projected after-tax income adjusts for income attributable to minority interests.

For DFAST 2018, 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.[69]

[65] See 12 CFR part 217.

[66] See 12 CFR 225.8(e)(2)(i)(A) and 12 CFR 252.56(a)(2).

[67] See 12 CFR part 217, subpart G.

[68] 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, DC: Board of Governors, March 2013), www.federalreserve.gov/newsevents/press/bcreg/dfast_2013_results_20130314.pdf, box 2.

[69] The Federal Reserve used the following capital action assumptions in projecting post-stress capital levels and ratios: (1) for the first quarter of 2018, each company's actual capital actions as of the end of that quarter; and (2) for each quarter from the second quarter of 2018 through the first quarter of 2020, each company's projections of capital included (i) common stock dividends equal to the quarterly average dollar amount of common stock dividends that the company paid in the previous year (that is, from the second quarter of 2017 through the first quarter of 2018) plus common stock dividends attributable to

Projected regulatory capital levels are calculated under the applicable regulatory 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 debt valuation adjustments (DVA), goodwill, and intangible assets (other than mortgage servicing assets), and components of accumulated other comprehensive income (AOCI) other than unrealized gains (losses) on available-for-sale (AFS) securities, are generally assumed to remain constant at their starting value over the planning horizon. For other items, firm projections—with supervisory adjustments—are 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 RWAs calculated under the standardized approach.[70] RWAs 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 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 capital requirements. Projected capital levels and ratios are not adjusted to account for any differences between projected and actual performance of the firms observed at the time the supervisory stress test results were being produced in the second quarter of 2018.

Modeling Approaches for IHCs Newly Subject to the Supervisory Stress Test

Six IHCs (new entrant IHCs) became subject to the supervisory stress test for the first time in 2018.[71] For these firms, the Federal Reserve modified its approach for modeling revenues and certain types of losses when the data required to produce a modeled estimate were not available from the firms. Specifically, the estimates of PPNR, trading and counterparty losses, and operational risk losses reflect different treatment of these IHCs compared to the other firms subject to the supervisory stress test. In each case, the modified approach utilized estimates produced by these models for the remaining firms in the stress test. The Federal Reserve used the same models it uses for all other firms to estimate loan losses for new entrant IHCs, based on the data the firms provided.

Since the new entrant IHCs were formed as of July 1, 2016, the historical data reported for the legal entity are insufficient to apply the supervisory models of core PPNR components to those firms. The modified PPNR projection for the new entrant IHCs is based on the industry aggregate performance for each revenue and expense component. The ratio for each PPNR component to the relevant asset or liability balance as of December 31, 2017, is generally set equal to its median historical value between the first and fourth quarters of 2017. Over the projection horizon, this ratio is assumed to move by the same number of basis points as the aggregate ratio for the industry excluding the six new entrant IHCs.

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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.

[70] See 12 CFR part 217.

[71] The firms that are newly subject to the supervisory stress test in 2018 are Barclays US LLC; BNP Paribas USA, Inc.; Credit Suisse Holdings (USA), Inc.; Deutsche Bank USA Corp; RBC USA Holdco Corporation; and UBS Americas Holding LLC. These firms became subject to the capital plan rule and were required to submit capital plans to the Federal Reserve for the first time in 2017. The Board's decisions regarding the capital plans of these firms and the results of these firms' company-run stress tests were not disclosed.

Aggregate PPNR exclusive of operational risk in the severely adverse scenario was $20.2 billion for the six IHCs newly subject to the supervisory stress test.

Five of the new entrant IHCs have significant trading activity and will be subject to the full global market shock component in DFAST 2019.[72] In DFAST 2018, the Federal Reserve applied a supervisory market risk component to the five new entrant IHCs and HSBC. Specifically, the Federal Reserve applied loss rates to certain exposures, based on the losses resulting from the global market shock and large counterparty default components for the six domestic firms in 2014–17. The following loss rates were applied to the applicable measure of exposures as of December 31, 2017:

- Securitized products losses: 22.1 percent loss rate in the adverse scenario and 46.4 percent loss rate in the severely adverse scenario to certain loans and credits held for trading.[73]
- Trading mark-to-market and trading incremental default risk losses: 1.4 percent loss rate in the adverse scenario and 1.8 percent loss rate in the severely adverse scenario to market risk-weighted assets.[74]
- Credit valuation adjustments: 1.3 percent loss rate in the adverse scenario and 2.8 percent loss rate in the severely adverse scenario to over-the-counter derivatives risk-weighted assets.[75]
- Large counterparty default losses: 1.0 percent loss rate in the adverse scenario and 1.5 percent loss rate in the severely adverse scenario to repo-style transactions and over-the-counter derivatives risk-weighted assets.[76]

Operational-risk losses were also projected using a modified approach for the six new entrant IHCs, given the lack of a historical measure of total assets that is consistent over time and across firms. The historical simulation model applied to firms with sufficient historical operational-loss data submitted on the FR Y-14A and FR Y-14Q reports cannot be applied to these firms. In the place of the historical simulation model, a modified model assigned each IHC newly subject to the supervisory stress test the average projected loss produced by the historical simulation model, normalized by total assets. This modified model scales the average projected loss by these firms' total assets as of December 31, 2017.

Instead of calculating each firm's projected losses as the average of the regression model and historical simulation approach described earlier, projected operational-risk losses for these firms are calculated as the average of the regression model and the modified model described above.

[72] BNP Paribas USA, Inc., was not subject to the supervisory market risk component. HSBC North America Holdings Inc. will be subject to the global market shock component and was subject to the supervisory market risk component in DFAST 2018.

[73] Securitized products exposure equals the sum of FR Y-9C HC-D Column A, lines 4.c.; 4.e.; 5.a.(1); 5.a.(2); 5.a.(3); 6.a; 6.c.(1); 6.c.(2); 6.c.(3); and 6.c.(4).

[74] Trading mark-to-market and trading incremental default risk exposures equals FR Y-9C HC-R.II line 27.

[75] Credit valuation adjustment exposure equals the risk-weighted amounts of FR Y-9C HC-R.II line 20.

[76] Large counterparty default exposure will equal the risk-weighted amounts of FR Y-9C HC-R.II lines 16 and 20.

Appendix C: Firm-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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.5	6.8	6.8
Tier 1 capital ratio	11.2	8.5	8.5
Total capital ratio	12.9	10.4	10.4
Tier 1 leverage ratio	9.5	7.0	7.0
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	6.9	5.5
First-lien mortgages, domestic	0.3	2.6
Junior liens and HELOCs, domestic	0.1	8.7
Commercial and industrial[2]	2.4	5.4
Commercial real estate, domestic	0.1	3.1
Credit cards	0.0	0.0
Other consumer[3]	3.9	6.3
Other loans[4]	0.0	7.8

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	138.9	144.4

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	5.7	3.3
Other revenue[3]	0.0	
less		
Provisions	8.3	
Realized losses/gains on securities (AFS/HTM)	0.6	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	-3.3	-1.9
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.5	7.7	7.7
Tier 1 capital ratio	11.2	9.4	9.4
Total capital ratio	12.9	11.3	11.3
Tier 1 leverage ratio	9.5	7.7	7.7
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.7	3.7
First-lien mortgages, domestic	0.1	1.0
Junior liens and HELOCs, domestic	0.1	4.8
Commercial and industrial[2]	1.5	3.3
Commercial real estate, domestic	0.1	1.6
Credit cards	0.0	0.0
Other consumer[3]	3.0	4.7
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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	138.9	147.1

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	4.2	2.4
Other revenue[3]	0.0	
less		
Provisions	5.5	
Realized losses/gains on securities (AFS/HTM)	0.2	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	-1.5	-0.9
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

[7] Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.0	8.7	7.8
Tier 1 capital ratio	10.1	9.7	8.8
Total capital ratio	11.8	11.3	10.5
Tier 1 leverage ratio	8.6	8.3	7.6
Supplementary leverage ratio	n/a	7.1	6.6

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	12.8	9.7
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	4.9	10.6
Commercial real estate, domestic	0.0	0.0
Credit cards	7.8	9.1
Other consumer[3]	0.2	12.9
Other loans[4]	0.0	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	145.9	156.5

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	21.5	11.4
Other revenue[3]	0.0	
less		
Provisions	16.2	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	5.2	2.8
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-2.3	-2.4

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.0	10.8	8.8
Tier 1 capital ratio	10.1	11.8	9.8
Total capital ratio	11.8	13.3	11.5
Tier 1 leverage ratio	8.6	9.9	8.5
Supplementary leverage ratio	n/a	8.6	7.4

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	9.5	7.1
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	3.6	7.7
Commercial real estate, domestic	0.0	0.0
Credit cards	5.8	6.8
Other consumer[3]	0.1	10.2
Other loans[4]	0.0	3.7

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	145.9	159.5

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	20.6	10.8
Other revenue[3]	0.0	
less		
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	
equals		
Net income before taxes	8.8	4.6
Memo items		
Other comprehensive income[6]	0.1	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-2.3	-2.4

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.3.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	8.3	7.9
Tier 1 capital ratio	13.4	9.9	9.5
Total capital ratio	15.9	12.4	12.3
Tier 1 leverage ratio	8.6	6.3	6.1
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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	1,433.5	1,501.6

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	51.3	2.2
Other revenue[3]	0.0	
less		
Provisions	55.8	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses[4]	17.3	
Other losses/gains[5]	4.4	
equals		
Net income before taxes	-26.6	-1.1
Memo items		
Other comprehensive income[6]	-1.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-5.4	-7.2

[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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Projected loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	49.7	5.0
First-lien mortgages, domestic	4.7	2.3
Junior liens and HELOCs, domestic	2.8	4.7
Commercial and industrial[2]	14.9	5.6
Commercial real estate, domestic	5.9	8.1
Credit cards	12.9	13.1
Other consumer[3]	1.6	2.0
Other loans[4]	6.9	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.

Table C.3.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	10.9	10.9
Tier 1 capital ratio	13.4	12.5	12.5
Total capital ratio	15.9	14.7	14.7
Tier 1 leverage ratio	8.6	7.9	7.9
Supplementary leverage ratio	n/a	6.4	6.4

[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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	28.7	2.9
First-lien mortgages, domestic	1.2	0.6
Junior liens and HELOCs, domestic	0.9	1.6
Commercial and industrial[2]	9.2	3.4
Commercial real estate, domestic	2.5	3.3
Credit cards	9.6	9.7
Other consumer[3]	1.1	1.4
Other loans[4]	4.2	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	1,433.5	1,542.5

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	47.8	2.0
Other revenue[3]	0.0	
less		
Provisions	28.8	
Realized losses/gains on securities (AFS/HTM)	0.2	
Trading and counterparty losses[4]	7.0	
Other losses/gains[5]	3.2	
equals		
Net income before taxes	8.6	0.4
Memo items		
Other comprehensive income[6]	8.3	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-5.4	2.1

[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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.4.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	12.5	9.0
Tier 1 capital ratio	14.2	14.6	11.2
Total capital ratio	15.1	15.8	12.3
Tier 1 leverage ratio	6.6	6.7	5.3
Supplementary leverage ratio	n/a	6.2	4.8

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	2.0	3.1
First-lien mortgages, domestic	0.3	2.5
Junior liens and HELOCs, domestic	0.0	5.4
Commercial and industrial[2]	0.1	3.1
Commercial real estate, domestic	0.4	10.8
Credit cards	0.0	0.0
Other consumer[3]	0.3	9.6
Other loans[4]	0.9	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	155.6	161.7

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	11.6	3.0
Other revenue[3]	0.0	
less		
Provisions	2.4	
Realized losses/gains on securities (AFS/HTM)	0.3	
Trading and counterparty losses[4]	1.9	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	6.9	1.8
Memo items		
Other comprehensive income[6]	-1.4	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-2.2	-3.8

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.4.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	14.1	12.6
Tier 1 capital ratio	14.2	16.2	14.7
Total capital ratio	15.1	17.2	15.7
Tier 1 leverage ratio	6.6	7.4	6.9
Supplementary leverage ratio	n/a	6.8	6.4

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.1	1.8
First-lien mortgages, domestic	0.1	0.9
Junior liens and HELOCs, domestic	0.0	3.0
Commercial and industrial[2]	0.1	1.9
Commercial real estate, domestic	0.1	3.8
Credit cards	0.0	0.0
Other consumer[3]	0.3	7.6
Other loans[4]	0.6	1.4

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	155.6	165.1

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	9.6	2.5
Other revenue[3]	0.0	
less		
Provisions	1.4	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.4	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	7.7	2.0
Memo items		
Other comprehensive income[6]	1.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-2.2	-1.3

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.5.A. Barclays US 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	13.1	11.3	9.6
Tier 1 capital ratio	15.7	13.8	12.1
Total capital ratio	18.8	16.7	14.8
Tier 1 leverage ratio	8.2	7.1	6.5
Supplementary leverage ratio	n/a	5.7	5.3

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.0	10.5
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.0	24.4
Commercial real estate, domestic	0.0	7.1
Credit cards	3.9	14.7
Other consumer[3]	0.0	12.9
Other loans[4]	0.1	0.9

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	99.2	103.6

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	5.4	3.3
Other revenue[3]	0.0	
less		
Provisions	4.2	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	1.2	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	-0.1	-0.1
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.5.B. Barclays US 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	13.1	12.9	11.2
Tier 1 capital ratio	15.7	15.3	13.7
Total capital ratio	18.8	17.6	16.0
Tier 1 leverage ratio	8.2	7.9	7.3
Supplementary leverage ratio	n/a	6.4	5.9

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.1	8.0
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.0	20.3
Commercial real estate, domestic	0.0	2.4
Credit cards	3.0	11.2
Other consumer[3]	0.0	10.2
Other loans[4]	0.1	0.6

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	99.2	107.3

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	5.9	3.6
Other revenue[3]	0.0	
less		
Provisions	3.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.8	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	2.1	1.3
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.2	8.0	7.9
Tier 1 capital ratio	11.9	9.6	9.5
Total capital ratio	13.9	12.0	11.9
Tier 1 leverage ratio	9.9	7.8	7.8
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	8.4	5.8
First-lien mortgages, domestic	0.9	3.1
Junior liens and HELOCs, domestic	0.4	3.8
Commercial and industrial[2]	1.8	6.2
Commercial real estate, domestic	2.9	7.8
Credit cards	0.3	13.8
Other consumer[3]	1.3	6.9
Other loans[4]	0.9	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	177.2	186.6

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	9.5	4.1
Other revenue[3]	0.0	
less		
Provisions	9.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-0.3	-0.1
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

[7] Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.2	9.3	9.3
Tier 1 capital ratio	11.9	11.0	10.9
Total capital ratio	13.9	13.0	13.0
Tier 1 leverage ratio	9.9	8.8	8.8
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	177.2	189.3

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	8.4	3.6
Other revenue[3]	0.0	
less		
Provisions	5.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	3.2	1.4
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Projected loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.7	3.2
First-lien mortgages, domestic	0.4	1.4
Junior liens and HELOCs, domestic	0.2	1.9
Commercial and industrial[2]	1.1	3.9
Commercial real estate, domestic	1.3	3.4
Credit cards	0.2	10.0
Other consumer[3]	1.0	4.9
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.

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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.8	7.6	7.6
Tier 1 capital ratio	12.1	8.0	8.0
Total capital ratio	14.4	10.3	10.3
Tier 1 leverage ratio	10.0	6.4	6.4
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.4	7.1
First-lien mortgages, domestic	0.7	4.8
Junior liens and HELOCs, domestic	0.2	5.4
Commercial and industrial[2]	1.5	8.1
Commercial real estate, domestic	1.5	10.4
Credit cards	0.1	16.0
Other consumer[3]	0.4	7.9
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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	67.5	70.2

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.5	2.8
Other revenue[3]	0.0	
less		
Provisions	4.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-2.4	-2.6
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.8	10.1	10.1
Tier 1 capital ratio	12.1	10.4	10.4
Total capital ratio	14.4	12.6	12.6
Tier 1 leverage ratio	10.0	8.3	8.3
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	2.4	3.8
First-lien mortgages, domestic	0.3	2.0
Junior liens and HELOCs, domestic	0.1	2.7
Commercial and industrial[2]	1.0	5.1
Commercial real estate, domestic	0.6	4.2
Credit cards	0.1	12.4
Other consumer[3]	0.3	6.4
Other loans[4]	0.1	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	67.5	71.6

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.0	2.2
Other revenue[3]	0.0	
less		
Provisions	2.4	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-0.4	-0.4
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.1	8.3	8.3
Tier 1 capital ratio	12.6	8.9	8.9
Total capital ratio	15.3	12.0	12.0
Tier 1 leverage ratio	9.8	6.8	6.8
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	99.9	103.6

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.6	1.9
Other revenue[3]	0.0	
less		
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	
equals		
Net income before taxes	-3.1	-2.3
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Projected loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.8	6.5
First-lien mortgages, domestic	0.3	3.3
Junior liens and HELOCs, domestic	0.3	9.6
Commercial and industrial[2]	2.2	7.3
Commercial real estate, domestic	0.9	8.9
Credit cards	0.1	12.5
Other consumer[3]	0.1	2.6
Other loans[4]	0.9	5.6

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.

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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.1	9.9	9.9
Tier 1 capital ratio	12.6	10.6	10.6
Total capital ratio	15.3	13.4	13.4
Tier 1 leverage ratio	9.8	7.9	7.9
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	2.8	3.8
First-lien mortgages, domestic	0.1	1.4
Junior liens and HELOCs, domestic	0.2	7.0
Commercial and industrial[2]	1.4	4.7
Commercial real estate, domestic	0.4	3.7
Credit cards	0.0	9.2
Other consumer[3]	0.1	1.9
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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	99.9	105.7

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.1	1.5
Other revenue[3]	0.0	
less		
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	
equals		
Net income before taxes	-1.1	-0.8
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.9.A. BNP Paribas 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.4	7.9	7.9
Tier 1 capital ratio	12.8	8.4	8.4
Total capital ratio	15.0	10.9	10.9
Tier 1 leverage ratio	9.3	5.9	5.9
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	5.5	7.0
First-lien mortgages, domestic	0.3	2.7
Junior liens and HELOCs, domestic	0.2	5.8
Commercial and industrial[2]	1.7	10.4
Commercial real estate, domestic	1.7	9.0
Credit cards	0.1	14.7
Other consumer[3]	1.0	5.6
Other loans[4]	0.5	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	100.8	104.4

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.6	1.8
Other revenue[3]	0.0	
less		
Provisions	6.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-4.0	-2.8
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.9.B. BNP Paribas 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 2017:Q4 and projected 2018:Q1–2020:Q1
Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.4	10.0	10.0
Tier 1 capital ratio	12.8	10.5	10.5
Total capital ratio	15.0	12.9	12.9
Tier 1 leverage ratio	9.3	7.4	7.4
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.1	3.9
First-lien mortgages, domestic	0.1	0.9
Junior liens and HELOCs, domestic	0.1	2.6
Commercial and industrial[2]	1.1	6.5
Commercial real estate, domestic	0.8	4.1
Credit cards	0.0	10.6
Other consumer[3]	0.6	3.6
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 2017:Q4 and projected 2020:Q1
Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	100.8	107.6

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.2	1.5
Other revenue[3]	0.0	
less		
Provisions	3.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-1.4	-0.9
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.10.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.3	5.8	5.7
Tier 1 capital ratio	11.8	7.1	7.1
Total capital ratio	14.4	9.6	9.6
Tier 1 leverage ratio	9.9	6.0	6.0
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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	34.8	13.4
First-lien mortgages, domestic	0.1	0.7
Junior liens and HELOCs, domestic	0.1	5.5
Commercial and industrial[2]	3.8	12.9
Commercial real estate, domestic	2.2	7.3
Credit cards	23.1	21.2
Other consumer[3]	4.6	8.4
Other loans[4]	0.9	5.0

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	292.2	313.0

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	32.0	8.4
Other revenue[3]	0.0	
less		
Provisions	39.2	
Realized losses/gains on securities (AFS/HTM)	0.2	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.3	
equals		
Net income before taxes	-7.5	-2.0
Memo items		
Other comprehensive income[6]	-1.2	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.6	-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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.10.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.3	9.3	9.0
Tier 1 capital ratio	11.8	10.7	10.4
Total capital ratio	14.4	13.0	12.8
Tier 1 leverage ratio	9.9	8.9	8.8
Supplementary leverage ratio	n/a	7.6	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	25.7	9.8
First-lien mortgages, domestic	0.0	0.3
Junior liens and HELOCs, domestic	0.1	3.3
Commercial and industrial[2]	2.5	8.6
Commercial real estate, domestic	0.8	2.7
Credit cards	18.1	16.5
Other consumer[3]	3.5	6.4
Other loans[4]	0.5	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	292.2	319.8

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	29.6	7.7
Other revenue[3]	0.0	
less		
Provisions	27.4	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.2	
equals		
Net income before taxes	1.9	0.5
Memo items		
Other comprehensive income[6]	0.4	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.6	-0.3

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	13.0	9.2	7.2
Tier 1 capital ratio	14.5	10.8	8.8
Total capital ratio	17.8	14.0	12.1
Tier 1 leverage ratio	8.8	6.5	5.4
Supplementary leverage ratio	n/a	5.0	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	1,138.2	1,199.0

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	61.9	3.2
Other revenue[3]	0.0	
less		
Provisions	52.4	
Realized losses/gains on securities (AFS/HTM)	2.9	
Trading and counterparty losses[4]	16.2	
Other losses/gains[5]	3.8	
equals		
Net income before taxes	-13.4	-0.7
Memo items		
Other comprehensive income[6]	-5.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-32.5	-38.9

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Projected loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	48.4	7.0
First-lien mortgages, domestic	2.7	3.6
Junior liens and HELOCs, domestic	1.3	7.5
Commercial and industrial[2]	9.0	5.1
Commercial real estate, domestic	2.1	10.6
Credit cards	22.5	13.9
Other consumer[3]	3.2	10.2
Other loans[4]	7.7	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.

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 2017:Q4 and projected 2018:Q1–2020:Q1
Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	13.0	12.0	11.0
Tier 1 capital ratio	14.5	13.6	12.6
Total capital ratio	17.8	16.4	15.8
Tier 1 leverage ratio	8.8	8.2	7.7
Supplementary leverage ratio	n/a	6.3	5.9

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	33.2	4.8
First-lien mortgages, domestic	0.9	1.2
Junior liens and HELOCs, domestic	0.5	2.7
Commercial and industrial[2]	6.2	3.5
Commercial real estate, domestic	0.7	3.6
Credit cards	17.4	10.7
Other consumer[3]	2.8	9.1
Other loans[4]	4.7	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 2017:Q4 and projected 2020:Q1
Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	1,138.2	1,233.8

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	58.8	3.0
Other revenue[3]	0.0	
less		
Provisions	32.9	
Realized losses/gains on securities (AFS/HTM)	0.8	
Trading and counterparty losses[4]	7.6	
Other losses/gains[5]	2.5	
equals		
Net income before taxes	15.0	0.8
Memo items		
Other comprehensive income[6]	3.5	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-32.5	-30.5

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.2	6.8	6.8
Tier 1 capital ratio	11.4	6.9	6.9
Total capital ratio	13.9	9.4	9.4
Tier 1 leverage ratio	10.0	5.9	5.9
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	6.8	6.1
First-lien mortgages, domestic	0.4	2.5
Junior liens and HELOCs, domestic	0.7	4.8
Commercial and industrial[2]	2.3	7.2
Commercial real estate, domestic	1.5	9.8
Credit cards	0.2	12.3
Other consumer[3]	1.3	5.6
Other loans[4]	0.3	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	127.7	132.8

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	3.5	2.2
Other revenue[3]	0.0	
less		
Provisions	8.0	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	-4.6	-2.9
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1
Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.2	8.4	8.4
Tier 1 capital ratio	11.4	8.6	8.6
Total capital ratio	13.9	11.0	11.0
Tier 1 leverage ratio	10.0	7.3	7.3
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.0	3.6
First-lien mortgages, domestic	0.2	1.1
Junior liens and HELOCs, domestic	0.4	2.7
Commercial and industrial[2]	1.4	4.3
Commercial real estate, domestic	0.6	4.0
Credit cards	0.2	9.3
Other consumer[3]	1.1	4.6
Other loans[4]	0.2	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 2017:Q4 and projected 2020:Q1
Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	127.7	135.5

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.6	1.6
Other revenue[3]	0.0	
less		
Provisions	4.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	-2.0	-1.3
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.13.A. Credit Suisse 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	24.7	20.4	17.6
Tier 1 capital ratio	24.7	21.0	18.2
Total capital ratio	24.8	21.1	18.3
Tier 1 leverage ratio	7.3	7.6	6.7
Supplementary leverage ratio	n/a	7.4	6.6

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.1	0.6
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.0	0.0
Commercial real estate, domestic	0.0	0.0
Credit cards	0.0	0.0
Other consumer[3]	0.0	12.9
Other loans[4]	0.1	0.6

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	65.3	63.5

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	1.6	1.1
Other revenue[3]	0.0	
less		
Provisions	0.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	3.5	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	-2.1	-1.4
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.13.B. Credit Suisse 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	24.7	21.4	19.8
Tier 1 capital ratio	24.7	21.9	20.3
Total capital ratio	24.8	21.9	20.4
Tier 1 leverage ratio	7.3	8.5	7.9
Supplementary leverage ratio	n/a	8.3	7.7

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.1	0.5
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.0	0.0
Commercial real estate, domestic	0.0	0.0
Credit cards	0.0	0.0
Other consumer[3]	0.0	10.2
Other loans[4]	0.1	0.5

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	65.3	70.2

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.1	1.4
Other revenue[3]	0.0	
less		
Provisions	0.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	1.9	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	0.0	0.0
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.14.A. DB USA 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.5	12.7	12.2
Tier 1 capital ratio	25.9	22.2	21.7
Total capital ratio	25.9	22.5	22.0
Tier 1 leverage ratio	7.2	5.7	5.7
Supplementary leverage ratio	n/a	5.2	5.2

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.4	3.1
First-lien mortgages, domestic	0.1	2.8
Junior liens and HELOCs, domestic	0.0	6.9
Commercial and industrial[2]	0.0	2.4
Commercial real estate, domestic	0.2	7.4
Credit cards	0.0	0.0
Other consumer[3]	0.0	5.9
Other loans[4]	0.1	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	44.1	43.9

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	0.4	0.3
Other revenue[3]	0.0	
less		
Provisions	0.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.8	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-1.0	-0.6
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.3	-0.3

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.14.B. DB USA 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.5	13.6	13.3
Tier 1 capital ratio	25.9	22.4	22.2
Total capital ratio	25.9	22.6	22.4
Tier 1 leverage ratio	7.2	6.1	6.0
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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.2	1.4
First-lien mortgages, domestic	0.0	1.1
Junior liens and HELOCs, domestic	0.0	3.0
Commercial and industrial[2]	0.0	1.4
Commercial real estate, domestic	0.1	2.3
Credit cards	0.0	0.0
Other consumer[3]	0.0	4.7
Other loans[4]	0.1	0.9

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	44.1	47.2

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	0.7	0.4
Other revenue[3]	0.0	
less		
Provisions	0.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.5	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-0.1	-0.1
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.3	-0.3

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.6	9.5	8.9
Tier 1 capital ratio	12.3	10.1	9.5
Total capital ratio	13.8	11.8	11.3
Tier 1 leverage ratio	10.8	8.8	8.5
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	12.2	14.2
First-lien mortgages, domestic	0.0	3.3
Junior liens and HELOCs, domestic	0.0	14.8
Commercial and industrial[2]	0.0	15.1
Commercial real estate, domestic	0.0	18.8
Credit cards	10.3	15.0
Other consumer[3]	1.9	11.1
Other loans[4]	0.0	6.5

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	86.8	91.9

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	14.8	14.3
Other revenue[3]	0.0	
less		
Provisions	14.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	0.3	0.3
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.6	12.2	10.6
Tier 1 capital ratio	12.3	12.8	11.2
Total capital ratio	13.8	14.4	12.7
Tier 1 leverage ratio	10.8	10.9	10.1
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	9.3	10.7
First-lien mortgages, domestic	0.0	1.4
Junior liens and HELOCs, domestic	0.0	7.1
Commercial and industrial[2]	0.0	11.2
Commercial real estate, domestic	0.0	6.7
Credit cards	7.7	11.1
Other consumer[3]	1.6	9.4
Other loans[4]	0.0	3.7

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	86.8	92.6

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	14.3	13.5
Other revenue[3]	0.0	
less		
Provisions	10.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	3.5	3.4
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.6	7.5	7.5
Tier 1 capital ratio	11.7	8.5	8.5
Total capital ratio	15.2	11.8	11.8
Tier 1 leverage ratio	10.0	7.1	7.1
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	118.0	123.9

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 loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	5.7	6.1
First-lien mortgages, domestic	0.5	3.3
Junior liens and HELOCs, domestic	0.3	4.7
Commercial and industrial[2]	2.2	5.9
Commercial real estate, domestic	1.4	12.8
Credit cards	0.4	18.4
Other consumer[3]	0.4	3.9
Other loans[4]	0.4	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.

Projected losses, revenue, and net income before taxes through 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	4.3	2.9
Other revenue[3]	0.0	
less		
Provisions	6.1	
Realized losses/gains on securities (AFS/HTM)	0.2	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-2.0	-1.4
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.6	9.3	9.2
Tier 1 capital ratio	11.7	10.3	10.3
Total capital ratio	15.2	13.1	13.1
Tier 1 leverage ratio	10.0	8.5	8.5
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.3	3.5
First-lien mortgages, domestic	0.3	2.0
Junior liens and HELOCs, domestic	0.2	2.9
Commercial and industrial[2]	1.3	3.6
Commercial real estate, domestic	0.6	5.0
Credit cards	0.3	12.8
Other consumer[3]	0.3	3.0
Other loans[4]	0.3	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	118.0	125.9

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	3.7	2.5
Other revenue[3]	0.0	
less		
Provisions	3.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	0.6	0.4
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.1	6.9	5.6
Tier 1 capital ratio	14.1	8.7	7.3
Total capital ratio	16.8	11.4	10.2
Tier 1 leverage ratio	8.4	5.1	4.4
Supplementary leverage ratio	n/a	3.5	3.1

[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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	9.6	9.7
First-lien mortgages, domestic	1.6	46.9
Junior liens and HELOCs, domestic	0.0	5.2
Commercial and industrial[2]	3.4	16.9
Commercial real estate, domestic	0.6	12.2
Credit cards	0.0	0.0
Other consumer[3]	0.4	8.5
Other loans[4]	3.7	5.6

[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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	555.6	574.1

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	6.1	0.6
Other revenue[3]	0.0	
less		
Provisions	11.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	13.3	
Other losses/gains[5]	6.4	
equals		
Net income before taxes	-25.0	-2.6
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-1.8	-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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

[7] Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.1	10.2	9.1
Tier 1 capital ratio	14.1	11.9	10.9
Total capital ratio	16.8	14.2	13.5
Tier 1 leverage ratio	8.4	7.1	6.6
Supplementary leverage ratio	n/a	4.9	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	6.2	6.2
First-lien mortgages, domestic	1.4	40.4
Junior liens and HELOCs, domestic	0.0	2.8
Commercial and industrial[2]	2.1	10.3
Commercial real estate, domestic	0.2	4.1
Credit cards	0.0	0.0
Other consumer[3]	0.3	6.9
Other loans[4]	2.2	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	555.6	611.0

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	16.0	1.7
Other revenue[3]	0.0	
less		
Provisions	6.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	6.5	
Other losses/gains[5]	5.4	
equals		
Net income before taxes	-2.8	-0.3
Memo items		
Other comprehensive income[6]	0.5	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-1.8	-1.3

[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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

[7] Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	15.5	8.1	8.1
Tier 1 capital ratio	18.3	10.9	10.9
Total capital ratio	22.8	15.3	15.3
Tier 1 leverage ratio	8.9	5.2	5.2
Supplementary leverage ratio	n/a	4.0	4.0

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.1	6.1
First-lien mortgages, domestic	0.5	3.0
Junior liens and HELOCs, domestic	0.1	5.1
Commercial and industrial[2]	2.0	7.5
Commercial real estate, domestic	0.9	8.8
Credit cards	0.1	14.7
Other consumer[3]	0.0	7.1
Other loans[4]	0.5	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	131.9	136.0

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	-0.6	-0.2
Other revenue[3]	0.0	
less		
Provisions	4.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.8	
Other losses/gains[5]	0.3	
equals		
Net income before taxes	-6.2	-2.2
Memo items		
Other comprehensive income[6]	0.4	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.6	-0.3

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	15.5	10.9	10.9
Tier 1 capital ratio	18.3	13.6	13.6
Total capital ratio	22.8	17.4	17.4
Tier 1 leverage ratio	8.9	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	2.1	3.2
First-lien mortgages, domestic	0.1	0.8
Junior liens and HELOCs, domestic	0.0	2.5
Commercial and industrial[2]	1.3	4.8
Commercial real estate, domestic	0.3	2.9
Credit cards	0.1	10.6
Other consumer[3]	0.0	5.9
Other loans[4]	0.3	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	131.9	139.6

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	-0.6	-0.2
Other revenue[3]	0.0	
less		
Provisions	2.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.5	
Other losses/gains[5]	0.2	
equals		
Net income before taxes	-3.3	-1.2
Memo items		
Other comprehensive income[6]	1.4	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.6	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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.0	8.1	8.1
Tier 1 capital ratio	11.3	9.6	9.6
Total capital ratio	13.4	11.5	11.5
Tier 1 leverage ratio	9.1	7.5	7.5
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	80.3	84.1

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	3.8	3.5
Other revenue[3]	0.0	
less		
Provisions	4.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-0.6	-0.5
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Projected loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.8	5.3
First-lien mortgages, domestic	0.4	3.7
Junior liens and HELOCs, domestic	0.3	3.6
Commercial and industrial[2]	1.2	6.1
Commercial real estate, domestic	0.9	8.5
Credit cards	0.1	14.7
Other consumer[3]	0.6	3.8
Other loans[4]	0.2	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.

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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.0	9.1	9.1
Tier 1 capital ratio	11.3	10.5	10.5
Total capital ratio	13.4	12.1	12.1
Tier 1 leverage ratio	9.1	8.1	8.1
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	2.2	3.0
First-lien mortgages, domestic	0.2	1.7
Junior liens and HELOCs, domestic	0.2	2.1
Commercial and industrial[2]	0.8	3.8
Commercial real estate, domestic	0.4	3.9
Credit cards	0.1	10.6
Other consumer[3]	0.4	2.7
Other loans[4]	0.1	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	80.3	85.3

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.9	2.6
Other revenue[3]	0.0	
less		
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	
equals		
Net income before taxes	0.5	0.5
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.2	7.9	7.2
Tier 1 capital ratio	13.9	9.5	8.8
Total capital ratio	15.9	11.9	11.0
Tier 1 leverage ratio	8.3	5.6	5.3
Supplementary leverage ratio	n/a	4.4	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	1,499.5	1,587.0

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	71.5	2.7
Other revenue[3]	0.0	
less		
Provisions	68.5	
Realized losses/gains on securities (AFS/HTM)	1.0	
Trading and counterparty losses[4]	29.4	
Other losses/gains[5]	1.2	
equals		
Net income before taxes	-28.5	-1.1
Memo items		
Other comprehensive income[6]	-6.7	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.3	-6.9

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Projected loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	61.8	6.4
First-lien mortgages, domestic	5.8	2.4
Junior liens and HELOCs, domestic	1.9	4.5
Commercial and industrial[2]	18.1	11.0
Commercial real estate, domestic	5.9	5.1
Credit cards	17.3	12.3
Other consumer[3]	2.2	3.4
Other loans[4]	10.5	5.3

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.

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 2017:Q4 and projected 2018:Q1–2020:Q1
Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.2	10.8	10.6
Tier 1 capital ratio	13.9	12.4	12.2
Total capital ratio	15.9	14.3	14.1
Tier 1 leverage ratio	8.3	7.3	7.3
Supplementary leverage ratio	n/a	5.7	5.7

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	37.3	3.8
First-lien mortgages, domestic	1.7	0.7
Junior liens and HELOCs, domestic	0.9	2.0
Commercial and industrial[2]	11.6	7.0
Commercial real estate, domestic	2.5	2.1
Credit cards	12.8	9.0
Other consumer[3]	1.7	2.5
Other loans[4]	6.3	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 2017:Q4 and projected 2020:Q1
Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	1,499.5	1,629.2

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	73.0	2.7
Other revenue[3]	0.0	
less		
Provisions	37.2	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses[4]	13.1	
Other losses/gains[5]	0.9	
equals		
Net income before taxes	21.5	0.8
Memo items		
Other comprehensive income[6]	-0.2	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.3	-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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.2	6.8	6.8
Tier 1 capital ratio	11.0	7.6	7.6
Total capital ratio	12.9	9.8	9.8
Tier 1 leverage ratio	9.7	6.6	6.6
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	118.8	124.9

[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 loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	5.4	6.1
First-lien mortgages, domestic	0.3	3.9
Junior liens and HELOCs, domestic	0.4	4.3
Commercial and industrial[2]	2.2	6.7
Commercial real estate, domestic	1.5	9.3
Credit cards	0.1	13.2
Other consumer[3]	0.4	5.8
Other loans[4]	0.5	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.

Projected losses, revenue, and net income before taxes through 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	3.8	2.6
Other revenue[3]	0.0	
less		
Provisions	6.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.2	
equals		
Net income before taxes	-2.5	-1.8
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

[7] Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1
Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.2	8.4	8.4
Tier 1 capital ratio	11.0	9.2	9.2
Total capital ratio	12.9	11.0	11.0
Tier 1 leverage ratio	9.7	7.9	7.9
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.1	3.4
First-lien mortgages, domestic	0.2	2.2
Junior liens and HELOCs, domestic	0.2	2.6
Commercial and industrial[2]	1.3	3.9
Commercial real estate, domestic	0.6	3.9
Credit cards	0.1	9.7
Other consumer[3]	0.3	4.6
Other loans[4]	0.3	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 2017:Q4 and projected 2020:Q1
Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	118.8	127.2

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	3.2	2.2
Other revenue[3]	0.0	
less		
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	
equals		
Net income before taxes	-0.1	-0.1
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.0	7.6	7.5
Tier 1 capital ratio	12.3	8.8	8.8
Total capital ratio	14.8	11.1	11.0
Tier 1 leverage ratio	10.3	7.2	7.2
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	6.0	6.7
First-lien mortgages, domestic	0.8	4.3
Junior liens and HELOCs, domestic	0.2	4.3
Commercial and industrial[2]	1.0	5.8
Commercial real estate, domestic	3.1	9.3
Credit cards	0.1	14.7
Other consumer[3]	0.4	5.8
Other loans[4]	0.3	5.6

[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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	97.1	101.2

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	5.4	4.4
Other revenue[3]	0.0	
less		
Provisions	6.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-1.3	-1.1
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

[7] Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.0	9.9	9.8
Tier 1 capital ratio	12.3	11.1	11.0
Total capital ratio	14.8	13.1	13.1
Tier 1 leverage ratio	10.3	9.0	9.0
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.0	3.4
First-lien mortgages, domestic	0.4	2.1
Junior liens and HELOCs, domestic	0.1	2.6
Commercial and industrial[2]	0.7	3.8
Commercial real estate, domestic	1.3	3.7
Credit cards	0.1	10.6
Other consumer[3]	0.3	4.1
Other loans[4]	0.2	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	97.1	102.8

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	4.7	3.7
Other revenue[3]	0.0	
less		
Provisions	3.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	1.5	1.2
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

[7] Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.5	8.9	7.3
Tier 1 capital ratio	18.9	11.1	9.4
Total capital ratio	21.7	13.6	12.2
Tier 1 leverage ratio	8.3	4.7	4.3
Supplementary leverage ratio	n/a	3.7	3.3

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.6	3.6
First-lien mortgages, domestic	0.6	2.2
Junior liens and HELOCs, domestic	0.0	5.2
Commercial and industrial[2]	1.1	11.3
Commercial real estate, domestic	1.0	7.3
Credit cards	0.0	0.0
Other consumer[3]	0.1	0.6
Other loans[4]	1.8	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	369.6	382.5

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	3.0	0.3
Other revenue[3]	0.0	
less		
Provisions	5.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	11.7	
Other losses/gains[5]	6.1	
equals		
Net income before taxes	-20.8	-2.4
Memo items		
Other comprehensive income[6]	0.1	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-2.8	-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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1
Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.5	13.1	12.5
Tier 1 capital ratio	18.9	15.2	14.6
Total capital ratio	21.7	17.4	17.0
Tier 1 leverage ratio	8.3	6.7	6.5
Supplementary leverage ratio	n/a	5.2	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	2.4	1.9
First-lien mortgages, domestic	0.2	0.7
Junior liens and HELOCs, domestic	0.0	2.8
Commercial and industrial[2]	0.7	6.8
Commercial real estate, domestic	0.3	2.3
Credit cards	0.0	0.0
Other consumer[3]	0.1	0.6
Other loans[4]	1.1	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 2017:Q4 and projected 2020:Q1
Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	369.6	404.7

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	8.1	0.9
Other revenue[3]	0.0	
less		
Provisions	3.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	4.2	
Other losses/gains[5]	4.0	
equals		
Net income before taxes	-3.2	-0.4
Memo items		
Other comprehensive income[6]	1.5	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-2.8	-1.6

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.3	12.2	12.2
Tier 1 capital ratio	16.3	12.2	12.2
Total capital ratio	17.8	14.0	14.0
Tier 1 leverage ratio	10.1	7.3	7.3
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.8	5.9
First-lien mortgages, domestic	1.4	3.7
Junior liens and HELOCs, domestic	0.1	4.6
Commercial and industrial[2]	1.4	8.2
Commercial real estate, domestic	1.4	8.3
Credit cards	0.0	14.7
Other consumer[3]	0.2	15.3
Other loans[4]	0.4	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	96.3	100.1

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	3.1	2.0
Other revenue[3]	0.0	
less		
Provisions	5.6	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	-2.7	-1.7
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

[7] Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.3	14.3	14.3
Tier 1 capital ratio	16.3	14.3	14.3
Total capital ratio	17.8	15.5	15.5
Tier 1 leverage ratio	10.1	8.6	8.6
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	2.0	2.5
First-lien mortgages, domestic	0.3	0.8
Junior liens and HELOCs, domestic	0.0	1.1
Commercial and industrial[2]	0.8	4.8
Commercial real estate, domestic	0.5	3.1
Credit cards	0.0	10.6
Other consumer[3]	0.1	12.6
Other loans[4]	0.2	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	96.3	102.4

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.3	1.4
Other revenue[3]	0.0	
less		
Provisions	2.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	0.0	0.0
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.6	12.5	11.7
Tier 1 capital ratio	13.8	13.7	12.9
Total capital ratio	15.8	16.1	15.4
Tier 1 leverage ratio	7.8	7.6	7.3
Supplementary leverage ratio	n/a	6.7	6.4

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.8	5.3
First-lien mortgages, domestic	0.2	2.4
Junior liens and HELOCs, domestic	0.1	9.6
Commercial and industrial[2]	0.3	5.5
Commercial real estate, domestic	0.3	7.7
Credit cards	0.0	0.0
Other consumer[3]	0.0	12.9
Other loans[4]	0.9	5.4

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	68.6	72.2

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	4.0	2.8
Other revenue[3]	0.0	
less		
Provisions	2.2	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	1.7	1.2
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.3	-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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.6	12.6	12.5
Tier 1 capital ratio	13.8	13.8	13.7
Total capital ratio	15.8	15.8	15.8
Tier 1 leverage ratio	7.8	7.6	7.6
Supplementary leverage ratio	n/a	6.6	6.6

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.9	2.7
First-lien mortgages, domestic	0.0	0.6
Junior liens and HELOCs, domestic	0.1	4.4
Commercial and industrial[2]	0.2	3.2
Commercial real estate, domestic	0.1	2.9
Credit cards	0.0	0.0
Other consumer[3]	0.0	10.2
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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	68.6	73.3

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.7	1.8
Other revenue[3]	0.0	
less		
Provisions	1.1	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	1.4	1.0
Memo items		
Other comprehensive income[6]	0.4	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.3	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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.4	7.1	6.4
Tier 1 capital ratio	11.6	8.2	7.6
Total capital ratio	13.7	10.6	10.1
Tier 1 leverage ratio	9.9	7.0	6.5
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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	11.6	5.2
First-lien mortgages, domestic	0.5	1.8
Junior liens and HELOCs, domestic	0.4	2.0
Commercial and industrial[2]	5.6	7.0
Commercial real estate, domestic	2.7	7.5
Credit cards	0.7	14.4
Other consumer[3]	0.7	3.3
Other loans[4]	0.9	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	309.5	328.3

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	13.9	3.5
Other revenue[3]	0.0	
less		
Provisions	12.9	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.7	
equals		
Net income before taxes	-0.1	0.0
Memo items		
Other comprehensive income[6]	-1.9	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.3	-2.1

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

7 Certain aspects of AOCI are subject to transition arrangements for inclusion in projected regulatory capital. The transition arrangements are 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	10.4	9.4	9.3
Tier 1 capital ratio	11.6	10.6	10.4
Total capital ratio	13.7	12.4	12.4
Tier 1 leverage ratio	9.9	8.9	8.9
Supplementary leverage ratio	n/a	7.4	7.4

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	6.5	2.9
First-lien mortgages, domestic	0.2	0.7
Junior liens and HELOCs, domestic	0.1	0.8
Commercial and industrial[2]	3.5	4.3
Commercial real estate, domestic	1.0	2.8
Credit cards	0.5	10.4
Other consumer[3]	0.6	2.6
Other loans[4]	0.5	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	309.5	335.9

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	12.5	3.1
Other revenue[3]	0.0	
less		
Provisions	6.4	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.5	
equals		
Net income before taxes	5.5	1.4
Memo items		
Other comprehensive income[6]	0.7	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-0.3	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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.27.A. RBC USA Holdco 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	15.6	11.6	11.2
Tier 1 capital ratio	15.6	11.6	11.2
Total capital ratio	16.8	12.9	12.6
Tier 1 leverage ratio	7.9	6.2	6.0
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.1	6.9
First-lien mortgages, domestic	0.2	2.5
Junior liens and HELOCs, domestic	0.1	5.7
Commercial and industrial[2]	1.2	12.8
Commercial real estate, domestic	0.8	8.2
Credit cards	0.0	14.7
Other consumer[3]	0.1	11.0
Other loans[4]	0.6	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	68.6	73.4

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.1	1.6
Other revenue[3]	0.0	
less		
Provisions	3.7	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.6	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-2.2	-1.6
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.27.B. RBC USA Holdco 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	15.6	13.8	13.4
Tier 1 capital ratio	15.6	13.8	13.4
Total capital ratio	16.8	14.6	14.4
Tier 1 leverage ratio	7.9	7.4	7.3
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.6	3.6
First-lien mortgages, domestic	0.1	0.7
Junior liens and HELOCs, domestic	0.0	1.9
Commercial and industrial[2]	0.7	7.5
Commercial real estate, domestic	0.3	3.1
Credit cards	0.0	10.6
Other consumer[3]	0.1	8.3
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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	68.6	76.0

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.1	1.6
Other revenue[3]	0.0	
less		
Provisions	1.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.4	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-0.2	-0.1
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.28.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	8.1	8.1
Tier 1 capital ratio	11.9	8.9	8.9
Total capital ratio	13.8	11.0	11.0
Tier 1 leverage ratio	10.0	7.3	7.3
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	5.3	6.5
First-lien mortgages, domestic	0.6	3.7
Junior liens and HELOCs, domestic	0.4	5.1
Commercial and industrial[2]	1.7	7.5
Commercial real estate, domestic	1.5	11.1
Credit cards	0.2	14.9
Other consumer[3]	0.5	7.9
Other loans[4]	0.4	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	100.9	105.5

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	4.2	3.3
Other revenue[3]	0.0	
less		
Provisions	6.0	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-1.8	-1.4
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.28.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.1	9.8	9.8
Tier 1 capital ratio	11.9	10.5	10.5
Total capital ratio	13.8	12.4	12.4
Tier 1 leverage ratio	10.0	8.6	8.6
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.0	3.6
First-lien mortgages, domestic	0.3	1.7
Junior liens and HELOCs, domestic	0.2	2.8
Commercial and industrial[2]	1.1	4.6
Commercial real estate, domestic	0.7	5.0
Credit cards	0.1	10.9
Other consumer[3]	0.4	6.3
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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	100.9	107.4

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	3.4	2.6
Other revenue[3]	0.0	
less		
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	
equals		
Net income before taxes	0.2	0.2
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.29.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.4	15.9	15.2
Tier 1 capital ratio	17.8	17.0	16.5
Total capital ratio	19.5	18.6	18.2
Tier 1 leverage ratio	14.2	13.2	13.0
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	99.8	104.3

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	8.0	6.0
Other revenue[3]	0.0	
less		
Provisions	7.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	0.8	0.6
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Projected loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	8.1	9.9
First-lien mortgages, domestic	0.3	3.4
Junior liens and HELOCs, domestic	0.3	4.6
Commercial and industrial[2]	0.9	5.8
Commercial real estate, domestic	1.2	7.4
Credit cards	0.1	13.9
Other consumer[3]	4.8	18.0
Other loans[4]	0.5	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.

Table C.29.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 2017:Q4 and projected 2018:Q1–2020:Q1
Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.4	17.9	16.7
Tier 1 capital ratio	17.8	19.2	18.2
Total capital ratio	19.5	20.8	19.9
Tier 1 leverage ratio	14.2	14.9	14.2
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	5.4	6.5
First-lien mortgages, domestic	0.1	1.4
Junior liens and HELOCs, domestic	0.2	2.7
Commercial and industrial[2]	0.6	3.7
Commercial real estate, domestic	0.5	2.7
Credit cards	0.1	10.8
Other consumer[3]	3.7	13.8
Other loans[4]	0.3	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 2017:Q4 and projected 2020:Q1
Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	99.8	106.7

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	7.3	5.4
Other revenue[3]	0.0	
less		
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	
equals		
Net income before taxes	3.6	2.6
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.30.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	8.4	5.3
Tier 1 capital ratio	15.0	11.9	9.0
Total capital ratio	16.0	12.7	10.0
Tier 1 leverage ratio	7.3	5.5	4.2
Supplementary leverage ratio	n/a	4.9	3.7

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.8	3.5
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.3	7.3
Commercial real estate, domestic	0.0	6.3
Credit cards	0.0	0.0
Other consumer[3]	0.0	0.6
Other loans[4]	0.6	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	102.7	104.2

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	5.9	2.4
Other revenue[3]	0.0	
less		
Provisions	1.0	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses[4]	3.4	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	1.0	0.4
Memo items		
Other comprehensive income[6]	-1.4	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-1.0	-2.4

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.30.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	10.9	10.6
Tier 1 capital ratio	15.0	14.4	14.3
Total capital ratio	16.0	15.1	15.0
Tier 1 leverage ratio	7.3	6.5	6.5
Supplementary leverage ratio	n/a	5.8	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.5	2.3
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.2	4.2
Commercial real estate, domestic	0.0	2.1
Credit cards	0.0	0.0
Other consumer[3]	0.0	0.6
Other loans[4]	0.4	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	102.7	105.0

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	4.3	1.7
Other revenue[3]	0.0	
less		
Provisions	0.7	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	1.3	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	2.2	0.9
Memo items		
Other comprehensive income[6]	0.3	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-1.0	-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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.31.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.7	6.6	6.6
Tier 1 capital ratio	11.2	7.7	7.7
Total capital ratio	13.1	9.8	9.8
Tier 1 leverage ratio	9.8	6.7	6.7
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	7.5	5.2
First-lien mortgages, domestic	1.0	3.6
Junior liens and HELOCs, domestic	0.7	6.7
Commercial and industrial[2]	2.3	5.5
Commercial real estate, domestic	1.4	7.3
Credit cards	0.2	13.8
Other consumer[3]	1.5	5.2
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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	175.9	184.2

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	6.1	2.8
Other revenue[3]	0.0	
less		
Provisions	8.5	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.3	
equals		
Net income before taxes	-2.8	-1.3
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.31.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 2017:Q4 and projected 2018:Q1–2020:Q1
Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.7	8.3	8.3
Tier 1 capital ratio	11.2	9.4	9.4
Total capital ratio	13.1	11.3	11.3
Tier 1 leverage ratio	9.8	8.1	8.1
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1
Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	175.9	188.5

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 loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.3	2.9
First-lien mortgages, domestic	0.4	1.6
Junior liens and HELOCs, domestic	0.4	3.4
Commercial and industrial[2]	1.4	3.2
Commercial real estate, domestic	0.6	2.9
Credit cards	0.2	9.8
Other consumer[3]	1.2	4.1
Other loans[4]	0.2	1.5

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.

Projected losses, revenue, and net income before taxes through 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	5.6	2.6
Other revenue[3]	0.0	
less		
Provisions	4.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.3	
equals		
Net income before taxes	0.8	0.4
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.32.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.0	13.3	11.2
Tier 1 capital ratio	16.0	13.3	11.2
Total capital ratio	17.0	14.5	12.4
Tier 1 leverage ratio	8.8	7.4	6.4
Supplementary leverage ratio	n/a	6.6	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	9.9	6.3
First-lien mortgages, domestic	0.6	2.6
Junior liens and HELOCs, domestic	0.5	5.4
Commercial and industrial[2]	2.5	7.3
Commercial real estate, domestic	2.2	7.9
Credit cards	2.6	19.2
Other consumer[3]	0.6	2.6
Other loans[4]	1.0	3.8

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	200.7	216.8

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	10.7	2.7
Other revenue[3]	0.0	
less		
Provisions	11.0	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-0.7	-0.2
Memo items		
Other comprehensive income[6]	-1.9	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	0.0	-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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.32.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.0	14.4	13.7
Tier 1 capital ratio	16.0	14.4	13.7
Total capital ratio	17.0	15.3	14.8
Tier 1 leverage ratio	8.8	7.9	7.7
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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	6.1	3.9
First-lien mortgages, domestic	0.3	1.3
Junior liens and HELOCs, domestic	0.3	3.3
Commercial and industrial[2]	1.5	4.4
Commercial real estate, domestic	0.9	3.2
Credit cards	2.0	14.9
Other consumer[3]	0.5	1.9
Other loans[4]	0.6	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	200.7	219.0

[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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	6.9	1.7
Other revenue[3]	0.0	
less		
Provisions	6.1	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	0.6	0.2
Memo items		
Other comprehensive income[6]	-0.6	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	0.0	-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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.33.A. UBS Americas Holding 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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	21.9	17.4	16.4
Tier 1 capital ratio	24.3	21.6	20.6
Total capital ratio	25.8	24.0	22.9
Tier 1 leverage ratio	8.9	7.8	7.5
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.8	3.0
First-lien mortgages, domestic	0.3	2.4
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.6	10.2
Commercial real estate, domestic	0.0	5.4
Credit cards	0.0	14.7
Other consumer[3]	0.1	0.6
Other loans[4]	0.7	4.1

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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	49.6	51.9

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	3.1	2.1
Other revenue[3]	0.0	
less		
Provisions	2.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.6	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	0.0	0.0
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.33.B. UBS Americas Holding 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 2017:Q4 and projected 2018:Q1–2020:Q1
Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	21.9	18.7	17.7
Tier 1 capital ratio	24.3	22.7	22.0
Total capital ratio	25.8	24.8	23.5
Tier 1 leverage ratio	8.9	8.2	8.0
Supplementary leverage ratio	n/a	n/a	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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1
Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	49.6	53.7

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	2.9	2.0
Other revenue[3]	0.0	
less		
Provisions	1.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.4	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	1.1	0.7
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Projected loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.1	1.8
First-lien mortgages, domestic	0.1	0.8
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.4	5.9
Commercial real estate, domestic	0.0	1.8
Credit cards	0.0	10.6
Other consumer[3]	0.1	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.

Table C.34.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.3	7.7	7.5
Tier 1 capital ratio	10.8	9.1	8.9
Total capital ratio	12.9	11.0	10.8
Tier 1 leverage ratio	8.9	7.5	7.4
Supplementary leverage ratio	n/a	6.0	5.9

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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	367.8	392.7

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	20.8	4.3
Other revenue[3]	0.0	
less		
Provisions	19.8	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	1.1	0.2
Memo items		
Other comprehensive income[6]	0.1	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-1.2	-1.4

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Projected loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	18.3	6.4
First-lien mortgages, domestic	1.4	2.2
Junior liens and HELOCs, domestic	0.9	5.3
Commercial and industrial[2]	5.5	7.2
Commercial real estate, domestic	4.2	11.0
Credit cards	3.5	15.6
Other consumer[3]	1.4	3.4
Other loans[4]	1.3	5.0

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.

Table C.34.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.3	9.4	9.3
Tier 1 capital ratio	10.8	10.8	10.7
Total capital ratio	12.9	12.3	12.3
Tier 1 leverage ratio	8.9	8.7	8.7
Supplementary leverage ratio	n/a	7.0	7.0

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	10.6	3.7
First-lien mortgages, domestic	0.4	0.7
Junior liens and HELOCs, domestic	0.4	2.6
Commercial and industrial[2]	3.6	4.6
Commercial real estate, domestic	1.7	4.4
Credit cards	2.7	11.7
Other consumer[3]	1.0	2.4
Other loans[4]	0.8	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	367.8	397.8

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	18.3	3.8
Other revenue[3]	0.0	
less		
Provisions	10.3	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	8.0	1.6
Memo items		
Other comprehensive income[6]	1.7	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-1.2	0.3

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.35.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	9.9	8.6
Tier 1 capital ratio	14.1	11.6	10.4
Total capital ratio	17.5	14.9	13.8
Tier 1 leverage ratio	9.4	7.6	6.9
Supplementary leverage ratio	n/a	6.5	5.9

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 are for the period 2018:Q1 to 2020:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

n/a Not applicable.

Risk-weighted assets, actual 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	1,260.7	1,329.5

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 loan losses, by type of loan, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	53.6	5.5
First-lien mortgages, domestic	6.3	2.3
Junior liens and HELOCs, domestic	2.6	4.8
Commercial and industrial[2]	13.0	6.8
Commercial real estate, domestic	12.9	9.4
Credit cards	6.0	15.5
Other consumer[3]	5.1	5.9
Other loans[4]	7.7	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.

Projected losses, revenue, and net income before taxes through 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	85.8	4.2
Other revenue[3]	0.0	
less		
Provisions	59.4	
Realized losses/gains on securities (AFS/HTM)	2.6	
Trading and counterparty losses[4]	12.2	
Other losses/gains[5]	1.6	
equals		
Net income before taxes	10.1	0.5
Memo items		
Other comprehensive income[6]	-11.9	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-1.4	-13.6

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 adjustment (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 firms, and other firms that opt into the advanced approaches treatment of accumulated other comprehensive income (AOCI).

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

Table C.35.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 2017:Q4 and projected 2018:Q1–2020:Q1

Percent

Regulatory ratio	Actual 2017:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	12.4	11.7
Tier 1 capital ratio	14.1	14.1	13.5
Total capital ratio	17.5	16.9	16.6
Tier 1 leverage ratio	9.4	9.2	8.9
Supplementary leverage ratio	n/a	7.9	7.6

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 are for the period 2018:Q1 to 2020: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, 2018:Q1–2020:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	28.5	2.9
First-lien mortgages, domestic	1.6	0.6
Junior liens and HELOCs, domestic	0.9	1.6
Commercial and industrial[2]	8.1	4.2
Commercial real estate, domestic	4.8	3.5
Credit cards	4.6	11.8
Other consumer[3]	4.0	4.7
Other loans[4]	4.5	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 2017:Q4 and projected 2020:Q1

Billions of dollars

Item	Actual 2017:Q4	Projected 2020:Q1
Risk-weighted assets[1]	1,260.7	1,359.9

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 2020:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue[2]	76.5	3.7
Other revenue[3]	0.0	
less		
Provisions	28.4	
Realized losses/gains on securities (AFS/HTM)	0.6	
Trading and counterparty losses[4]	3.7	
Other losses/gains[5]	1.1	
equals		
Net income before taxes	42.7	2.1
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2017:Q4*	*2020:Q1*
AOCI included in capital (billions of dollars)[7]	-1.4	-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 adjustment (CVA) losses and losses arising from the counterparty default scenario component applied to derivatives, securities lending, and repurchase agreement activities.

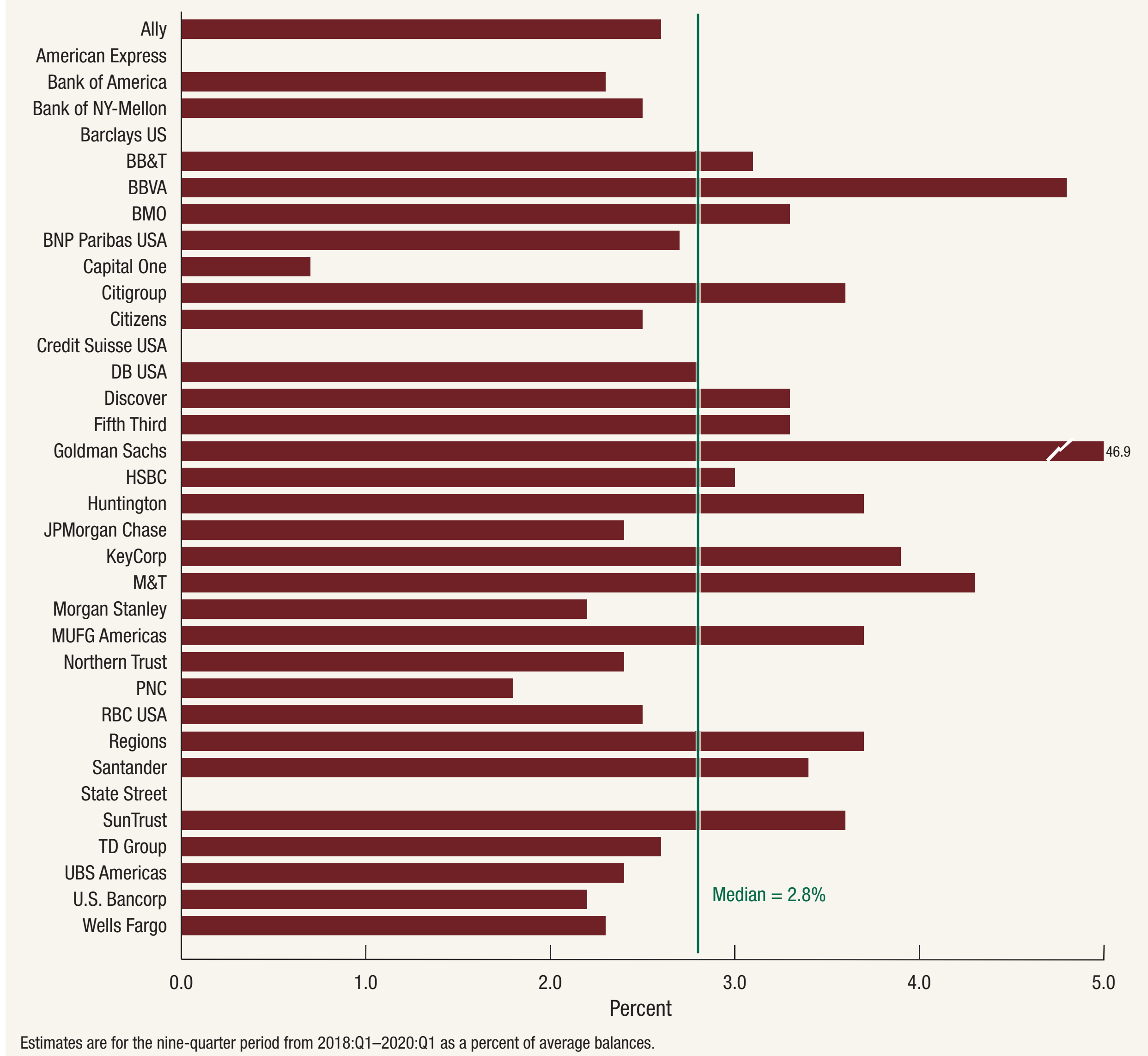
5 Other losses/gains include projected change in fair value of loans held for sale and loans held for investment measured under the fair-value option, and goodwill impairment losses.

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

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

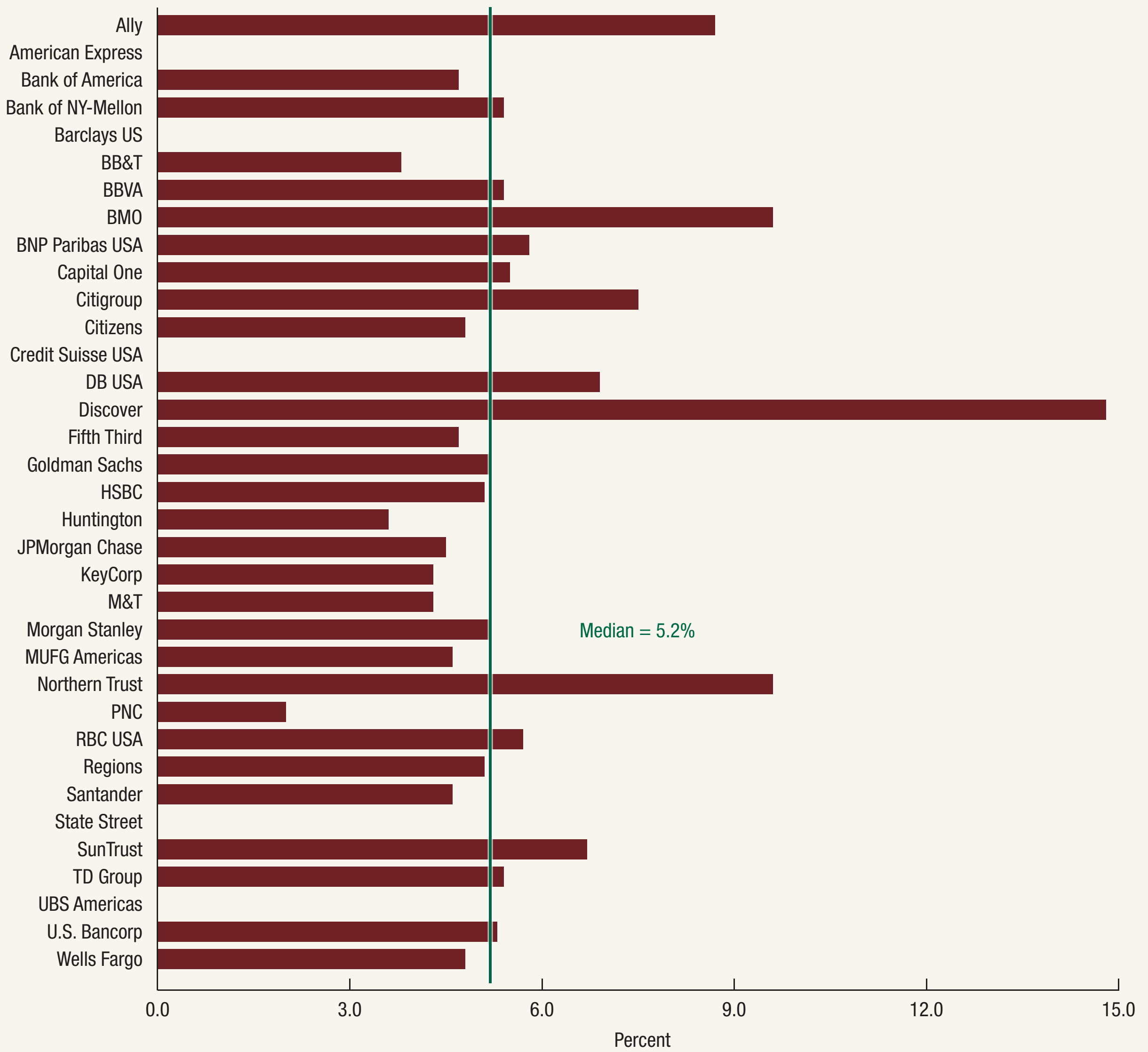
Appendix D: Additional Aggregate Results

Figure D.1. First-lien mortgages domestic loss rates in the severely adverse scenario



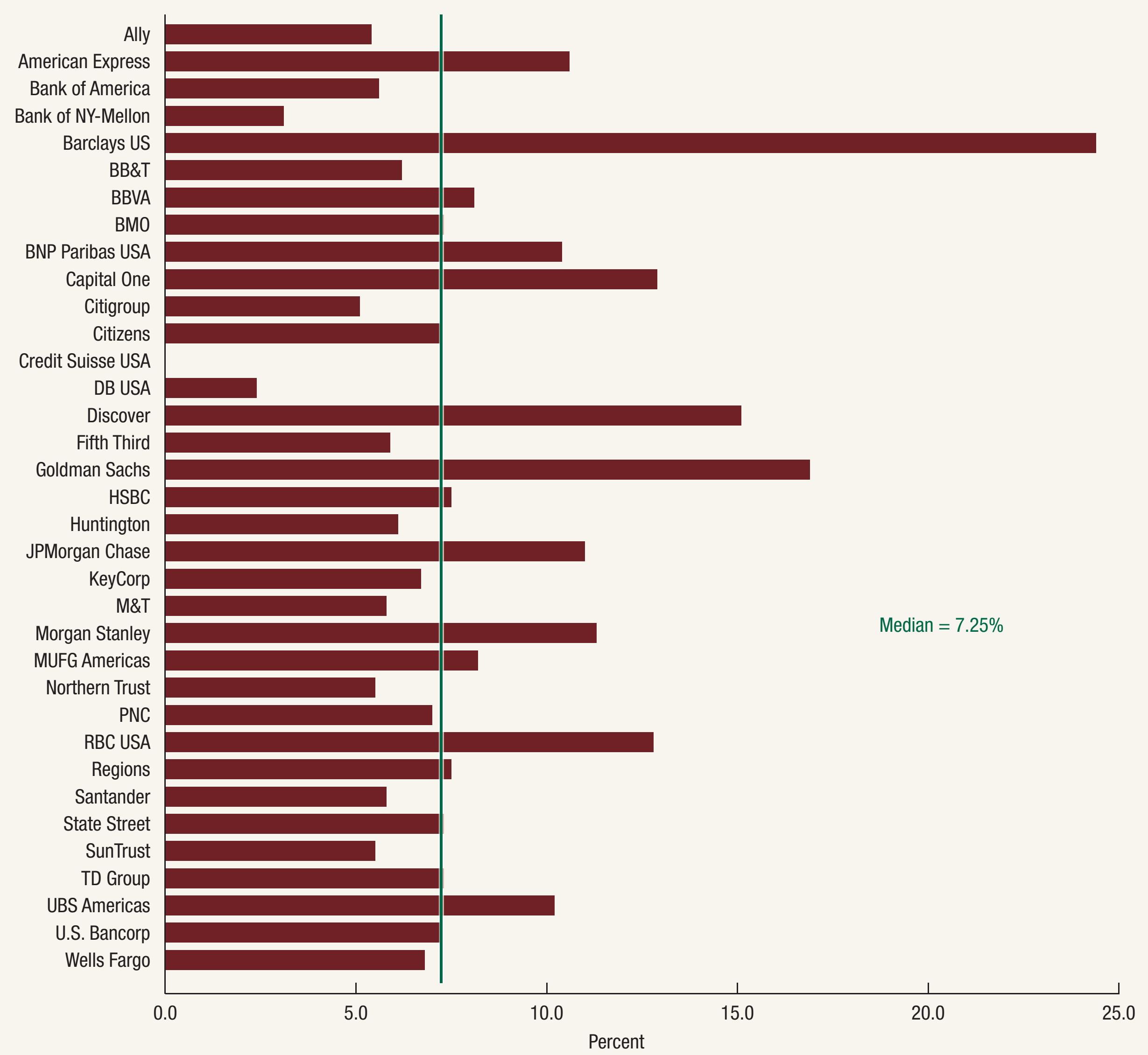
Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.2. Junior liens and HELOCs domestic loss rates in the severely adverse scenario



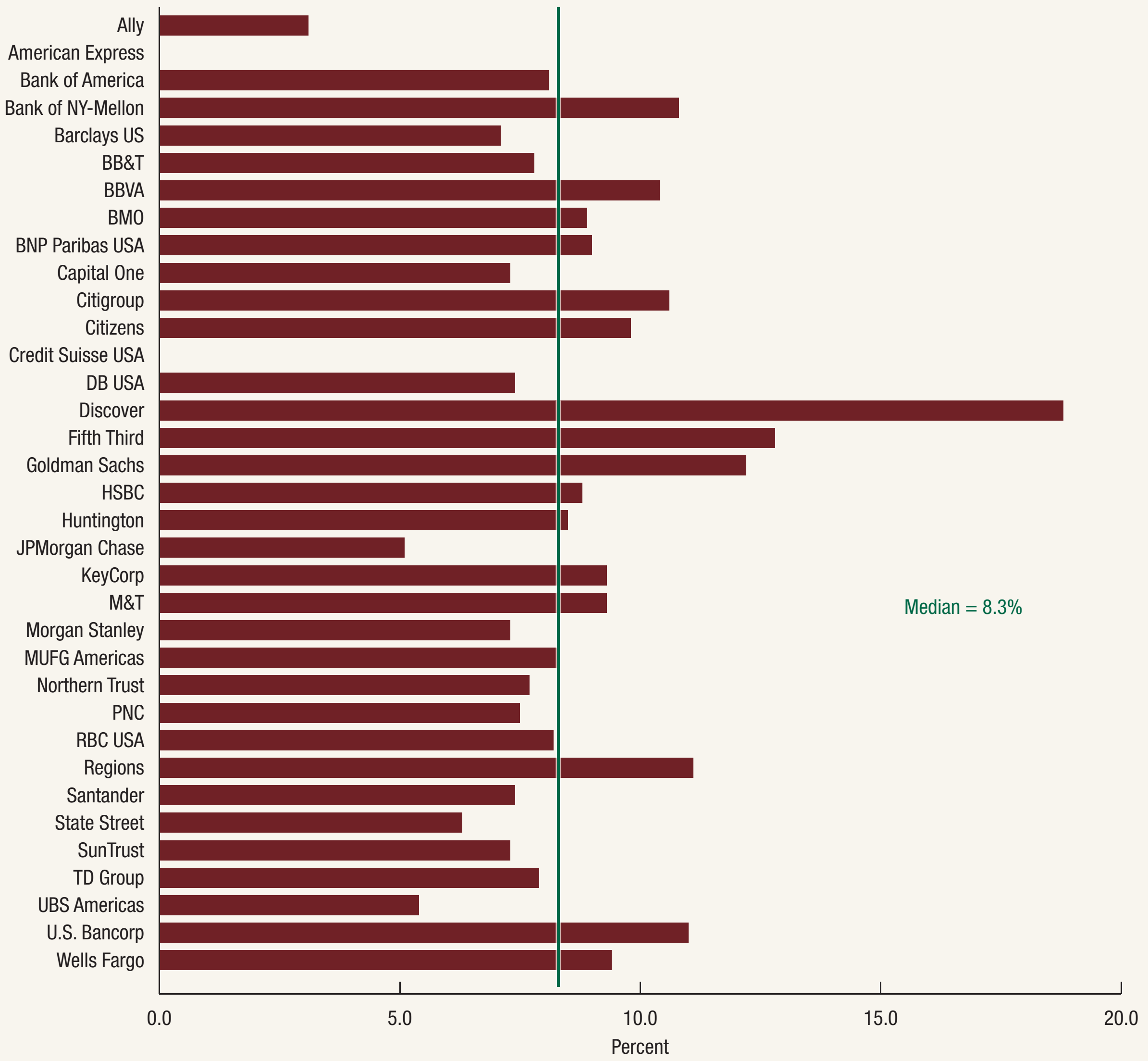
Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.3. Commercial and industrial loss rates in the severely adverse scenario



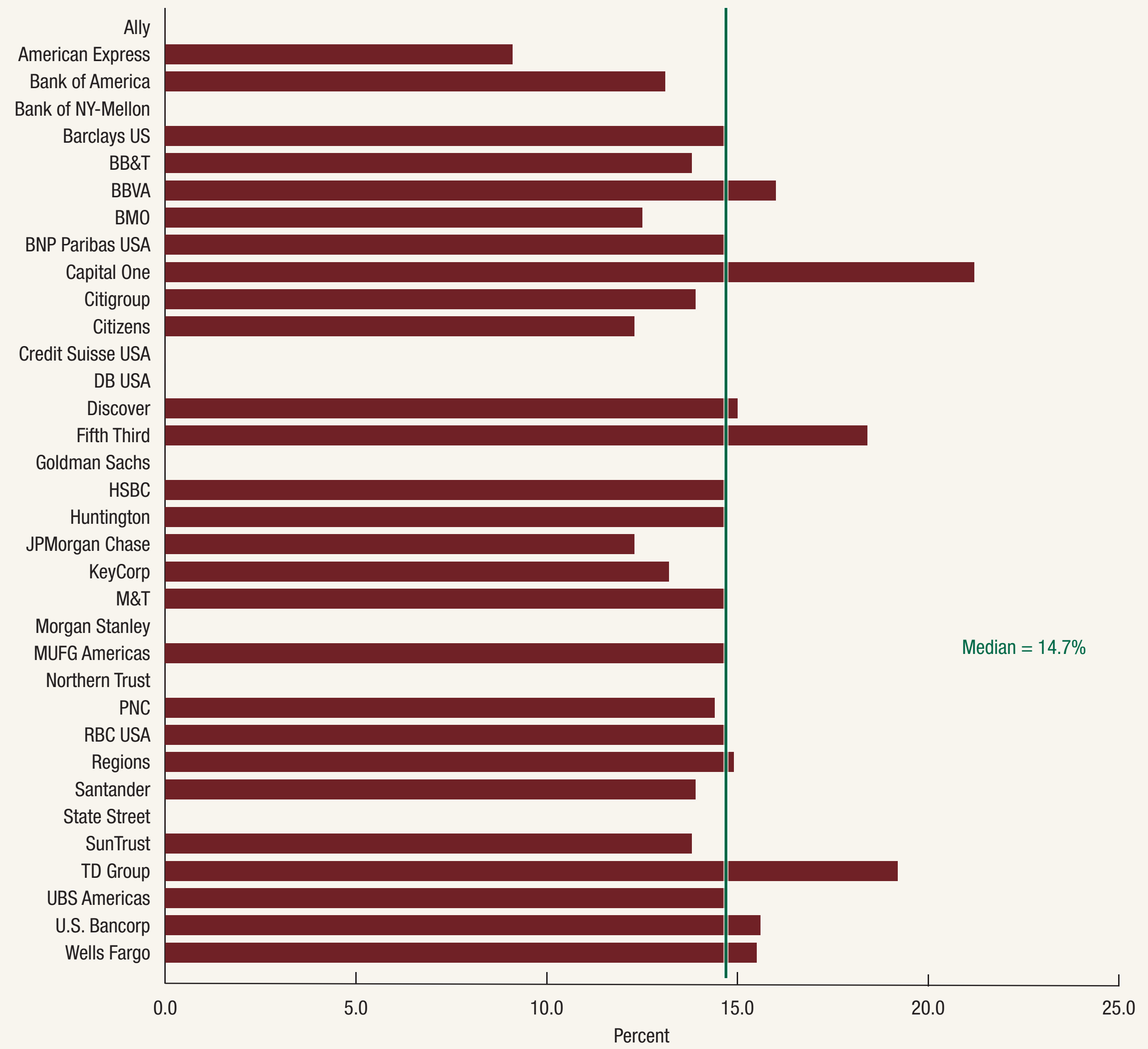
Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances. Losses are calculated based on the exposure at default, which includes both outstanding balances and any additional drawdown of the credit line that occurs prior to default, while loss rates are calculated as a percent of outstanding balances.

Figure D.4. Commercial real estate domestic loss rates in the severely adverse scenario



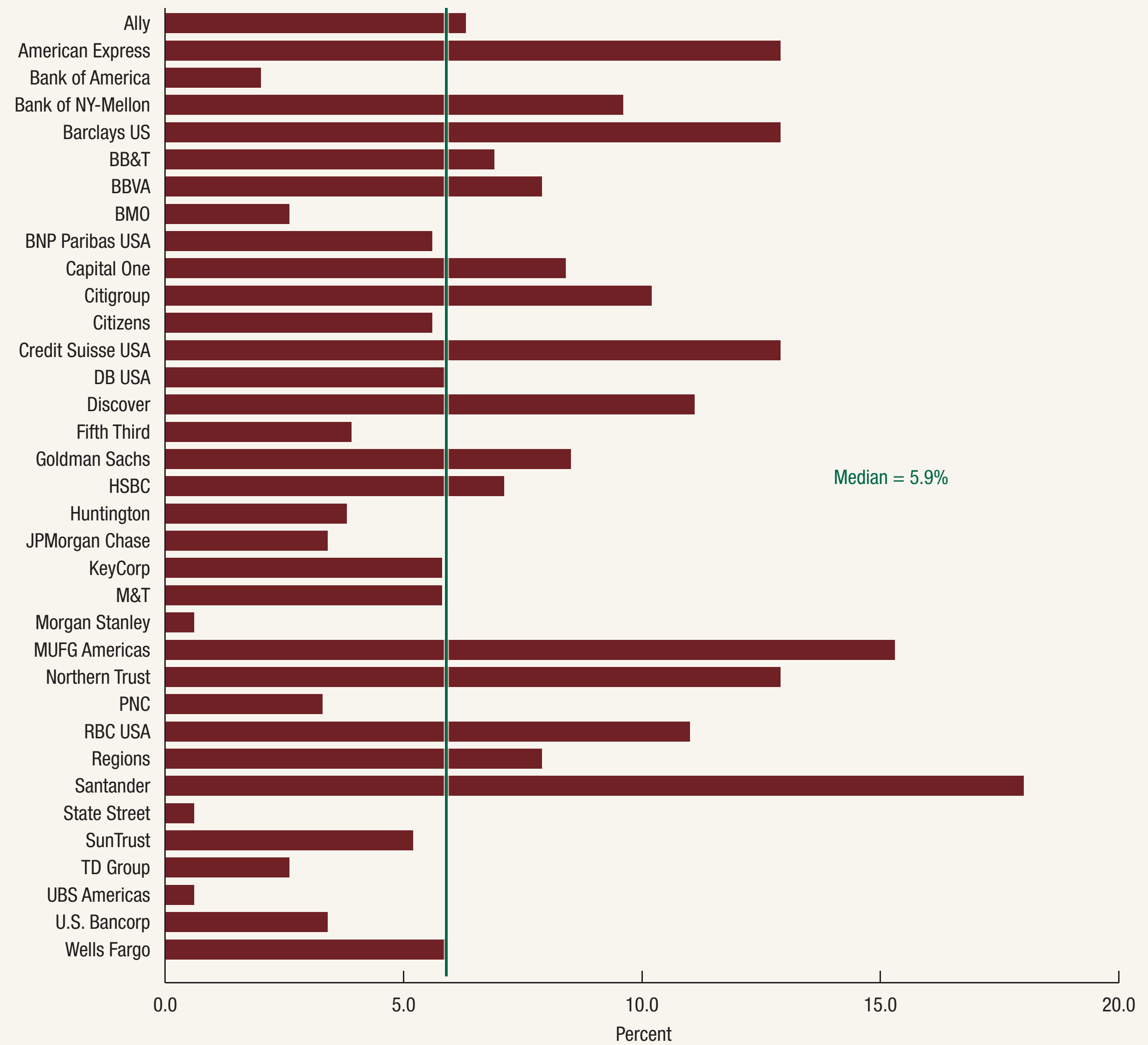
Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.5. Credit card loss rates in the severely adverse scenario



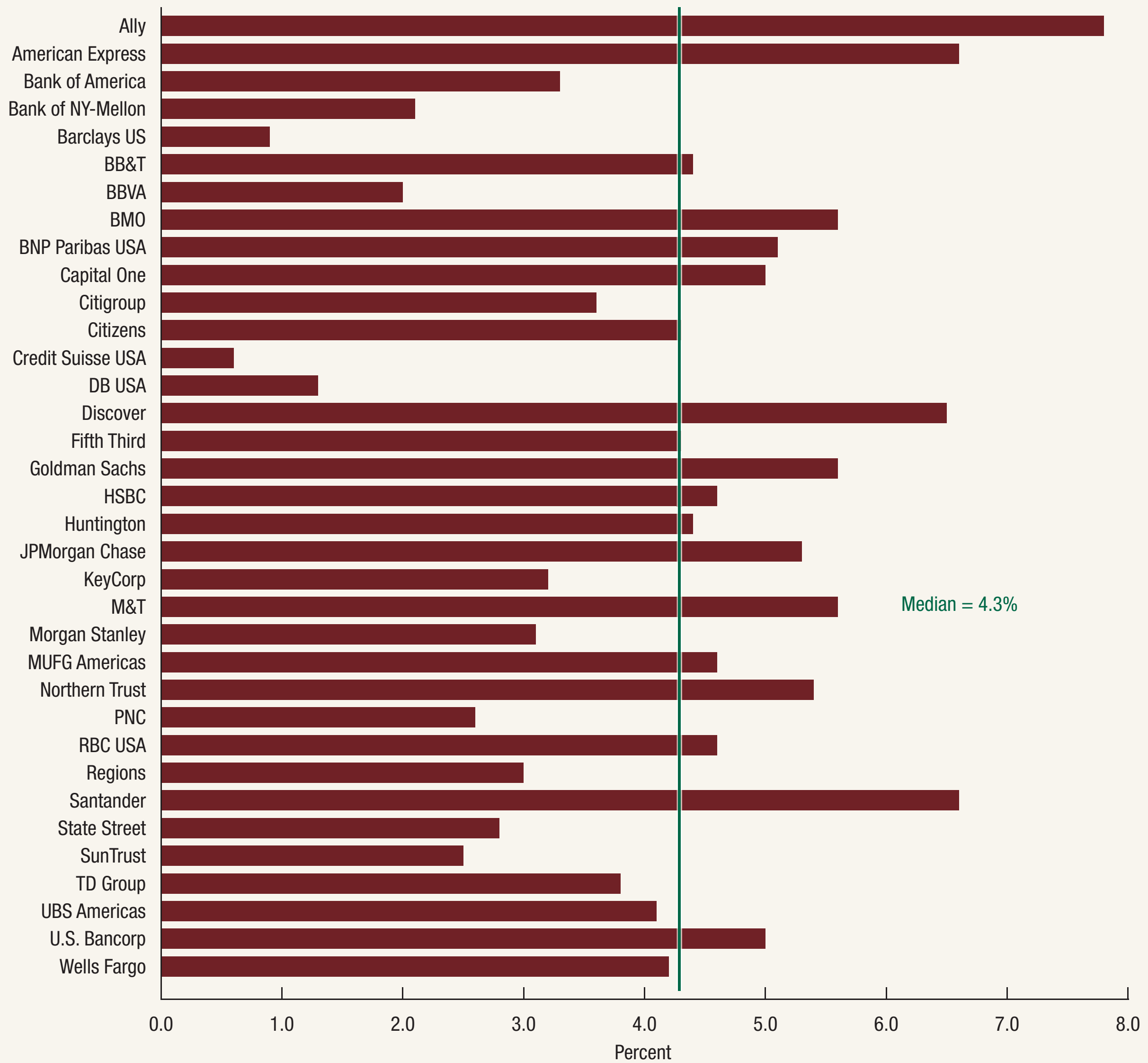
Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.6. Other consumer loss rates in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.7. Other loans loss rates in the severely adverse scenario

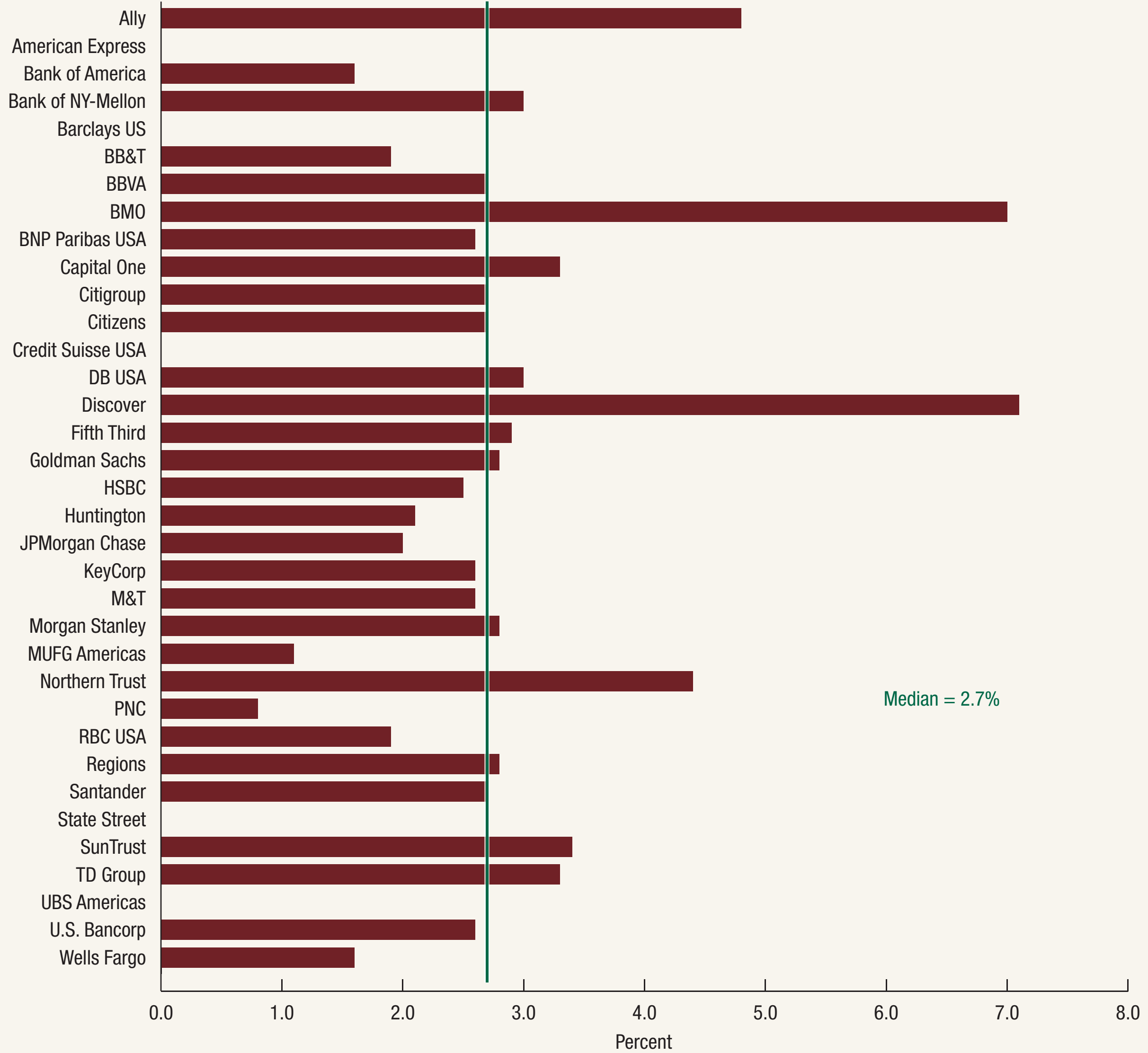


Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.8. First-lien mortgages domestic loss rates in the adverse scenario

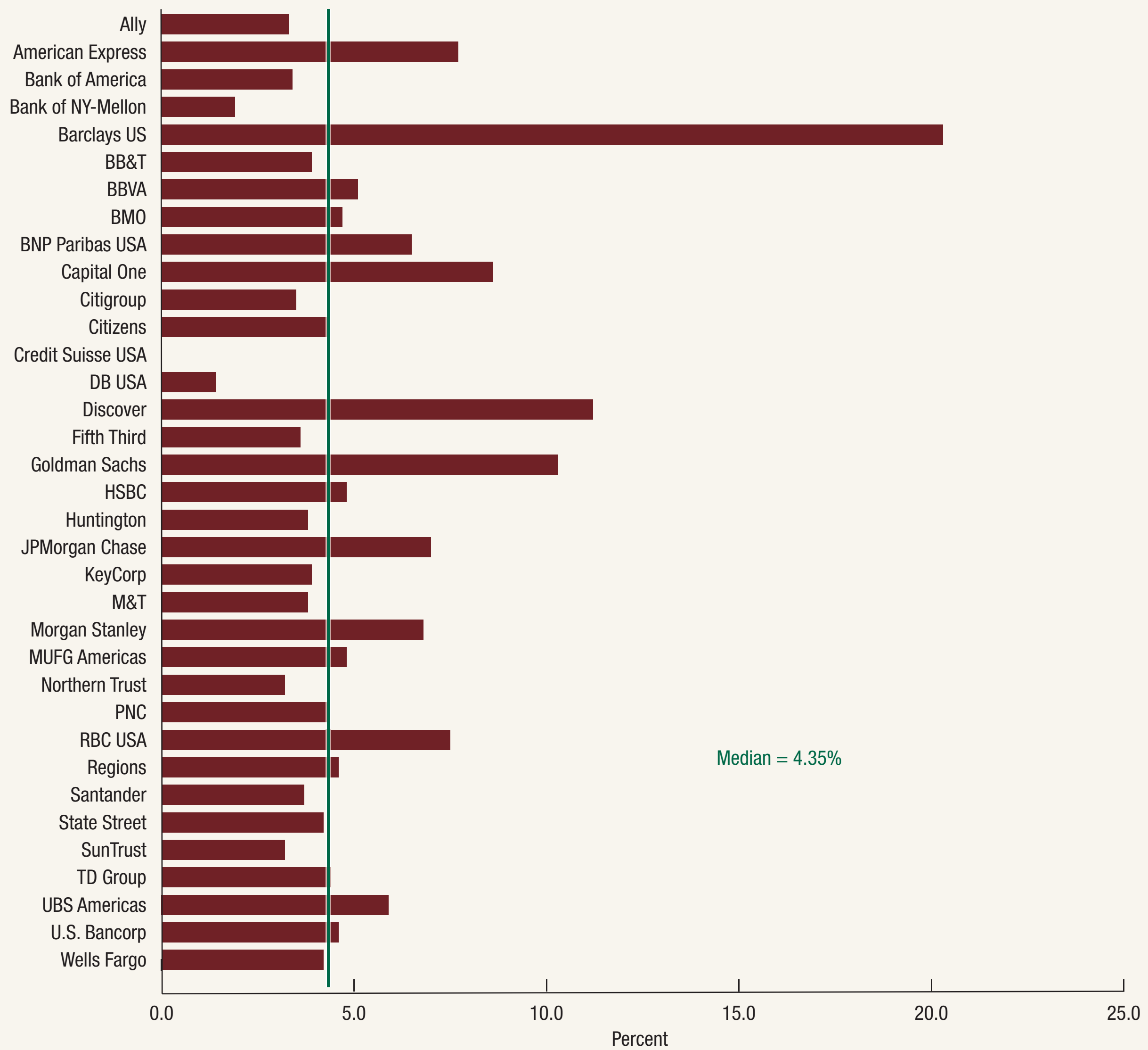
Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.9. Junior liens and HELOCs domestic loss rates in the adverse scenario



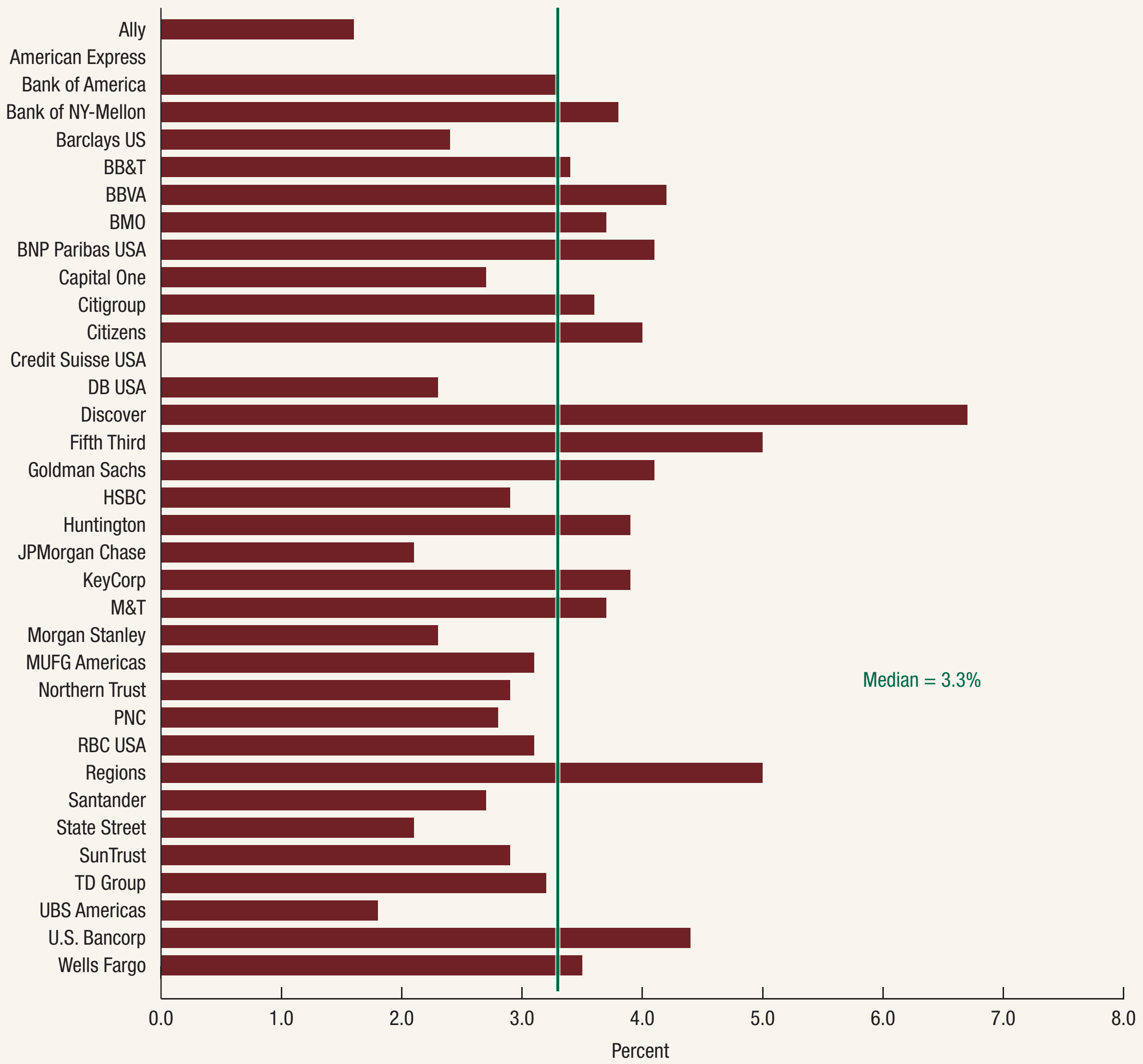
Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.10. Commercial and industrial loss rates in the adverse scenario



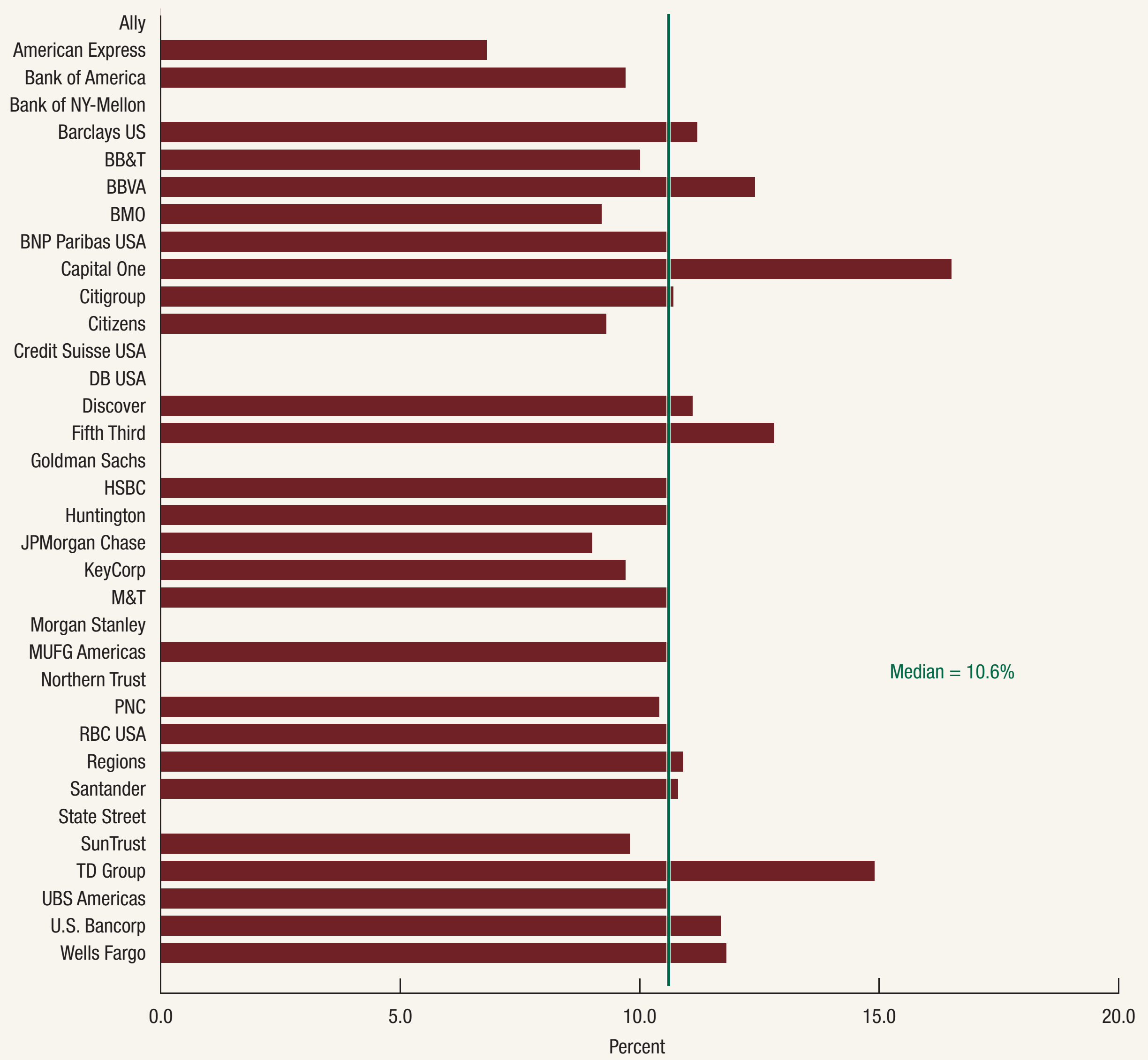
Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances. Losses are calculated based on the exposure at default, which includes both outstanding balances and any additional drawdown of the credit line that occurs prior to default, while loss rates are calculated as a percent of outstanding balances.

Figure D.11. Commercial real estate domestic loss rates in the adverse scenario



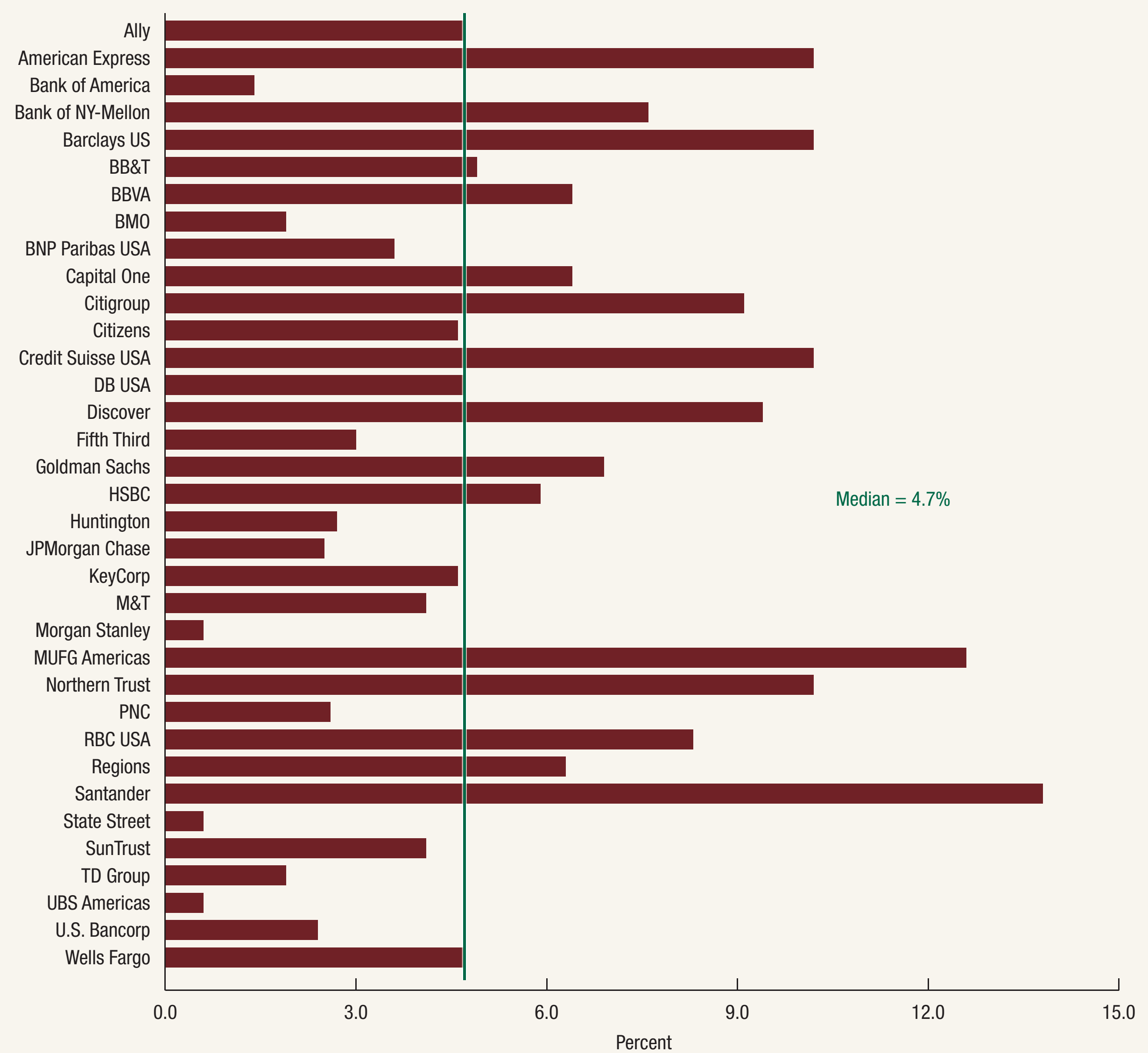
Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.12. Credit card loss rates in the adverse scenario



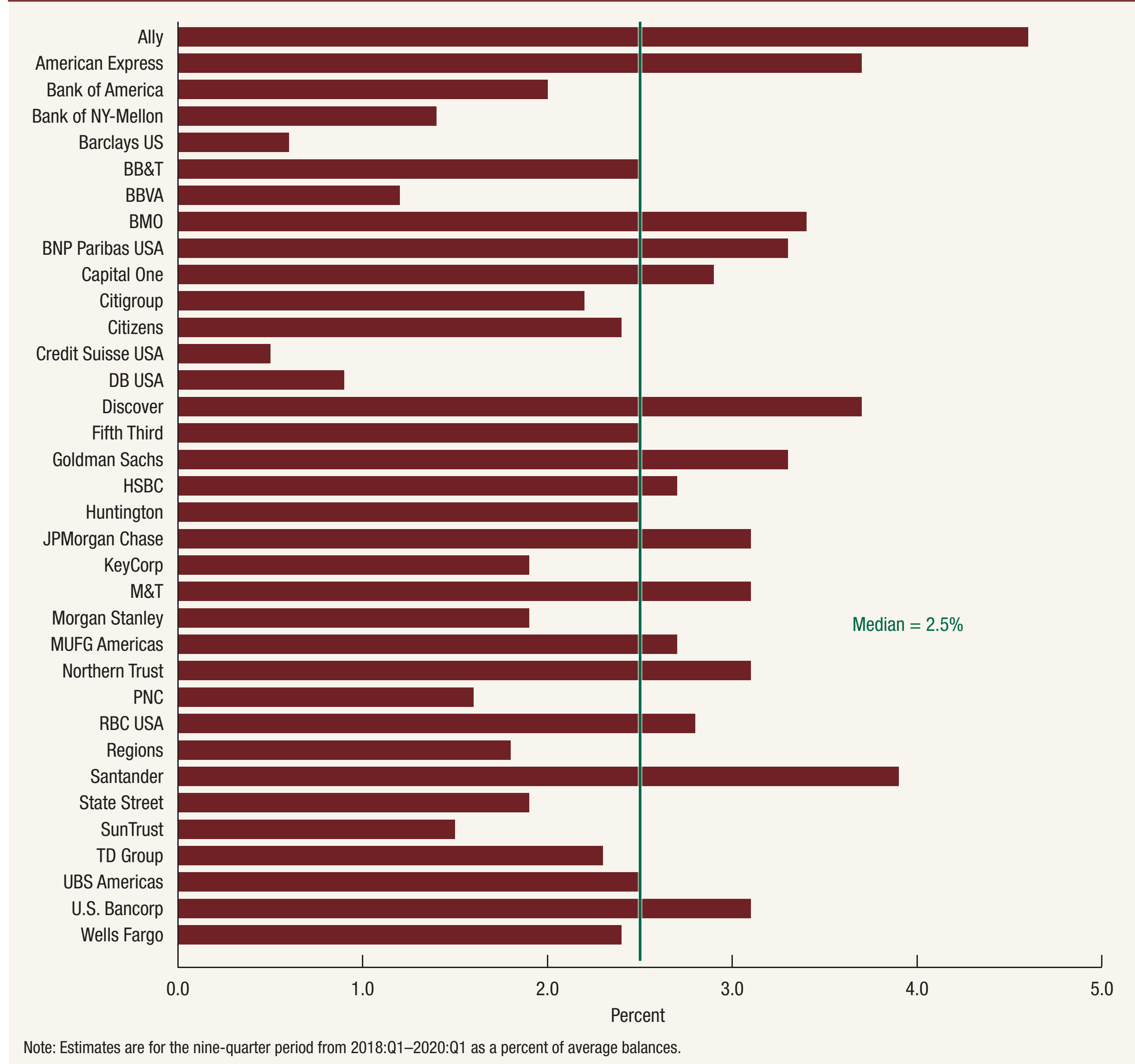
Note: Estimates are for the nine-quarter period from 2018:Q1–2020:Q1 as a percent of average balances.

Figure D.13. Other consumer loss rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2018:Q1–2020: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 2018:Q1–2020:Q1 as a percent of average balances.

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