Dodd-Frank Act Stress Test 2019: Supervisory Stress Test Results

June 2019

Board of Governors of the Federal Reserve System

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Preface

The Federal Reserve, through the supervision and regulation of banking organizations, promotes a safe, sound, and efficient banking and financial system. This oversight supports the U.S. economy by ensuring that banking organizations remain healthy so that they can be a source of strength.

Stress testing is one component of that oversight and allows the Federal Reserve to effectively assess whether firms have sufficient capital to continue operating and lending to households and businesses, even during times of economic and financial market stress.

In particular, the Federal Reserve's stress testing program examines large bank holding companies (BHCs) and the intermediate holding companies (IHCs) of foreign banks (together, firms). The program consists of two primary components:

- The Dodd-Frank Act stress test (DFAST) is a forward-looking quantitative evaluation of bank capital that demonstrates how a hypothetical set of stressful economic conditions developed by the Federal Reserve would affect the capital ratios of large firms.[1]
- The Comprehensive Capital Analysis and Review (CCAR) includes a quantitative assessment for all firms subject to the supervisory stress test and a qualitative assessment of certain firms' capital planning practices.[2] The CCAR quantitative assessment uses the same supervisory stress test results as DFAST and incorporates firms' planned capital actions, such as dividend payments and common stock repurchases.

This document includes Federal Reserve estimates under DFAST of revenues, expenses, losses, pre-tax net income, and capital ratios under the hypothetical scenarios designed by the Board. The post-stress capital ratios are produced using a standardized set of capital action assumptions specified in the Dodd-Frank Act stress test rules. The disclosures are intended to give the public a greater understanding of how large firms would perform during hypothetical recessions.

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

2 For the largest and most complex firms, CCAR includes a qualitative evaluation of a firm's ability to determine its capital needs on a forward-looking basis.

Contents

Executive Summary

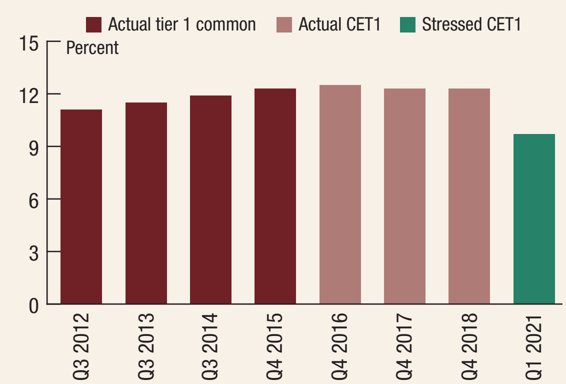
The results of this year's stress test cycle (DFAST 2019) suggest that, in the aggregate, the 18 firms subject to the supervisory stress test would experience substantial losses under both the adverse and severely adverse scenarios but could continue lending to businesses and households, due to the substantial build of capital since the financial crisis.

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 2018 to its minimum of 9.2 percent, before rising to 9.7 percent at the end of nine quarters (see figure 1). The DFAST cycle begins in the first quarter of 2019 and ends in the first quarter of 2021.

For DFAST 2019, key components of stress test projections, such as losses and revenue, are broadly similar to those of prior years' exercises.

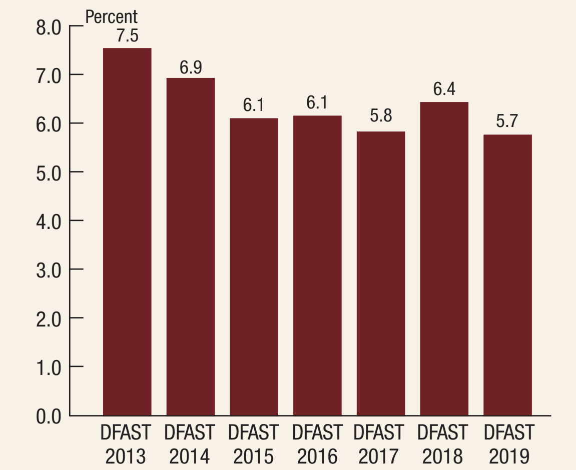
Aggregate losses at the 18 firms under the severely adverse scenario are projected to be $410 billion. These losses represent a slight decline from $464 billion for the same 18 firms in DFAST 2018. Aggregate loan losses as a percent of average loan balances in the severely adverse scenario have declined since early stress test exercises, due in large part to improvements in firms' portfolio quality (see figure 2). The loss rates in DFAST 2019 are well in line with loss rates in the 2015–17 stress test exercises.[3]

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



Note: Historical and stressed capital ratios are calculated for all firms subject to the supervisory stress test in each exercise.

Figure 2. Loan loss rates, severely adverse scenario



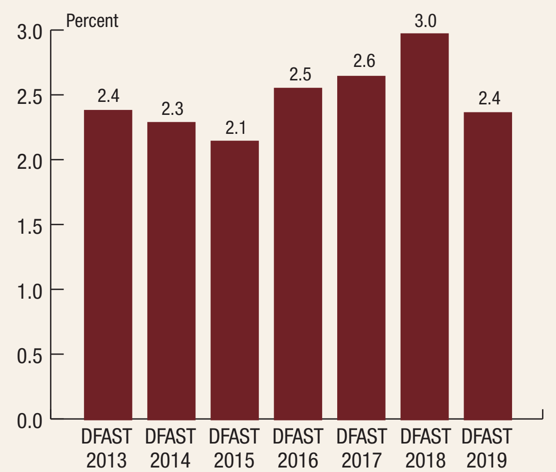
Note: Loan loss rates as a percent of average total loan balances is calculated for all firms subject to the supervisory stress test in each exercise.

Aggregate projected pre-provision net revenue (PPNR) in DFAST 2019 for the 18 firms under the severely adverse scenario is projected to be $327 billion, compared to $389 billion for the same set of firms in DFAST 2018. PPNR as a percent of average total assets in DFAST 2019 is broadly similar to projected PPNR in prior years' exercises (see figure 3).

Provisions for loan losses and PPNR are the main drivers of pre-tax net income. The projected decline in pre-tax net income is -0.8 percent average total assets, equivalent

[3] Loss rates were higher in DFAST 2018 due to features of the 2018 severely adverse macroeconomic scenario.

Figure 3. PPNR as a percent of average total assets, severely adverse scenario

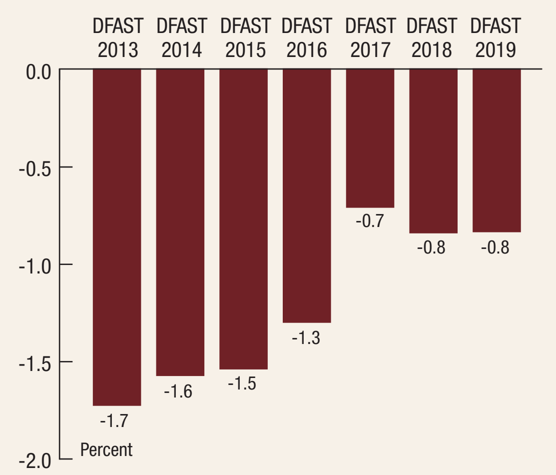


Note: PPNR as a percent of average total assets is calculated for all firms subject to the supervisory stress test in each exercise.

to the decline in pre-tax net income in the DFAST 2018 exercise (see figure 4).

In DFAST 2019, the effect of the decline in pre-tax net income on firms' post-stress capital ratios was partially offset by projected unrealized gains on available-for-sale (AFS) securities, resulting from a more muted widening of credit spreads and a larger downward shift in the yield curve in the 2019 severely adverse scenario. These securities may have projected gains, as in DFAST 2019, or projected losses as in DFAST 2018, depending on the nature of the stress scenario. Only the largest and most complex firms are required to recognize those unrealized gains and losses in regulatory capital.[4]

Figure 4. 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.

In the adverse scenario, aggregate projected losses, PPNR, and net income before taxes are $255 billion, $387 billion, and $128 billion, respectively. The aggregate CET1 capital ratio under the adverse scenario would fall to a minimum of 11.4 percent.

Further details of the results are provided in the Supervisory Stress Test Results section of this report.

Differences between the DFAST 2019 Results Disclosure and Previous Results Disclosures

Fewer Firms This Year

The Board previously announced that certain less-complex BHCs and IHCs would not be subject to the stress test in 2019. As a result, these firms were not subject to the supervisory stress test during the 2019 stress test cycle. Effectively moving these institutions to an extended stress test cycle for 2019 recognizes the smaller risk they present, while still allowing the Board to assess the resiliency of these firms.[5]

While 35 firms remain subject to stress testing requirements, 18 firms have been tested this year

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4 In contrast, these projected unrealized gains would not have been reflected in the capital ratios of smaller and less complex firms, as they are not required to include unrealized gains and losses on AFS securities in regulatory capital.

5 See Board of Governors of the Federal Reserve System, "Federal Reserve Board releases scenarios for 2019 Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act stress test exercises," press release, February 5, 2019, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20190205b.htm.

under DFAST.[6] As such, only results from the 18 firms are being published in this document.[7]

Because fewer firms participated in the 2019 stress test cycle, the aggregate results this year are not fully comparable to results from prior years.

No Further Changes from the Tax Law

While the Tax Cuts and Jobs Act[8] is in effect for DFAST 2019, the one-time effects of transitioning to the new tax law that had material effects on the results of DFAST 2018 are not a factor in this year's stress test cycle.

Specifically, in the 2018 stress test cycle, the Federal Reserve modified its calculation of projected capital to account for the passage of the Tax Cuts and Jobs Act.[9] The effective tax rate was reduced from 35 percent to 21 percent, and the calculation of capital was changed to reflect the elimination of net operating loss (NOL) carrybacks and the 80 percent limit on carryforward utilization.

Transparency Enhancements

This document contains projections of net interest income, noninterest income, and noninterest expense for firms subject to DFAST 2019. These subcomponent estimates are more granular than the PPNR estimates published in prior DFAST disclosures.

In March 2019, the Board published for the first time a disclosure containing additional information about its supervisory models. This disclosure was designed to improve the public's understanding and interpretation of stress test results and enhance the credibility of the test.[10] It is one part of recent efforts to increase supervisory stress test transparency while still maintaining the effectiveness of the stress test. Because the Board has published these descriptions in advance of the stress test cycle and intends to publish a disclosure of supervisory model methodology in advance of future stress test cycles, the description of supervisory models (formerly appendix B) has been removed from the supervisory stress test results disclosure.

Overview

This report provides

- details of the adverse and severely adverse supervisory scenarios used in DFAST 2019;
- an overview of the analytical framework and methods used to generate the Federal Reserve's projected results, highlighting notable changes from last year's program;
- information about recent efforts to increase transparency;
- additional details about the Federal Reserve's assumptions in the supervisory stress test; and
- the results of the supervisory stress test under adverse and severely adverse scenarios for the firms that participated in DFAST 2019, presented both for individual institutions and in the aggregate.

The adverse and severely adverse supervisory scenarios used in DFAST 2019 feature U.S. and global recessions. In particular, the severely adverse scenario is characterized by a severe global recession accompanied by a period of heightened stress in commercial real estate (CRE) markets and corporate debt markets. The adverse scenario is characterized by weakening economic activity across all of the economies included in the scenario, accompanied by a moderate correction in asset prices and a rise in volatility.

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6 The 18 firms required to participate in DFAST 2019 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), Inc.; DB USA Corporation; The Goldman Sachs Group, Inc.; HSBC North America Holdings Inc.; JPMorgan Chase & Co.; Morgan Stanley; Northern Trust Corporation; The PNC Financial Services Group, Inc.; State Street Corporation; TD Group US Holdings LLC; UBS Americas Holdings LLC; U.S. Bancorp; and Wells Fargo & Company. In addition to DB USA Corporation, DWS USA Corporation, a second U.S. intermediate holding company subsidiary of Deutsche Bank AG, was subject to DFAST 2019.

7 The 17 firms not subject to DFAST 2019 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; RBC US Group Holdings LLC; Regions Financial Corporation; Santander Holdings USA, Inc.; and SunTrust Banks, Inc.

8 Pub. L. No. 115-97 (2017).

9 See Board of Governors of the Federal Reserve System, *Dodd-Frank Act Stress Test 2018: Supervisory Stress Test Methodology and Results*, (Washington, DC: Board of Governors, June 2018), box 2, https://www.federalreserve.gov/publications/files/2018-dfast-methodology-results-20180621.pdf.

10 See Board of Governors of the Federal Reserve System, *Dodd-Frank Act Stress Test 2019: Supervisory Stress Test Methodology*, (Washington, DC: Board of Governors, March 2019), https://www.federalreserve.gov/publications/files/2019-march-supervisory-stress-test-methodology.pdf.

In conducting the supervisory stress test, the Federal Reserve projects capital levels and regulatory capital ratios under stress over nine quarters, generally using a set of pre-defined capital action assumptions. The projections are based on macroeconomic scenarios that are developed annually by the Federal Reserve.[11]

The Federal Reserve calculates 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.

As in past years, the Federal Reserve enhanced some of the supervisory models in advance of DFAST 2019. The supervisory stress test models may be enhanced 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. These changes are highlighted in box 1.

The publication of supervisory model methodology and other ongoing efforts to increase the transparency of the supervisory stress test are described in box 2.

[11] The Board has issued and recently amended a policy statement regarding its process for designing the scenarios. See Policy Statement on the Scenario Design Framework for Stress Testing, 84 Fed. Reg. 6651 (February 28, 2019), https://www.federalregister.gov/documents/2019/02/28/2019-03504/amendments-to-policy-statement-on-the-scenario-design-framework-for-stress-testing, 12 CFR part 252, appendix A.

Supervisory Scenarios

On February 5, 2019, the Federal Reserve released the three supervisory scenarios: baseline, adverse, and severely adverse.[12] 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. 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.

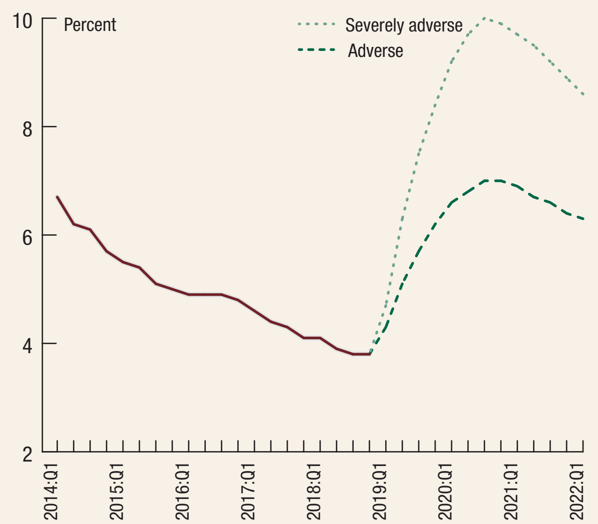
Similar to DFAST 2018, the Federal Reserve applied a global market shock to the trading portfolio of 11 firms with large trading and private equity exposures and a counterparty default scenario component to 13 firms with substantial trading, processing, or custodial operations (see Global Market Shock and Counterparty Default Components).

Severely Adverse Scenario

Figures 5 through 10 illustrate the hypothetical trajectories for some of the key variables describing U.S. economic activity and asset prices under the severely adverse scenario.

[12] See Board of Governors of the Federal Reserve System (2019), *2019 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 2019), https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20190213a1.pdf for additional information and for the details of the supervisory scenarios.

Figure 5. Unemployment rate in the severely adverse and adverse scenarios, 2014:Q1–2022:Q1

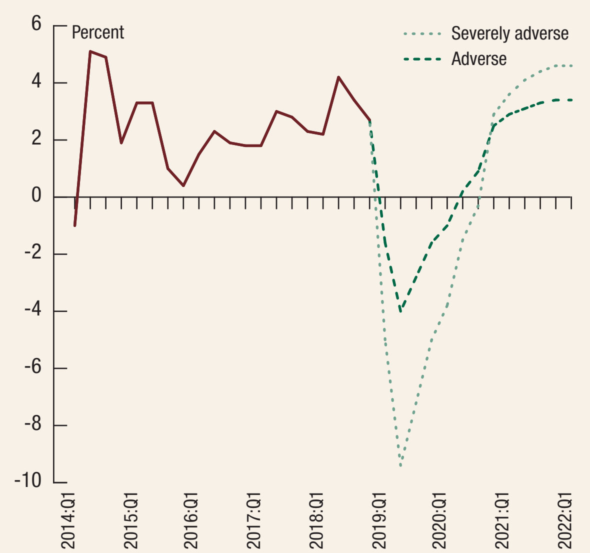


Source: Bureau of Labor Statistics and Federal Reserve assumptions in the supervisory scenarios.

The severely adverse scenario is characterized by a severe global recession accompanied by a period of heightened stress in CRE markets and corporate debt markets. This is a hypothetical scenario designed to assess the strength of banking organizations and their resilience to unfavorable economic conditions and does not represent a forecast of the Federal Reserve.

The U.S. unemployment rate climbs to a peak of 10 percent in the third quarter of 2020. This change in the unemployment rate is consistent with the Board's Policy Statement on the Scenario Design Framework for Stress Testing. In line with the increase in the unemployment rate, real GDP falls about 8 percent from its pre-recession peak, reaching a trough in the second quarter of 2019. The decline in activity is accompanied by a lower headline consumer price index (CPI) inflation, which falls to about 1¼ percent at an annual rate in the first quar-

Figure 6. Real GDP growth rate in the severely adverse and adverse scenarios, 2014:Q1–2022:Q1

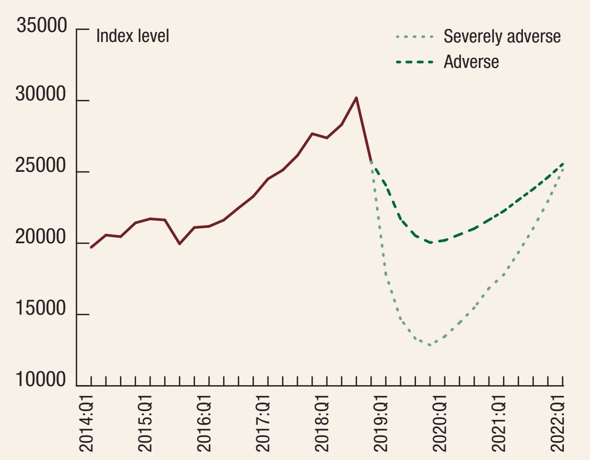


Source: Bureau of Economic Analysis and Federal Reserve assumptions in the supervisory scenarios.

ter of 2019 and then rises gradually to about 2 percent at an annual rate by the second half of 2020.

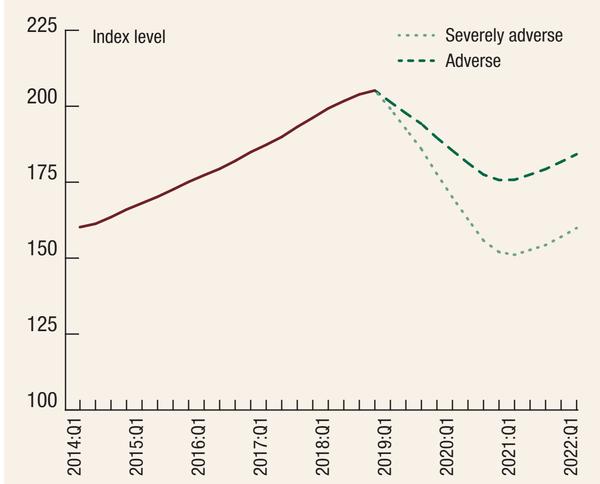
As a result of the severe decline in real activity, the interest rate for 3-month Treasury bills falls 2¼ percentage points and remains near zero through the end of the scenario. The 10-year Treasury yield falls by a somewhat smaller amount, resulting in a mildly steeper yield curve. The 10-year Treasury yield

Figure 7. Dow Jones Total Stock Market Index in the severely adverse and adverse scenarios, 2014:Q1–2022:Q1



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

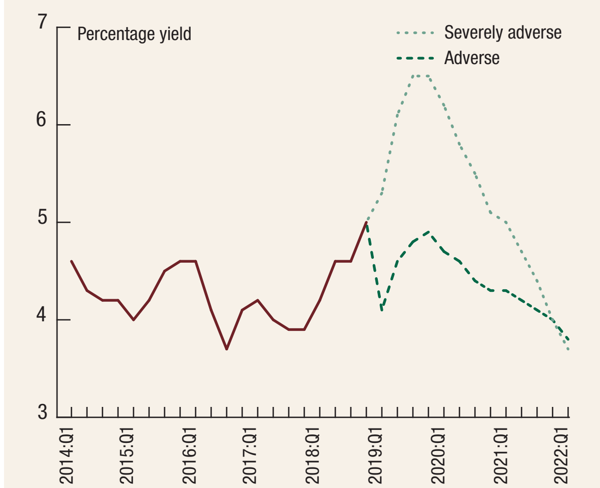
Figure 8. National House Price Index in the severely adverse and adverse scenarios, 2014:Q1–2022:Q1



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

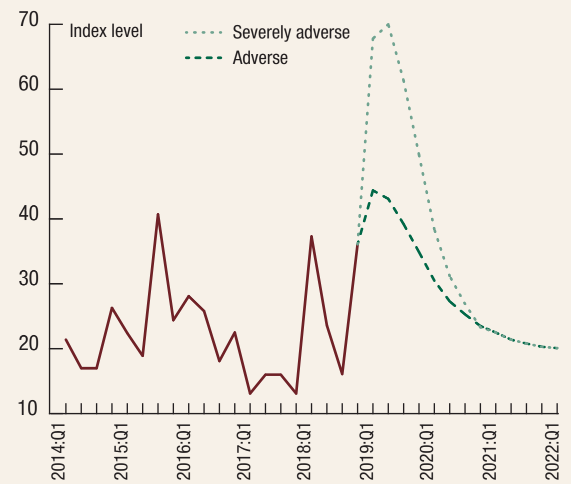
reaches a trough of about ¾ percent in the first quarter of 2019 and rises gradually thereafter to 1½ percent by the first quarter of 2021 and 1¾ percent by the first quarter of 2022. Financial conditions in corporate and real estate lending markets are stressed severely. The spread between yields on investment-grade corporate bonds and yields on long-term Treasury securities widens to 5½ percent by the third quarter of 2019, an increase of 3½ percentage points relative to the fourth quarter of 2018.

Figure 9. U.S. BBB corporate yield in the severely adverse and adverse scenarios, 2014:Q1–2022: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 10. U.S. Market Volatility Index (VIX) in the severely adverse and adverse scenarios, 2014:Q1–2022:Q1



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

The spread between mortgage rates and 10-year Treasury yields widens to 3½ percentage points over the same time period.

Asset prices drop sharply in this scenario. Equity prices fall 50 percent through the end of 2019, accompanied by a rise in the U.S. Market Volatility Index (VIX), which reaches a peak of 70 percent. House prices and CRE prices also experience large declines of about 25 percent and 35 percent, respectively.

The international component of this scenario features severe recessions in the euro area, United Kingdom, and Japan and a shallow 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. The U.S. dollar appreciates against the euro, the pound sterling, and the currencies of developing Asia but depreciates modestly against the yen because of flight-to-safety capital flows.

This year's severely adverse scenario features a greater increase in the unemployment rate in the United States compared to last year's scenario. This increase in severity in that variable reflects the Board's Policy Statement on the Scenario Design Framework for Stress Testing, which calls for a more pronounced economic downturn when current conditions are especially strong. Given a lower unemployment rate at the beginning of this year's scenario compared to last year's, the framework calls for a correspondingly larger increase in the unemployment rate in order to reach a peak of at least 10 percent.

In addition, 10-year Treasury yields fall in this year's scenario. By contrast, last year's severely adverse scenario featured unchanged 10-year Treasury yields and a sharply steeper yield curve, reflecting a global aversion to long-term fixed income assets, a development not previously featured in a severely adverse scenario. As a result, the declines in some asset prices, such as stock prices, are more aligned with the declines featured in the 2017 severely adverse scenario.

Adverse Scenario

The adverse scenario is characterized by weakening economic activity across all of the economies included in the scenario, accompanied by a moderate correction in asset prices and rise in volatility. This is a hypothetical scenario designed to assess the strength of banking organizations and their resilience to adverse economic conditions, and does not represent a forecast of the Federal Reserve.

The macroeconomic and financial developments in this year's adverse scenario are similar to the developments in the severely adverse scenario but are more moderate in magnitude. As a result, the two scenarios together allow for an investigation of the relationship between firm-specific outcomes and the intensity of economic and financial dislocations.

As in the severely adverse scenario, the unemployment rate peaks in the third quarter of 2020 but reaches a lower level of 7 percent rather than 10 percent. The U.S. economy experiences a recession, with real GDP falling slightly more than 2¾ percent from peak to trough. Reflecting weak economic conditions, short-term interest rates and longer-term Treasury yields fall. In addition, financial conditions tighten and asset prices decline, but less intensely compared to the severely adverse scenario. For example, equity prices reach a trough at the end of 2019 in both scenarios, falling about 20 percent in the adverse scenario and 50 percent in the severely adverse scenario.

Following the recession, U.S. real activity picks up slowly at first and then gains momentum. The growth rate of U.S. real GDP increases from about

¾ of a percent in 2020 to about 3¼ percent in 2021. The unemployment rate declines modestly, to about 6¼ percent by the end of the scenario period. Consumer price inflation remains close to 2 percent through the end of the scenario period. Yields on 10-year Treasury securities 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 slightly more protracted recession in Japan than elsewhere, and below-trend growth in developing Asia. Weakness in global demand results in slowing inflation in all of the foreign economies under consideration, including a deflationary episode in Japan. Reflecting flight-to-safety capital flows, the U.S. dollar appreciates against the euro, the pound sterling, and the currencies of developing Asia and depreciates modestly against the yen.

Global Market Shock and Counterparty Default Components

The Federal Reserve applied a global market shock to the trading portfolios of 11 firms with large trading and private equity exposures.[13] In addition, the Federal Reserve applied a largest counterparty default (LCPD) component, which assumes the default of a firm's largest counterparty under the global market shock, to the same 11 firms and two other firms with substantial trading, processing, or custodial operations.[14] These components are each 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 hypothetical shocks to a large set of risk factors, such as asset prices, interest rates, and spreads, reflecting general market distress and heightened uncertainty. The risk factor shocks are calibrated to the period of time over which market events would unfold, which varies depending on the anticipated liquidity of different risk types, but are applied to firms' positions on a given as-of date. Firms with significant trading activity were required to include the global market shock in their estimates under the supervisory adverse and severely adverse scenarios and recognize trading and counterparty mark-to-market losses in the first quarter of the planning horizon.[15] In addition, as discussed below, certain large and highly interconnected firms were required to apply the same global market shock to project losses under the LCPD component. The as-of date for the global market shock is November 5, 2018.[16]

The global market shock component for the severely adverse scenario features a significant weakening in European economic conditions and spillover effects that lead to sell-offs in financial assets more broadly. The European distress leads to global market dislocations, affecting U.S. and developing Asian and other emerging markets. There is a sudden increase in implied volatilities broadly, a large decline in industrial and energy commodity prices, and a significant widening in credit spreads, with an associated decline in market liquidity. Liquidity deterioration is most severe in those asset markets that are typically less liquid, such as corporate debt and private equity markets, and is less pronounced in those markets that are typically more liquid, such as publicly traded equity and currency markets. In addition, relationships between the prices of financial assets that would normally be expected to move together come under pressure and are weakened in some cases. As a result, certain hedging strategies are less effective than historical experience would suggest.

Flight-to-quality capital flows push interest rates down across the term structure in the U.S. and certain European countries, while emerging markets

[13] The 11 firms subject to the global market shock are Bank of America Corporation; Barclays US LLC; Citigroup Inc.; Credit Suisse Holdings (USA), Inc.; DB USA Corporation; The Goldman Sachs Group, Inc.; HSBC North America Holdings Inc.; JPMorgan Chase & Co.; Morgan Stanley; UBS Americas Holding LLC; and Wells Fargo & Company. See 12 CFR 252.54(b)(2).

[14] The 13 firms subject to the LCPD component are Bank of America Corporation; The Bank of New York Mellon Corporation; Barclays US LLC; Citigroup Inc.; Credit Suisse Holdings (USA), Inc.; DB USA Corporation; The Goldman Sachs Group, Inc.; HSBC North America Holdings Inc.; JPMorgan Chase & Co.; Morgan Stanley; State Street Corporation; UBS Americas Holding LLC; and Wells Fargo & Company. See 12 CFR 252.54(b)(2)(ii).

[15] The global market shock component applies to a firm that is subject to the supervisory stress test and that has aggregate trading assets and liabilities of $50 billion or more, or aggregate trading assets and liabilities equal to 10 percent or more of total consolidated assets, and is not a large and noncomplex firm under the Board's capital plan rule (12 CFR 225.8).

[16] A firm 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 global market shock (i.e., November 5–9, 2018). Losses from the global market shock will be assumed to occur in the first quarter of the planning horizon.

and countries that are part of the European periphery experience sharp increases in government yields. Countries that are affected by flight-to-quality experience currency appreciation, while European and emerging market currencies experience currency depreciation against the U.S. dollar.

The major differences relative to the 2018 severely adverse scenario include a heightened stress to European assets; a decline in the U.S. yield curve; an appreciation of the U.S. dollar relative to most other currencies; and more muted shocks to U.S. based assets, such as U.S. agency and municipal products. These differences are intended to reflect the more Europe-focused nature of the stress and a general flight-to-quality to U.S. markets.

As noted, firms with substantial trading or custodial operations were required to incorporate the LCPD component into their supervisory adverse and severely adverse scenarios for DFAST 2019.[17] The LCPD component involves the instantaneous and unexpected default of the firm's largest counterparty.[18]

In connection with the LCPD 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.

Each firm's largest counterparty was 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 by applying the global market shock to the value of the trade position and non-cash collateral exchanged for derivatives. The as-of date for the LCPD scenario component is November 5, 2018—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 2019 adverse scenario addresses themes similar to those of the 2018 adverse scenario.

[17] The Board may require a firm to include one or more additional components in its adverse and severely adverse scenarios in the annual stress test based on the company's financial condition, size, complexity, risk profile, scope of operations, or activities, or risks to the U.S. economy. See 12 CFR 252.54(b)(2)(ii).

[18] Certain entities are excluded from the selection of a firm's largest counterparty, including Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

[19] As with the global market shock, a firm subject to the LCPD 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 LCPD component (i.e., November 5–9, 2018). Losses will be assumed to occur in the first quarter of the planning horizon.

Supervisory Stress Test Framework and Model Methodology

Overview of Modeling Framework

The Federal Reserve estimates the effect of supervisory scenarios on the regulatory capital ratios of firms participating in the supervisory stress test by projecting the balance sheet, RWAs, net income, and resulting capital for each firm over a nine-quarter planning horizon. Projected net income, adjusted for the effect of taxes, is combined with capital action assumptions and other components of regulatory capital to produce post-stress capital ratios. The Federal Reserve's approach to modeling post-stress capital ratios generally follows U.S. generally accepted accounting principles (GAAP) and the regulatory capital framework.[20] Figure 11 illustrates the framework used to calculate changes in net income and regulatory capital.

The Federal Reserve calculates projected pre-tax net income for the firms subject to the supervisory stress test by combining projections of revenue, expenses, loan-loss provisions, and other losses, including the following:

- PPNR
- provisions for loan and lease losses
- 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 AFS and held-to-maturity (HTM) portfolios
- losses on market risk exposures, credit valuation adjustment (CVA), and incremental default risk (IDR) for firms subject to the global market shock
- losses from a default of the largest counterparty for firms with substantial trading, processing, or custodial operations

[20] 12 CFR part 217.

Figure 11. Projecting net income and regulatory capital

Net interest income + noninterest income – noninterest expense
= pre-provision net revenue (PPNR)
Note: PPNR includes income from mortgage servicing rights and losses from operational-risk events and OREO costs.

↓

PPNR + other revenue – provisions – AFS/HTM securities losses – HFS/FVO loan losses – trading and counterparty losses
= pre-tax net income
Note: Change in the allowance for loan and lease losses + net charge-offs *= provisions*

↓

Pre-tax net income – taxes – income attributable to minority interest – change in the valuation allowance
= after-tax net income

↓

After-tax net income – net distributions to common and preferred shareholders and other net reductions to shareholder's equity from DFAST assumptions + other comprehensive income
= change in equity capital

↓

Change in equity capital – change in adjustments and deductions from regulatory capital + other additions to regulatory capital
= change in regulatory capital

The Federal Reserve projects these components of pre-tax net income using supervisory models that take the Board's scenarios and firm-provided data as inputs. Macroeconomic variables used in select supervisory models vary across geographic locations (e.g., by state or by county). The Federal Reserve projects the paths of these variables as a function of aggregate macroeconomic variables included in the Board's scenarios.

Pre-provision Net Revenue

PPNR is defined as net interest income (interest income minus interest expense) plus noninterest income minus noninterest expense. Consistent with U.S. GAAP, the projection of PPNR includes projected losses due to operational-risk events and expenses related to the disposition of real-estate-owned properties.[21]

The Federal Reserve models most components of PPNR using a suite of models that generally relate specific revenue and non-credit-related expenses to the characteristics of firms and to macroeconomic variables. These include eight components of interest income, seven components of interest expense, six components of noninterest income, and three components of noninterest expense.

The Federal Reserve separately models losses from operational risk and other real-estate-owned (OREO) expenses. Operational risk is defined as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events."[22] OREO expenses are those expenses related to the disposition of real-estate-owned properties and stem from defaults on first-lien mortgages.

Loan Losses and Provisions on the Accrual Loan Portfolio

The Federal Reserve projects 13 quarters of losses on loans in the accrual loan portfolio using one of two modeling approaches: the expected-loss framework or the net charge-off approach. For certain loans, expected losses under the macroeconomic scenario are estimated by projecting the probability of default (PD), loss given default (LGD), and exposure at default (EAD) for each quarter of the planning horizon. Expected losses in each quarter are the product of these three components.

Losses are modeled under the expected-loss framework for the following loan categories:

- corporate loans, including graded commercial and industrial (C&I) loans, agricultural loans, domestic farm loans, international farm loans, loans to foreign governments, loans for purchasing and carrying securities, other non-consumer loans, and other leases
- CRE loans, including domestic and international non-owner-occupied multifamily or nonfarm, nonresidential property loans and construction and land development (C&LD) loans
- domestic first-lien residential mortgages
- domestic home equity loans (HELs) and home equity lines of credit (HELOCs)
- domestic credit cards and charge cards
- domestic auto loans

The net charge-off approach projects losses over the planning horizon using models that capture the historical behavior of net charge-offs as a function of macroeconomic and financial market conditions and loan portfolio characteristics. The Federal Reserve models losses under the net charge-off approach for other consumer loans, business and corporate credit cards, small-business loans, student loans, and international retail loans.

Losses on the accrual loan portfolio flow into net income through provisions for loan and lease losses. Provisions for loan and lease losses for each quarter equal projected loan losses for the quarter plus the change in the allowance for loan and lease losses (ALLL) needed to cover the subsequent four quarters of expected loan losses, taking into account loan loss reserves established by the firm as of the effective date of the stress test exercise.

The Federal Reserve assumes that ALLL at the end of each quarter covers projected loan losses for four quarters into the future.[23] The supervisory estimate of ALLL at the start of the planning horizon, which is based on projected losses under the adverse or severely adverse scenarios, may differ from a firm's established allowance at the beginning of the planning horizon, which is based on the firm's estimate of incurred losses on the effective date of the stress test.[24] Any difference between the supervisory calculation of ALLL and the firm's reported allowance at

[21] PPNR projections do not include debt valuation adjustment, which is not included in regulatory capital.

[22] See "Basel II: International Convergence of Capital Measurement and Capital Standards," https://www.bis.org/publ/bcbs107.htm.

[23] See SR letter 06-17, "Interagency Policy Statement on the Allowance for Loan and Lease Losses (ALLL)," December 13, 2006, https://www.federalreserve.gov/boarddocs/srletters/2006/SR0617.htm.

[24] With regard to Accounting Standards Update No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments (CECL), the Board stated that the supervisory stress test modeling framework as it relates to CECL would not be altered for the 2019, 2020, or 2021 cycles. See "Statement on the current expected

the beginning of the planning horizon is linearly smoothed into the Federal Reserve's provisions projection over the nine quarters.

Losses on Loans Measured on a Fair-Value Basis

Certain loans are accounted for on a fair-value basis instead of on an accrual basis. For example, if a loan is accounted for using the FVO, it is marked to market and the accounting value of the loan changes as market risk factors and fundamentals change. Similarly, loans that are held for sale are accounted for at the lower of cost or market value.

The models for these asset classes project gains and losses on the banks' FVO/HFS loan portfolios over the nine-quarter planning horizon, net of any hedges, by applying the scenario-specific path of interest rates and credit spreads to loan yields.

Losses are modeled under this approach for the following loan categories:

- FVO/HFS C&I loans
- FVO/HFS CRE loans
- FVO/HFS residential mortgages, student loans, auto loans, and credit cards

Gains and losses on HFS C&I and CRE loans are estimated using a model specific to those asset classes. Gains and losses on FVO/HFS retail loans are modeled separately.

Losses on Securities in the Available-for-Sale and Held-to-Maturity Portfolios

The Federal Reserve estimates two types of losses on AFS or HTM securities related to investment activities.[25] First, for securities classified as AFS, projected changes in the fair value of the securities due to changes in interest rates and other factors will result in unrealized gains or losses that are recognized in capital for some firms through other comprehensive income (OCI).[26] Second, when the fair value of a security falls below its amortized cost, OTTI on the security may be recorded. With the exception of certain government-backed obligations, both AFS and HTM securities are at risk of incurring credit losses leading to OTTI.[27] The models project security-level OTTI relating to credit losses, using as an input the projected fair value for each security over the nine-quarter planning horizon under the macroeconomic scenarios.

Securities at risk of credit-related OTTI include the following securitizations and direct debt obligations:

- corporate debt securities
- sovereign debt securities (other than U.S. government obligations)
- municipal debt securities
- non-agency mortgage-backed, asset-backed, collateralized loan obligation (CLO), and collateralized debt obligation (CDO) securities

Gains or Losses on the Fair Value of Available-for-Sale Securities

The fair value of securities in the AFS portfolio may change in response to the macroeconomic scenarios. Under U.S. GAAP, unrealized gains and losses on AFS securities are reflected in accumulated OCI (AOCI) but do not flow through net income.[28] Under the regulatory capital rule, AOCI must be incorporated into CET1 for certain firms. The incorporation of AOCI in regulatory capital is described in Calculation of Regulatory Capital Ratios.

credit loss methodology (CECL) and stress testing," https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20181221b1.pdf.

[25] This portfolio does not include securities held for trading. Losses on these securities are projected by the model that projects gains and losses on trading exposures.

[26] OCI is accounted for outside of net income. Under regulatory capital rules, accumulated OCI (AOCI) that arises from unrealized changes in the value of AFS securities must be incorporated into CET1 for firms subject to the advanced approaches and other firms that do not opt out of including AOCI in regulatory capital. The Board has proposed to amend its prudential standards to allow firms with total consolidated assets of less than $700 billion and cross-jurisdictional activity of less than $75 billion to opt out of including AOCI in regulatory capital (83 Fed. Reg. 61408 (November 29, 2018)).

[27] Certain government-backed securities, such as U.S. Treasuries, U.S. government agency obligations, U.S. government agency or government-sponsored enterprise (GSE) mortgage-backed securities (MBS), Federal Family Education Loan Program (FFELP) student loan asset-backed securities, and pre-refunded municipal bonds, are assumed not to be subject to credit-related OTTI charges.

[28] Unrealized gains and losses on equity securities are recognized in net income and affect regulatory capital for all firms. Financial Accounting Standards Board Accounting Standards Update No. 2016-01.

Box 1. Model Changes for DFAST 2019

Each year, the Federal Reserve has refined both the design and execution of the Dodd-Frank Act supervisory stress test, including its development and enhancement of independent supervisory models. The supervisory stress test models may be enhanced 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 2019, the Federal Reserve enhanced the models that project auto loan losses, credit card losses, corporate loan losses, fair value for debt securities, and commercial real estate (CRE) loan losses. In addition to these model changes, the Federal Reserve made other less material enhancements to simplify the models and account for changes in the historical data used to estimate the models.[1]

Enhancements to the Auto Loan Model

The Federal Reserve enhanced the probability of default (PD) and loss given default (LGD) components of the auto loan model. These refinements include changes to the way certain risk drivers are captured in the model, which reduces volatility from historical macroeconomic movements, and an adjustment to newly originated accounts to better reflect their higher credit risk compared to otherwise similar accounts.

Collectively, the enhancements resulted in a small increase in overall projected auto loan losses; however, for firms with large domestic auto loan portfolios, the changes resulted in materially higher projected losses. Consistent with the Federal Reserve's stated policy for material model changes, the auto loan loss estimates for DFAST 2019 reflect the average of estimates from the model used in DFAST 2018 and estimates from the updated model. Auto loan loss estimates for DFAST 2020 will only reflect the updated model.[2]

Phase-In and Additional Refinements to the Credit Card Model

The Federal Reserve began a two-year transition to an updated credit card model in DFAST 2018, and the updated model is fully in effect for DFAST 2019. The two-year phase-in policy was employed because the credit card model refinements materially affected the forecasted credit card losses for a number of firms. The 2018 changes to the credit card model were described in the 2018 model change disclosure letter.[3]

Additionally, the Federal Reserve refined the way the model treats uncollected interest and fees in the exposure at default (EAD) component of the model. Data from more recent periods that include a larger set of firms supported a slight reduction in the assumed percentage of uncollected interest and fee income.

The collective impact resulted in a slight increase in overall losses projected by the domestic credit card model, with larger increases for firms with material bank card exposures.[4]

Refined Treatment of Missing Firm-Reported Corporate Loan Data

The Federal Reserve refined the treatment of missing firm-reported corporate loan data to better align the

(continued on next page)

[1] Portfolios with material model changes are defined as those in which the change in revenue or losses exceeds 50 basis points for any firm individually under the severely adverse scenario, expressed as a percentage of risk-weighted assets (RWAs), based on data and scenarios from DFAST 2018. In cases in which a portfolio contains more than one change, materiality is defined by the total change in revenue or losses arising from all changes.

[2] The Federal Reserve phases in the most material model enhancements over two stress test cycles to smooth the effect on post-stress capital ratios. See 84 Fed. Reg. 6664 (Feb. 28, 2019).

[3] See "Enhancements to Federal Reserve Models Used to Estimate Post-Stress Capital Ratios," March 2, 2018, https://www .federalreserve.gov/supervisionreg/files/model-change-letter-20180302.pdf.

[4] Analysis conducted using data and scenarios from DFAST 2018 and 2019. The effect on projections for future years is uncertain and will depend on changes in firm portfolios, data, and scenarios.

Unrealized gains and losses are calculated as the difference between each security's fair value and its amortized cost. The amortized cost of each AFS security is equivalent to the purchase price of a debt security, which is periodically adjusted if the debt security was purchased at a price other than par or face value, has a principal repayment, or has an impairment recognized in earnings.[29]

OCI losses from AFS securities are computed directly from the projected change in fair value, taking into account OTTI losses and applicable interest-rate hedges on securities. All debt securities held in the AFS portfolio are subject to OCI losses, including the following securities:

- U.S. Treasuries

[29] The fair value of each AFS security is projected over the nine-quarter planning horizon using either a present-value calculation, a full revaluation using a security-specific discounted cash flow model, or a duration-based approach, depending on the asset class.

Box 1. Model Changes for DFAST 2019—*continued*

treatment of missing data in the corporate loan portfolio with other portfolios. Under the refined treatment, the Federal Reserve assigns a conservative loss rate for an entire portfolio when a certain proportion of the loans are missing required model inputs. Analysis suggests the refined treatment remains appropriately conservative.

The refinement resulted in a small decrease in overall losses projected by the corporate loan model. However, for certain firms that are unable to report variables required by the corporate loan model, the change was material.

Enhancement to the Risk Drivers in the Debt Fair Value Model

Certain models used to project fair value for debt securities were enhanced to increase modeling flexibility and better align with historical trends. The risk drivers for agency mortgage-backed securities (MBS), such as option-adjusted spread (OAS), now flexibly vary over the planning horizon. The Federal Reserve also adopted a new model to project the OAS for sovereign bonds. In DFAST 2018, the OAS was projected using a scenario-based regression model. The new model projects the OAS based on high-percentile historical movements in sovereign bond spreads.

Collectively, the enhancements to the risk drivers in the debt fair value model resulted in a minimal increase in overall other comprehensive income (OCI), with material increases for firms with large holdings of sovereign bonds. Consistent with the Federal Reserve's stated policy for material model changes, projections of OCI for DFAST 2019 reflect the average OCI under the two approaches for projecting sovereign bond OAS, and projections for DFAST 2020 will only reflect the new model.

Refinements to the Commercial Real Estate Loan Model

The Federal Reserve refined the CRE LGD model and made a number of other minor changes to the CRE loan-loss model. The previous LGD model relied on reported charge-off and loan reserve data, which led to idiosyncratic reporting differences across firms. The change improves consistency by using a common data source and framework for the projection of LGD. Additionally, the Federal Reserve simplified the process for calculating auxiliary risk drivers. Under the new approach, a single conceptual framework is used to project auxiliary risk drivers, which increases consistency and decreases complexity.

The refinements resulted in a slight increase in overall projected CRE loan losses in the aggregate. For certain firms, these refinements resulted in modestly larger increases or slight declines in loan losses, depending on the risk characteristics of their portfolios.

Re-estimation of and Refinements to Other Supervisory Models

Each year, the Federal Reserve makes a number of relatively minor refinements to models that may include re-estimation with new data, re-specification based on performance testing, and other refinements to the code used to produce supervisory projections. In 2019, models most affected by these refinements are the models for certain components of pre-provision net revenue (PPNR), first- and second-lien mortgages, trading and counterparty, other retail, operational risk, and the calculation of regulatory capital ratios. With the exception of the changes to certain components of PPNR, the refinements collectively resulted in a minimal change in post-stress capital ratios with no material impacts on any firm.

The Federal Reserve re-estimated the PPNR models with more data to better reflect recent performance in PPNR while keeping the structure of the model unchanged. For this cycle, the re-estimation resulted in a small decrease in aggregate PPNR forecasts relative to DFAST 2018 due to weaker PPNR performance in the most recent year, particularly for net interest income. Additionally, longer time-series data for new intermediate holding companies (IHCs) and historical data revisions changed the estimation data.

- U.S. Agency securities
- corporate debt securities
- sovereign debt securities
- municipal debt securities
- mortgage-backed, asset-backed, CLO, and CDO securities

Losses on Trading and Private Equity Exposures and Credit Valuation Adjustment

The global market shock, which applies to a subset of firms, is a set of hypothetical shocks to market values and risk factors that affect the market value of

Box 2. Recent Efforts to Increase Transparency of the Supervisory Stress Test

Through the Dodd-Frank Act supervisory stress test exercise and other supervisory programs, the Federal Reserve promotes the soundness and stability of the financial system and the U.S. economy. Regular, public disclosure of information about the supervisory stress test models, methodology, and results can enhance the credibility of the stress test; further the goal of maintaining market and public confidence in the financial system; and lead to improvements in the Federal Reserve's approaches. For these reasons, the Board publishes detailed information about its stress tests every year.

Annual disclosures of the stress test results and of information about supervisory models represent a significant increase in the transparency of large bank supervision in the United States compared to the pre-crisis period. The Board has recently taken a number of steps to further increase the transparency of the stress test.

In February 2019, after seeking public comment, the Board adopted a final package of three proposals designed to increase the transparency of the supervisory stress test.[1] First, a final notice of enhanced model disclosure describes a public document that would provide more information about supervisory stress test models and include granular loss rates produced by those models. Second, a final Stress Testing Policy Statement explains the Federal Reserve's approach to the development, validation, implementation, and use of supervisory stress test models. Third, final amendments to the Policy Statement on the Scenario Design Framework for Stress Testing clarify the Board's approach to setting the path of the unemployment rate and house prices in the macroeconomic scenario. Together, these three elements represent an increase in the transparency of the supervisory stress test.

In March 2019, consistent with the final notice of enhanced model disclosure, the Board published a new document containing detailed information about the supervisory stress test models.[2] The supervisory stress test methodology disclosure provides enhanced descriptions of the supervisory stress test models, ranges of loss rates for loans that are grouped by distinct risk characteristics, and portfolios of hypothetical loans with associated loss rates projected by the Federal Reserve's models. The last two items are provided for the models used to project losses on corporate loan and credit card portfolios, which account for about 60 percent of total projected loan losses in the 2019 stress test exercise. The Board plans to publish this disclosure annually in advance of the stress test exercise. Accordingly, this document no longer contains descriptions of supervisory models.

In addition, beginning with this disclosure, the Federal Reserve is publishing decompositions of its pre-provision net revenue (PPNR) projections by net interest income, noninterest income, and noninterest expense for each firm. Also, to facilitate the analysis of stress test results, the Board plans to post to its public website for the first time a dataset of all past results. The data will facilitate analysis of the supervisory stress test results by members of the public.

Finally, in July 2019, the Board will host the Stress Testing: A Discussion and Review conference to gather insights on the transparency and effectiveness of the stress tests and how the stress tests can remain a dynamic and useful tool for large bank supervision. The conference will bring together academics, regulators, bankers, and other stakeholders and will be live-streamed so that interested members of the public can view the proceedings.

1 Board of Governors of the Federal Reserve System, "Federal Reserve Board finalizes set of changes that will increase the transparency of its stress testing program for nation's largest and most complex banks," press release, February 5, 2019, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20190205a.htm.

2 See Board of Governors of the Federal Reserve System, *Dodd-Frank Act Stress Test 2019: Supervisory Stress Test Methodology*,(Washington, DC: Board of Governors, March 2019), https://www .federalreserve.gov/publications/files/2019-march-supervisory-stress-test-methodology.pdf.

firms' trading and private equity positions.[30] The design of the global market shock component differs from the design of the nine-quarter macroeconomic scenario in that it assumes the losses are incurred instantaneously at the start of the planning horizon rather than gradually over nine quarters.

The trading and private equity model generates loss estimates related to trading and private equity positions under the global market shock. In addition, the global market shock is applied to firm counterparty exposures to generate losses due to changes in CVA.

Like other components of the supervisory stress test, the Federal Reserve designed the global market shock component according to its model design principles. Given the unpredictable nature of the duration and timing of market shocks, the global market

30 The global market shock in the 2019 supervisory stress test applies to firms that have aggregate trading assets and liabilities of $50 billion or more or trading assets and liabilities equal to or greater than 10 percent of total consolidated assets. See 82 Fed. Reg. 59608 (December 15, 2017).

shock component assumes that the market dislocation affects the value of trading exposures instantaneously. The assumption is consistent with the Federal Reserve's model design principles that emphasize the use of conservative and forward-looking projections, particularly in the face of uncertainty.

The trading and private equity model covers a wide range of firms' exposures to asset classes such as public equity, foreign exchange, interest rates, commodities, securitized products, traded credit (e.g., municipals, auction rate securities, corporate credit, and sovereign credit), private equity, and other fair-value assets. Loss projections are constructed by applying movements specified in the global market shock to market values of firm-provided positions and risk factor sensitivities.[31]

Incremental Default Risk

The Federal Reserve separately estimates the risk of losses arising from a jump-to-default of issuers of debt securities in the trading book in excess of mark-to-market losses calculated by the trading model. Trading losses associated with incremental default risk account for concentration risk in U.S. agencies, trading book securitization positions, and corporate, sovereign, and municipal bonds. The model measures the potential for jump-to-default losses as a function of the macroeconomic scenario. These losses are applied in each of the nine quarters of the planning horizon.

Largest Counterparty Default Losses

The LCPD component is applied to firms with substantial trading or custodial operations. The LCPD captures the risk of losses due to an unexpected default of the counterparty whose default on all derivatives and securities financing transactions (SFTs) would generate the largest stressed losses for a firm.

Consistent with the Federal Reserve's modeling principles, losses associated with the LCPD component are recognized instantaneously in the first quarter of the planning horizon.

[31] The trading model is also used to calculate gains or losses on firms' portfolios of hedges on credit valuation adjustment exposures (CVA hedges).

Balance Projections and the Calculation of Regulatory Capital Ratios

Balance Sheet Items and Risk-Weighted Assets

The Federal Reserve projects asset and liability balances using a common framework for determining the effect of its scenarios on balance sheet growth. This framework is consistent with the Federal Reserve's policy that aggregate credit supply does not contract during the stress period. The policy promotes the Federal Reserve's goal of helping to ensure that large financial firms remain sufficiently capitalized to accommodate credit demand in a severe downturn.

The balance sheet projections are based on historical data from the Federal Reserve's Financial Accounts of the United States (Z.1) statistical release.

The Federal Reserve projects credit RWA and market RWA (MRWA) separately. In the projection of credit RWA, the Federal Reserve assumes that features of the credit portfolio and non-trading book assets remain constant during the projection period, while the projection of MRWA takes into account changes in market conditions assumed in the supervisory scenarios.

Calculation of Regulatory Capital Ratios

The five regulatory capital measures in DFAST 2019 are the CET1, tier 1 risk-based capital, total risk-based capital, tier 1 leverage, and supplementary leverage ratios (see table 1). 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.

Pre-tax net income and the other scenario-dependent components of the regulatory capital ratios are combined with additional information, including assumptions about taxes and capital distributions, to calculate post-stress regulatory capital. In that calculation, the Federal Reserve first adjusts pre-tax net income to account for taxes and other components

Table 1. Applicable capital ratios and calculations for firms in the 2019 Dodd-Frank Act stress tests

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

of net income, such as income attributable to minority interests, to arrive at after-tax net income.[32]

The Federal Reserve calculates the change in equity capital over the planning horizon by combining projected after-tax net income with changes in AOCI, assumed capital distributions, and other components of equity capital. The path of regulatory capital over the planning horizon is calculated by combining the projected change in equity capital with the firm's starting capital position and accounting for other adjustments to regulatory capital specified in the Board's regulatory capital framework.[33]

The denominator of each firm's regulatory capital ratios, other than the leverage ratios, is 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.[34]

Capital Action Assumptions

To project post-stress capital ratios for the Dodd-Frank Act supervisory stress test, 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 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 planned mergers or acquisitions that have been reflected in the firm's pro forma balance sheet estimates.[35] 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.[36] Also, firms are assumed to pay scheduled dividend, interest, or principal payments on any other capital instrument

32 The Federal Reserve applies a consistent tax rate of 21 percent to pre-tax net income and accounts for deferred tax assets.

33 The regulatory capital framework specifies that regulatory capital ratios account for items subject to adjustment or deduction in regulatory capital, limits the recognition of certain assets that are less loss-absorbing, and imposes other restrictions.

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

35 See 12 CFR 252.56(b).

36 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.

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.

Data Inputs

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.[37] 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 18 firms participating in DFAST 2019 submitted data as of December 31, 2018, through the FR Y-14M and FR Y-14Q reports in February, March, and April 2019. The same firms submitted the FR Y-14A reports, which also include projected data, on April 5, 2019.

Consistent with the Board's Stress Testing Policy Statement, the Federal Reserve makes certain assumptions about missing data or data with deficiencies significant enough to preclude the use of supervisory models. Given a reasonable set of assumptions or approaches, all else equal, the Federal Reserve will opt to use those that result in larger losses or lower revenue.

The conservative assumptions applied depend on the nature of the data deficiency.[38] Where possible and appropriate, conservative values are assigned to specific deficient data items reported in the FR Y-14 information collection. For example, if certain observations in the first-lien mortgage portfolio were missing credit scores, the Federal Reserve would apply to those observations the 90th percentile credit score across all FR Y-14M submissions for that portfolio.

In other cases in which the data deficiency is severe enough that a modeled estimate cannot be produced for a portfolio segment or portfolio, the Federal Reserve may assign a conservative rate (e.g., the 10th percentile PPNR rate or the 90th percentile loss rate) to that segment or portfolio. In general, conservative portfolio loss rates are calculated at the most granular definition of a portfolio possible. For example, home equity losses are comprised of losses on HELOCs and HELs. If a given firm reported deficient data for its HELOC portfolio only, then the overall home equity losses for that firm would be based on a conservative loss rate applied to the HELOC portfolio, but HEL projected losses would be modeled using the supervisory model.

Firms are required to submit detailed loan and securities information for all material portfolios, where portfolios categories are defined in the FR Y-14M and FR Y-14Q instructions. The definition of a portfolio's materiality varies and depends primarily on the firm's complexity. 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. 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.

Modeling Approaches for IHCs Newly Subject to the Supervisory Stress Test

In 2018, six IHCs became subject to the supervisory stress test for the first time (new entrant IHCs), and four of those firms were also subject to the supervisory stress test in 2019. The remaining two IHCs are effectively on an extended stress test cycle for 2019. In DFAST 2019, the Federal Reserve modified its approach to modeling revenues and certain types of losses for these firms, given a lack of available data sufficient to produce certain modeled estimates.[39]

Specifically, the certain components of PPNR 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

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

[38] The Federal Reserve has established conservative approaches for missing or insufficient data for its core PPNR, operational-risk loss, retail loan loss, wholesale loan loss, securities loss, fair value loan loss, and CVA models. The methodology the Federal Reserve uses to implement these assumptions may vary somewhat across supervisory models.

[39] These firms are Barclays US LLC; Credit Suisse Holdings (USA), Inc.; DB USA 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.

approach uses modeled estimates for the remaining firms in the stress test. The Federal Reserve uses the same models it uses for all other firms to estimate loan losses for new entrant IHCs, based on the data the firms provided.

Because the new entrant IHCs were formed as of July 1, 2016, the historical data reported for the legal entity are in most cases insufficient to apply the supervisory models of core PPNR components to those firms. The modified PPNR projection for the new entrant IHCs is generally 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, 2018 is generally set equal to its median historical value between the first and fourth quarters of 2018. Over the planning horizon, this ratio is assumed to move by the same number of basis points as the aggregate ratio for the industry excluding the four new entrant IHCs.

In DFAST 2019, certain components of core PPNR can now be projected using supervisory models, given additional available data. First, for IHCs subject to the global market shock, the Federal Reserve models trading revenues in the aggregate as a function of stock market returns and changes in stock market volatility and allocates revenues to each firm based on a measure of the firm's market share. Where measures of market share are available for the IHCs, the trading revenue model is used. Second, the supervisory model is used for certain noninterest income and noninterest expense components that are projected as the median of the firm's ratio over the most recent eight quarters.

Operational-risk losses are also projected using a modified approach for the four IHCs, given the lack of a historical measure of total assets that is consistent over time and across firms. The historical simulation model applies to firms with sufficient historical operational-loss data submitted on the FR Y-14Q reports cannot be applied to these firms. In place of the historical simulation model, a modified model assigns each new entrant IHC 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, 2018.

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

In DFAST 2019, new entrant IHCs with significant trading activity and HSBC North America Holdings Inc. became subject to the full global market shock component. These firms had been subject to the supervisory market risk component in DFAST 2018. Under the supervisory market risk component, the Federal Reserve applied loss rates to certain exposures, based on losses resulting from the global market shock and LCPD components for the six domestic firms in 2014–17.

Supervisory Stress Test Results

This section describes the Federal Reserve's projections of RWAs, losses, revenues, expenses, and capital positions for the 18 firms participating in DFAST 2019 under the severely adverse and adverse scenarios. Results are presented both in the aggregate for the 18 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 B.

For DFAST 2019, the Board is also disclosing the breakouts of PPNR into three components: net interest income, noninterest income, and noninterest expense. This is reflected in the results for this year.

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

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

Severely Adverse Scenario

The aggregate capital ratio is projected to decline to a minimum of 9.2 percent (see table 2).

For the 18 firms subject to the supervisory stress test in 2019, PPNR is lower compared to DFAST 2018, primarily as a result of a flatter yield curve in the scenario and the resulting compression in net interest margin.

Total loan losses are $295.8 billion, compared to $317.6 billion for these firms in the DFAST 2018 exercise. Corporate and CRE loan losses are lower compared to those in DFAST 2018 because the widening of spreads on BBB corporate bonds is smaller than in the DFAST 2019 severely adverse scenario. Losses on residential mortgages are lower, driven by a smaller decline in house prices compared to the DFAST 2018 scenario. Credit card loss rates have increased in the aggregate, due in part to the final phase-in of changes to the supervisory credit card model.

Lower losses in DFAST 2019 offset lower PPNR, resulting in the same decline in pre-tax net income as a percent of average total assets as in DFAST 2018 (see figure 4).

Credit spreads and interest rates are two key drivers of unrealized gains and losses on AFS securities. In DFAST 2018, these features in the scenario resulted in projected unrealized losses on AFS securities. A more muted widening of credit spreads and a larger downward shift in the yield curve in the scenario resulted in projected unrealized gains on AFS securities in DFAST 2019.

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 2018 declines over the course of the planning horizon, with first-quarter 2021 levels ranging from 1.3 percentage points to 2.7 percentage points lower than at the start of the planning horizon (see table 2). Table 4 presents these ratios for each of the 18 firms.

The changes in post-stress capital ratios vary considerably across firms (see figure 13). 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.

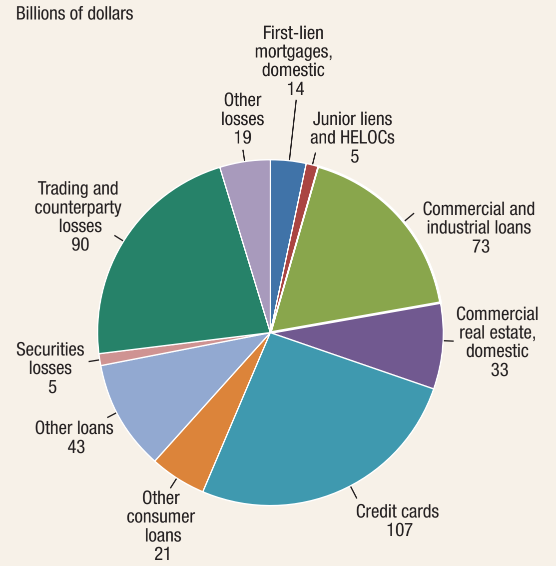
Projected Losses

The Federal Reserve projects that the 18 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 $410 billion for the 18 firms in the aggregate over the nine quarters of the planning horizon. These losses include

- $296 billion in accrual loan portfolio losses;
- $5 billion in OTTI and other realized securities losses;
- $90 billion in trading and/or counterparty losses at the 13 firms with substantial trading, processing, or custodial operations; and
- $19 billion in additional losses from items such as loans booked under the fair-value option (see table 2).

The largest losses derive from two sources: (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 18 firms in the severely adverse scenario (figure 12).

Figure 12. Projected losses in the severely adverse scenario



Note: The projected losses are not comparable to DFAST 2018. There were 35 participating firms in DFAST 2018 and 18 participating firms in DFAST 2019.

Loan Losses

Projected losses on domestic residential mortgages, credit cards, and other consumer loans represent 50 percent of projected loan losses and 36 percent of total projected losses for the 18 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 fifth year in a row, commercial and industrial loan losses and credit card losses are the two largest categories of loan losses at $73 billion and $107 billion, respectively. Combined, commercial and industrial and credit cards represent 44 percent of total projected losses.

For the 18 firms as a group, the nine-quarter cumulative loss rate for all accrual loan portfolios is 5.7 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 15.1 percent across these institutions (see table 7 and figure 14).

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 1.4 percent on domestic first-lien mortgages and 16.8 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.[40]

[40] Additionally, losses are calculated based on the EAD, 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.

Projected loss rates on most loan categories show similar dispersion across firms (see table 7 and figures C.1 through C.7). 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 6.0 percent, the rates among firms with commercial and industrial loans vary from a low of 1.0 percent to a high of 22.6 percent. For credit card loans, the range of projected loss rates is from 5.7 percent to 23.0 percent, with a median of 16.3 percent.

Differences in projected loss rates across firms primarily reflect differences in loan and borrower characteristics. The composition of DFAST 2019 firms' loan portfolios shifted since the DFAST 2018 exercise, with corporate lending experiencing the most rapid growth. In the aggregate, risk in bank loan holdings is slightly lower relative to DFAST 2018.

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 $90 billion in trading losses from the global market shock at the 11 firms with large trading and private-equity exposures and losses from the counterparty default component at the 13 firms with substantial trading, processing, or custodial operations. Trading and counterparty losses range between $0.8 billion and $21 billion across the 13 firms (see table 5) subject to the full global market shock.

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 (November 5, 2018) and could have differed if they had been based on a different date.

Projected PPNR and Net Income

In the aggregate, the 18 firms are projected to generate $327 billion in PPNR cumulatively over the nine quarters of the planning horizon, equal to 2.4 percent of their combined average assets (see table 2). The Federal Reserve's PPNR projections are driven by the shape of the yield curve, the path of asset prices, equity market volatility, and measures of economic activity in the severely adverse scenario. In addition, the PPNR projections incorporate expenses stemming from estimates of elevated levels of losses from operational-risk events such as fraud, employee lawsuits, litigation-related expenses, or computer system or other operating disruptions.[41] In aggregate for the 18 firms, those operational risk losses of almost $123 billion this year are $1 billion higher this year than last year for the same set of firms, 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 15). 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.[42] 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 18 firms (see table 2 for aggregate). The projections are cumulative for the nine quarters of the planning horizon.

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

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

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 $327 billion in total provisions includes $296 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 18 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 $115 billion over the planning horizon for the 18 firms.

The ratio of pre-tax net income to average assets for each of the 18 firms ranges from −3.6 percent to 1.2 percent (see figure 16). Projected cumulative net income for most of the firms (13 of 18) 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 13 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 2019.

Final capital ratios for advanced approaches firms and other firms that opt into advanced approaches treatment for AOCI are also impacted by 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 $37 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, −$30 billion in AOCI is included in post-stress regulatory capital in the severely adverse scenario as of the first quarter of 2021.

Table 2. 18 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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	9.7	9.2
Tier 1 capital ratio	14.0	11.3	10.9
Total capital ratio	16.4	13.7	13.5
Tier 1 leverage ratio	8.6	6.9	6.8
Supplementary leverage ratio	6.9	5.6	5.4

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	295.8	5.7
First-lien mortgages, domestic	14.1	1.4
Junior liens and HELOCs, domestic	5.1	2.6
Commercial and industrial[2]	72.7	6.3
Commercial real estate, domestic	32.9	6.4
Credit cards	107.2	16.8
Other consumer[3]	21.1	4.7
Other loans[4]	42.7	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.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	8,203.8	8,366.3

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	326.8	2.4
equals		
Net interest income	610.4	4.4
Noninterest income	595.0	4.3
less		
Noninterest expense[2]	878.5	6.3
Other revenue[3]	0.0	
less		
Provisions	327.5	
Realized losses/gains on securities (AFS/HTM)	4.9	
Trading and counterparty losses[4]	90.2	
Other losses/gains[5]	19.1	
equals		
Net income before taxes	-114.9	-0.8
Memo items		
Other comprehensive income[6]	37.3	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-66.9	-29.7

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

2 Noninterest expense 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, 2019:Q1–2021:Q1
18 participating firms
Percent

Firm	Stressed ratios with DFA stress testing capital action assumptions
Bank of America Corporation	9.7
The Bank of New York Mellon Corporation	11.3
Barclays US LLC	11.6
Capital One Financial Corporation	6.0
Citigroup Inc.	8.2
Credit Suisse Holdings (USA), Inc.	18.4
DB USA Corporation	14.8
The Goldman Sachs Group, Inc.	7.6
HSBC North America Holdings Inc.	8.5
JPMorgan Chase & Co.	8.1
Morgan Stanley	8.9
Northern Trust Corporation	10.7
The PNC Financial Services Group, Inc.	8.5
State Street Corporation	10.9
TD Group US Holdings LLC	12.9
UBS Americas Holding LLC	16.0
U.S. Bancorp	8.1
Wells Fargo & Company	9.5

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2019:Q1 to 2021: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. Capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1 under the severely adverse scenario: 18 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 2018:Q4	Ending	Minimum	Actual 2018:Q4	Ending	Minimum	Actual 2018:Q4	Ending	Minimum	Actual 2018:Q4	Ending	Minimum	Actual 2018:Q4	Ending	Minimum
Bank of America Corporation	11.6	9.7	9.7	13.2	11.2	11.2	15.4	13.5	13.5	8.4	7.1	7.1	6.8	5.8	5.8
The Bank of New York Mellon Corporation	11.7	13.1	11.3	14.1	15.4	13.6	15.1	16.6	14.7	6.6	7.2	6.4	6.0	6.6	5.9
Barclays US LLC	14.5	12.4	11.6	17.6	15.4	14.5	21.0	18.5	17.8	8.9	7.8	7.5	7.3	6.3	6.1
Capital One Financial Corporation	11.2	6.0	6.0	12.7	7.4	7.4	15.1	9.6	9.6	10.7	6.5	6.5	9.0	5.5	5.5
Citigroup Inc.	11.9	9.5	8.2	13.5	11.1	9.7	16.6	14.1	12.9	8.3	6.8	6.1	6.4	5.3	4.7
Credit Suisse Holdings (USA), Inc.	25.8	22.3	18.4	26.5	23.2	19.3	26.6	23.2	19.4	12.9	10.1	8.5	11.3	8.8	7.4
DB USA Corporation	22.9	15.0	14.8	34.4	26.4	26.2	34.4	26.7	26.6	9.2	6.9	6.9	8.4	6.4	6.3
The Goldman Sachs Group, Inc.	13.3	9.9	7.6	15.3	11.9	9.5	18.0	14.6	12.4	8.9	6.7	5.7	6.2	4.7	4.0
HSBC North America Holdings Inc.	12.6	8.5	8.5	14.2	10.1	10.1	18.0	14.2	14.2	7.5	5.1	5.1	5.6	3.8	3.8
JPMorgan Chase & Co.	12.0	8.2	8.1	13.7	9.9	9.8	15.5	11.9	11.8	8.1	5.9	5.8	6.4	4.7	4.6
Morgan Stanley	16.9	11.1	8.9	19.2	13.4	11.1	21.8	15.7	13.6	8.4	5.7	5.1	6.5	4.4	3.9
Northern Trust Corporation	12.9	13.2	10.7	14.1	14.5	12.0	16.1	16.5	14.0	8.0	8.2	6.8	7.0	7.2	6.0
The PNC Financial Services Group, Inc.	9.6	8.5	8.5	10.8	9.7	9.6	13.0	12.0	12.0	9.4	8.4	8.4	7.8	7.1	7.1
State Street Corporation	11.7	11.8	10.9	15.5	15.5	14.6	16.3	16.2	15.4	7.2	7.2	6.8	6.3	6.3	6.0
TD Group US Holdings LLC	16.3	13.7	12.9	16.3	13.7	12.9	17.3	15.0	14.2	9.2	7.8	7.5	8.3	7.0	6.7
UBS Americas Holding LLC	21.7	16.8	16.0	25.7	20.7	19.9	27.0	22.8	21.9	11.3	9.0	8.8	n/a	n/a	n/a
U.S. Bancorp	9.1	8.1	8.1	10.7	9.7	9.7	12.6	11.4	11.4	9.0	8.2	8.2	7.2	6.6	6.6
Wells Fargo & Company	11.7	10.1	9.5	13.5	11.8	11.2	16.6	14.8	14.5	9.1	8.0	7.6	7.7	6.8	6.5
18 participating firms	12.3	9.7	9.2	14.0	11.3	10.9	16.4	13.7	13.5	8.6	6.9	6.8	6.9	5.6	5.4

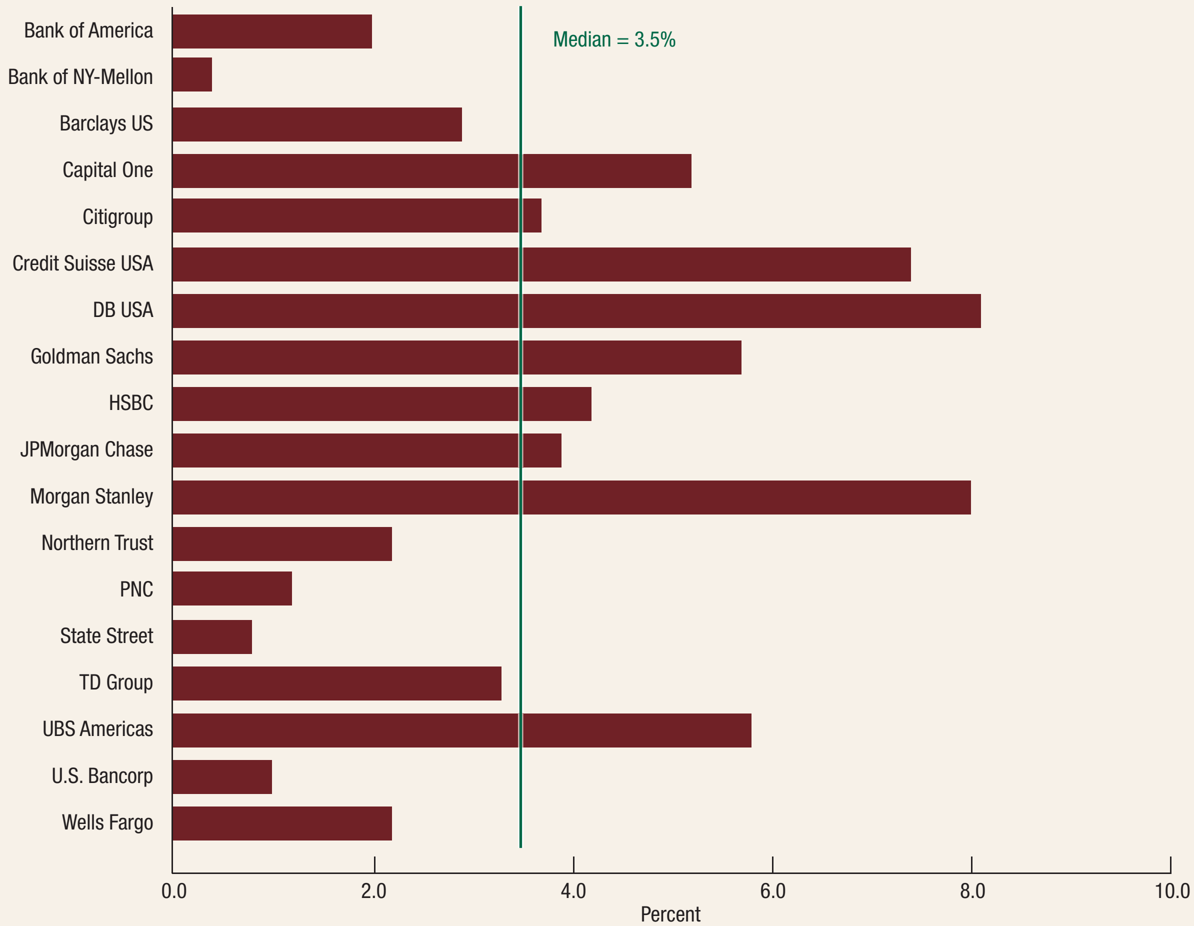
Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021: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.

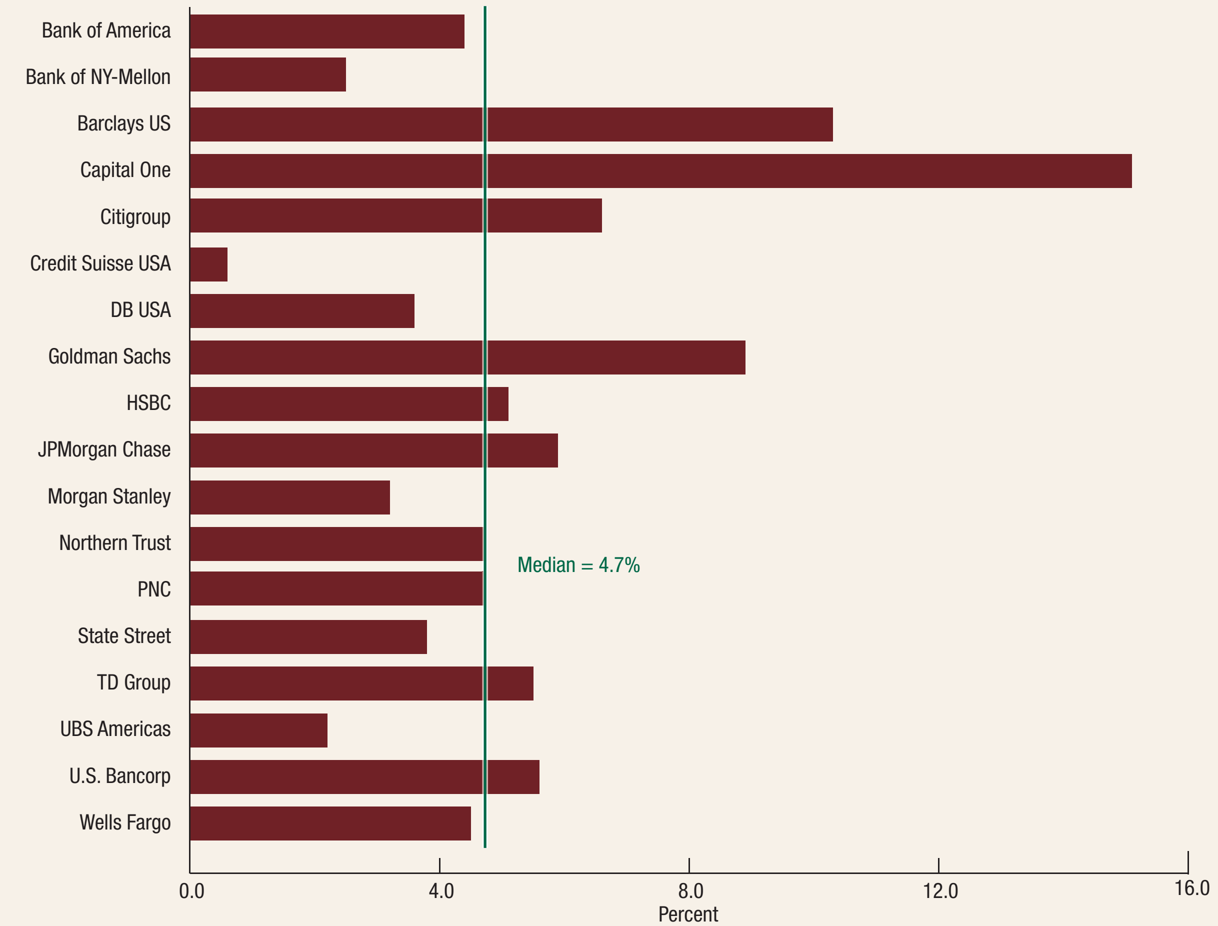
Source: Federal Reserve estimates in the severely adverse scenario.

Figure 13. Change from 2018:Q4 to minimum CET1 ratio in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1–2021:Q1 as a percent of risk-weighted assets.

Figure 14. Total loan loss rates in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1–2021:Q1 as a percent of average balances.

Table 5. Projected losses, revenue, and net income before taxes through 2021:Q1 under the severely adverse scenario: 18 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] (2021:Q1)
Bank of America Corporation	42.3	0.0	48.3	0.2	8.9	2.7	-17.8	12.5	1.3
The Bank of New York Mellon Corporation	7.3	0.0	1.8	0.1	1.1	0.0	4.3	1.5	-1.7
Barclays US LLC	4.6	0.0	4.5	0.0	0.8	0.0	-0.6	0.0	0.0
Capital One Financial Corporation	30.7	0.0	44.3	0.1	0.0	0.0	-13.6	1.0	0.1
Citigroup Inc.	56.7	0.0	49.9	0.9	15.7	1.9	-11.6	5.2	-31.2
Credit Suisse Holdings (USA), Inc.	2.3	0.0	0.1	0.0	4.8	0.1	-2.6	0.0	-0.1
DB USA Corporation	-0.4	0.0	0.5	0.0	1.3	0.0	-2.2	0.0	-0.3
The Goldman Sachs Group, Inc.	12.9	0.0	11.2	0.0	13.6	6.0	-18.0	0.8	1.5
HSBC North America Holdings Inc.	-0.8	0.0	3.9	0.0	2.0	0.0	-6.8	2.2	1.4
JPMorgan Chase & Co.	60.0	0.0	66.7	0.7	21.2	1.2	-29.9	2.6	1.2
Morgan Stanley	3.4	0.0	5.2	0.0	9.8	5.3	-16.9	2.2	-0.1
Northern Trust Corporation	3.0	0.0	1.9	0.1	0.0	0.0	1.0	0.6	0.1
The PNC Financial Services Group, Inc.	11.9	0.0	11.7	0.1	0.0	0.3	-0.2	2.0	1.2
State Street Corporation	3.4	0.0	1.2	0.1	1.2	0.0	0.9	1.3	0.0
TD Group US Holdings LLC	6.9	0.0	9.3	0.2	0.0	0.0	-2.6	-0.2	-0.4
UBS Americas Holding LLC	2.3	0.0	1.6	0.0	1.5	0.0	-0.8	0.0	0.0
U.S. Bancorp	18.2	0.0	17.6	0.0	0.0	0.0	0.5	2.6	0.2
Wells Fargo & Company	62.2	0.0	47.9	2.3	8.5	1.4	2.1	2.9	-2.9
18 participating firms	326.8	0.0	327.5	4.9	90.2	19.1	-114.9	37.3	-29.7

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 2019:Q1–2021:Q1 under the severely adverse scenario: 18 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]
Bank of America Corporation	43.6	2.5	0.9	13.3	4.8	14.8	1.6	5.8
The Bank of New York Mellon Corporation	1.4	0.2	0.0	0.1	0.2	0.0	0.3	0.6
Barclays US LLC	4.2	0.0	0.0	0.0	0.0	4.0	0.1	0.1
Capital One Financial Corporation	38.6	0.0	0.0	4.1	1.6	26.5	5.2	1.1
Citigroup Inc.	46.9	1.6	0.6	7.9	2.0	25.1	3.1	6.5
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
The Goldman Sachs Group, Inc.	9.7	0.7	0.0	3.0	1.0	0.0	1.0	4.0
HSBC North America Holdings Inc.	3.5	0.3	0.0	1.4	0.9	0.2	0.0	0.6
JPMorgan Chase & Co.	60.2	3.2	0.9	17.3	4.0	22.0	2.1	10.8
Morgan Stanley	4.1	0.4	0.0	0.9	0.9	0.0	0.1	1.9
Northern Trust Corporation	1.5	0.1	0.1	0.2	0.2	0.0	0.0	0.9
The PNC Financial Services Group, Inc.	10.9	0.3	0.3	5.3	2.4	0.9	0.9	0.7
State Street Corporation	1.0	0.0	0.0	0.3	0.1	0.0	0.0	0.6
TD Group US Holdings LLC	8.7	0.4	0.3	2.1	1.5	2.9	0.7	0.8
UBS Americas Holding LLC	1.3	0.2	0.0	0.5	0.0	0.0	0.2	0.3
U.S. Bancorp	16.3	0.9	0.6	5.2	3.0	3.9	1.5	1.1
Wells Fargo & Company	43.5	3.2	1.3	11.0	10.0	6.8	4.3	6.7
18 participating firms	295.8	14.1	5.1	72.7	32.9	107.2	21.1	42.7

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 2019:Q1–2021:Q1 under the severely adverse scenario: 18 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]
Bank of America Corporation	4.4	1.2	1.9	4.8	6.7	14.7	2.0	3.0
The Bank of New York Mellon Corporation	2.5	1.7	8.7	3.2	7.0	0.0	9.9	1.6
Barclays US LLC	10.3	0.0	0.0	22.6	6.3	15.1	13.7	0.7
Capital One Financial Corporation	15.1	2.2	5.1	11.8	5.3	23.0	9.1	6.3
Citigroup Inc.	6.6	2.1	4.3	4.4	8.5	15.2	10.5	3.0
Credit Suisse Holdings (USA), Inc.	0.6	0.0	0.0	0.0	0.0	0.0	13.7	0.6
DB USA Corporation	3.6	2.3	5.4	1.0	9.5	0.0	7.1	1.9
The Goldman Sachs Group, Inc.	8.9	22.9	3.6	13.1	14.2	5.6	14.0	5.8
HSBC North America Holdings Inc.	5.1	1.8	3.0	5.4	8.3	16.4	9.2	5.5
JPMorgan Chase & Co.	5.9	1.3	2.4	9.6	3.4	15.0	3.4	4.8
Morgan Stanley	3.2	1.4	3.6	8.6	7.6	0.0	0.6	3.1
Northern Trust Corporation	4.7	1.5	6.1	5.5	6.1	0.0	13.7	4.9
The PNC Financial Services Group, Inc.	4.7	1.2	1.5	6.0	7.0	16.3	3.7	2.3
State Street Corporation	3.8	0.0	0.0	6.9	6.2	0.0	0.6	3.0
TD Group US Holdings LLC	5.5	1.6	3.9	6.0	5.3	20.2	2.9	3.2
UBS Americas Holding LLC	2.2	1.7	0.0	8.5	5.5	16.4	0.7	3.1
U.S. Bancorp	5.6	1.4	3.9	6.3	8.2	16.4	3.6	4.6
Wells Fargo & Company	4.5	1.1	2.8	5.6	7.7	17.2	5.8	3.4
18 participating firms	5.7	1.4	2.6	6.3	6.4	16.8	4.7	3.6

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

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

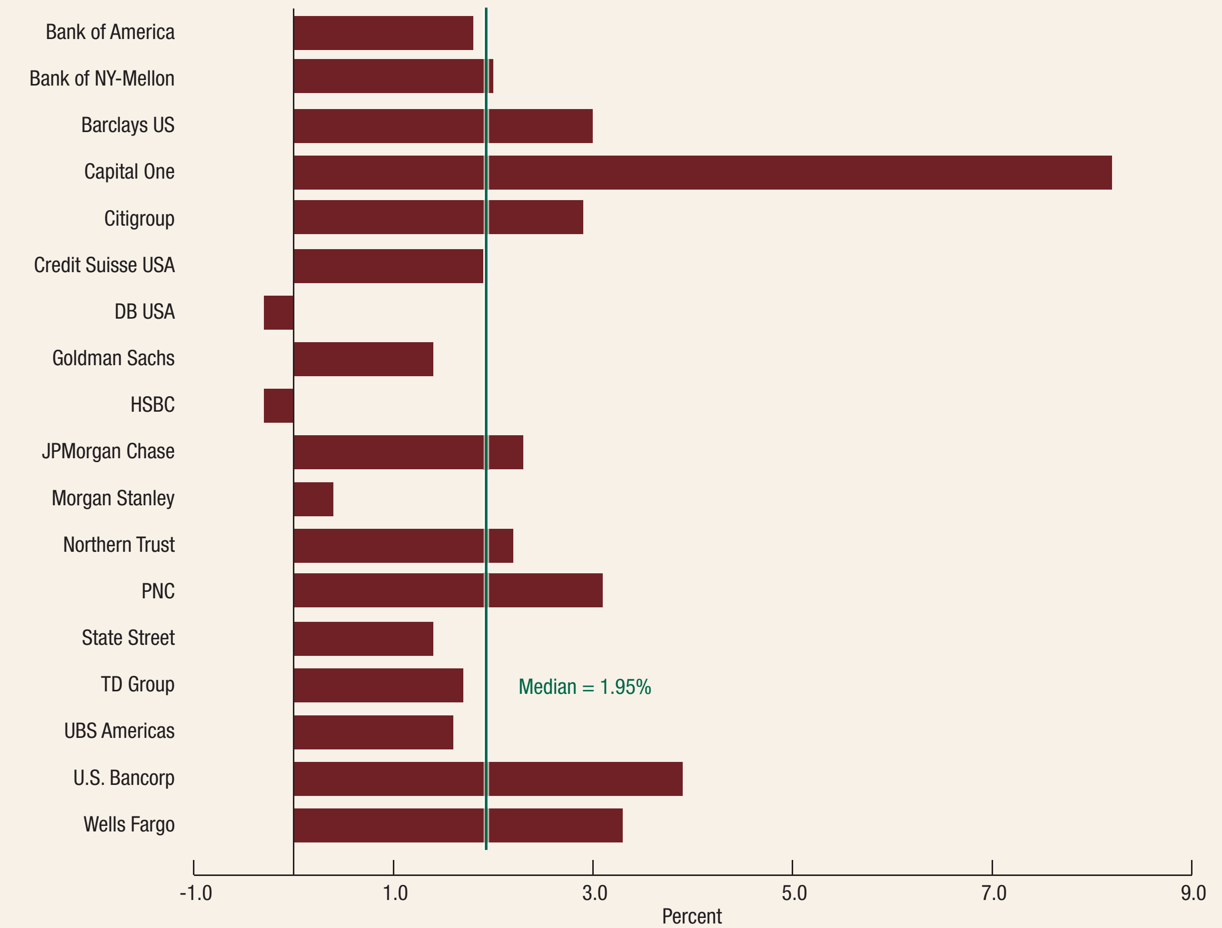
[2] Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.

[3] Other consumer loans include student loans and automobile loans.

[4] Other loans include international real estate loans.

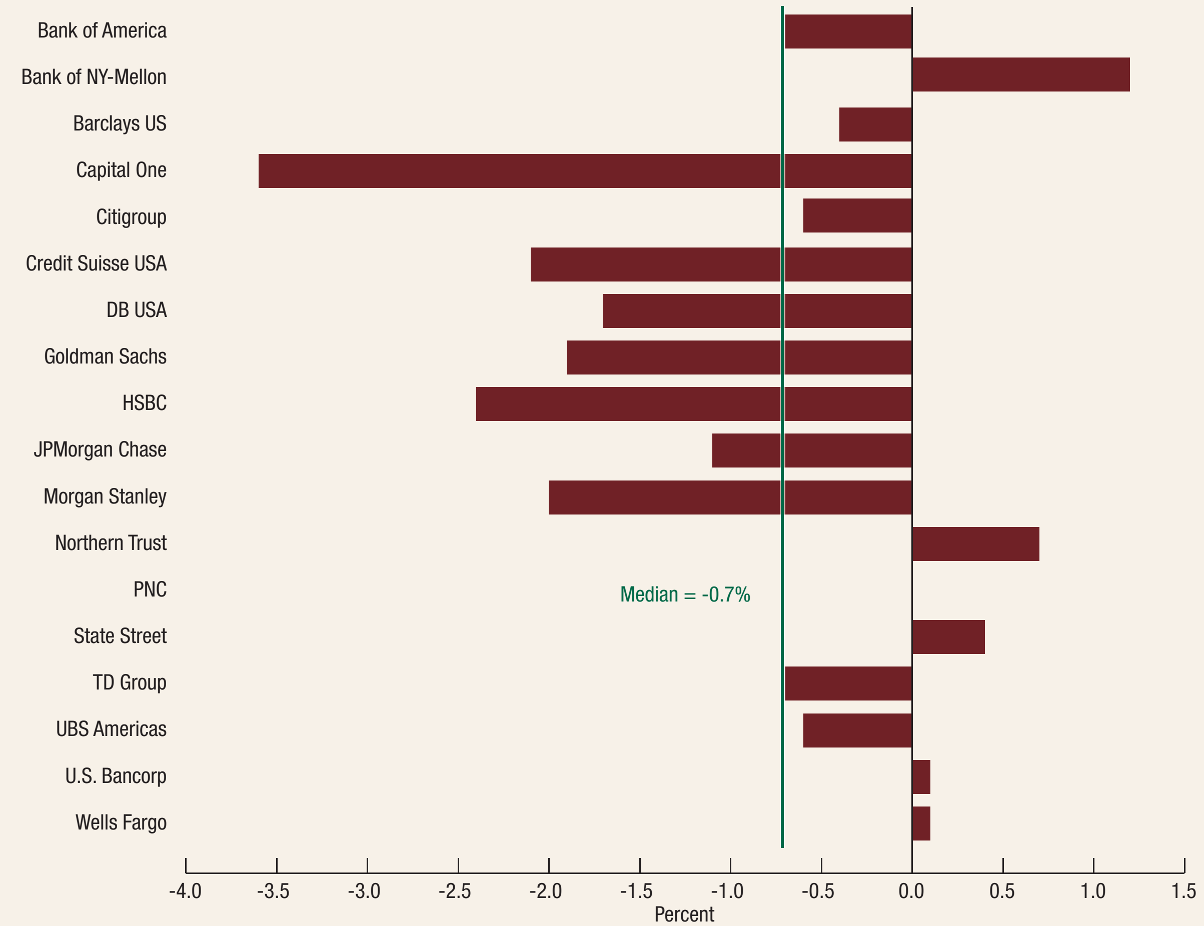
Source: Federal Reserve estimates in the severely adverse scenario.

Figure 15. PPNR rates in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1–2021:Q1 as a percent of average assets.

Figure 16. Pre-tax net income rates in the severely adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average assets.

Adverse Scenario

Stressed Capital Ratios and Risk-Weighted Assets

The adverse scenario projections suggest moderate declines in aggregate capital ratios for the 18 firms. The aggregate CET1 ratio is projected to fall 0.9 percentage points to its minimum over the planning horizon and to be 0.2 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 0.2 and 0.5 percentage points lower than at the start of the planning horizon, respectively. The tier 1 leverage ratio is projected to decline 0.1 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 18 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 $255 billion for the 18 firms over the nine-quarter planning horizon.

These losses include

- $194 billion in accrual loan losses;
- $2 billion in OTTI and other realized securities losses;
- $46 billion in losses from the global market shock and the largest counterparty default components; and
- $13 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 18 firms (table 11 and appendix B). 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.

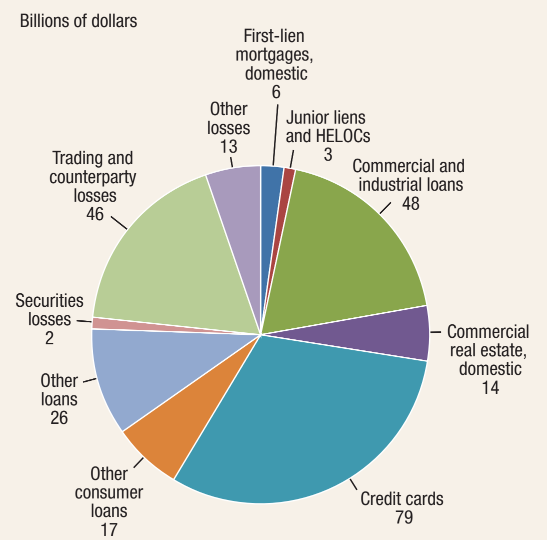
Loan Losses

As in the severely adverse scenario, the accrual loan portfolio is the largest source of losses in the adverse scenario, accounting for $194 billion of projected losses for the 18 firms. The lower peak unemployment rate and more moderate residential and CRE 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 18 firms is 3.7 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 19 and C.8 to C.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 11 firms with large trading and private-equity exposures and losses from the counterparty default component at the 13 firms with sub-

Figure 17. Projected losses in the adverse scenario



Note: The projected losses are not comparable to DFAST 2018. There were 35 participating firms in DFAST 2018 and 18 participating firms in DFAST 2019.

stantial trading, processing, or custodial operations equal $46 billion under the adverse scenario. These losses are more 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 $0.3 billion and $12 billion across the 13 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 $387 billion for the 18 firms under the adverse scenario, equal to 2.8 percent of average projected assets for these firms. Projected PPNR is higher than under the severely adverse scenario due to a steeper yield curve and less severe economic and financial market conditions, resulting in a smaller reduction in noninterest income and operational risk losses. Projected ratios of PPNR to assets vary significantly across the 18 firms (see figure 20).

In the aggregate, the 18 firms are projected to have cumulative pre-tax net income of $128 billion over the nine-quarter planning horizon under the adverse scenario. Fourteen of the firms are projected to have positive cumulative pre-tax net income, and 14 firms experience at least one quarter of negative pre-tax net income during the planning horizon. The $198 billion in total provisions reported in table 8 includes $194 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 0.9 percent. Projected nine-quarter return on assets under the adverse scenario ranges between −1 and 2 percent for the 18 firms (see figure 21).

Results reflect $41 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, −$26 billion in AOCI is included in post-stress regulatory capital as of the first quarter of 2021.

Table 8. 18 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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.3	12.1	11.4
Tier 1 capital ratio	14.0	13.8	13.0
Total capital ratio	16.4	15.9	15.5
Tier 1 leverage ratio	8.6	8.5	8.1
Supplementary leverage ratio	6.9	6.8	6.5

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	193.6	3.7
First-lien mortgages, domestic	6.3	0.6
Junior liens and HELOCs, domestic	2.8	1.5
Commercial and industrial[2]	47.7	4.1
Commercial real estate, domestic	14.1	2.7
Credit cards	79.3	12.3
Other consumer[3]	17.0	3.8
Other loans[4]	26.4	2.2

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

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

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	8,203.8	8,540.4

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	386.9	2.8
equals		
Net interest income	613.7	4.4
Noninterest income	646.9	4.6
less		
Noninterest expense[2]	873.8	6.2
Other revenue[3]	0.0	
less		
Provisions	197.6	
Realized losses/gains on securities (AFS/HTM)	2.4	
Trading and counterparty losses[4]	46.0	
Other losses/gains[5]	13.3	
equals		
Net income before taxes	127.7	0.9
Memo items		
Other comprehensive income[6]	41.0	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-66.9	-26.0

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

2 Noninterest expense 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).

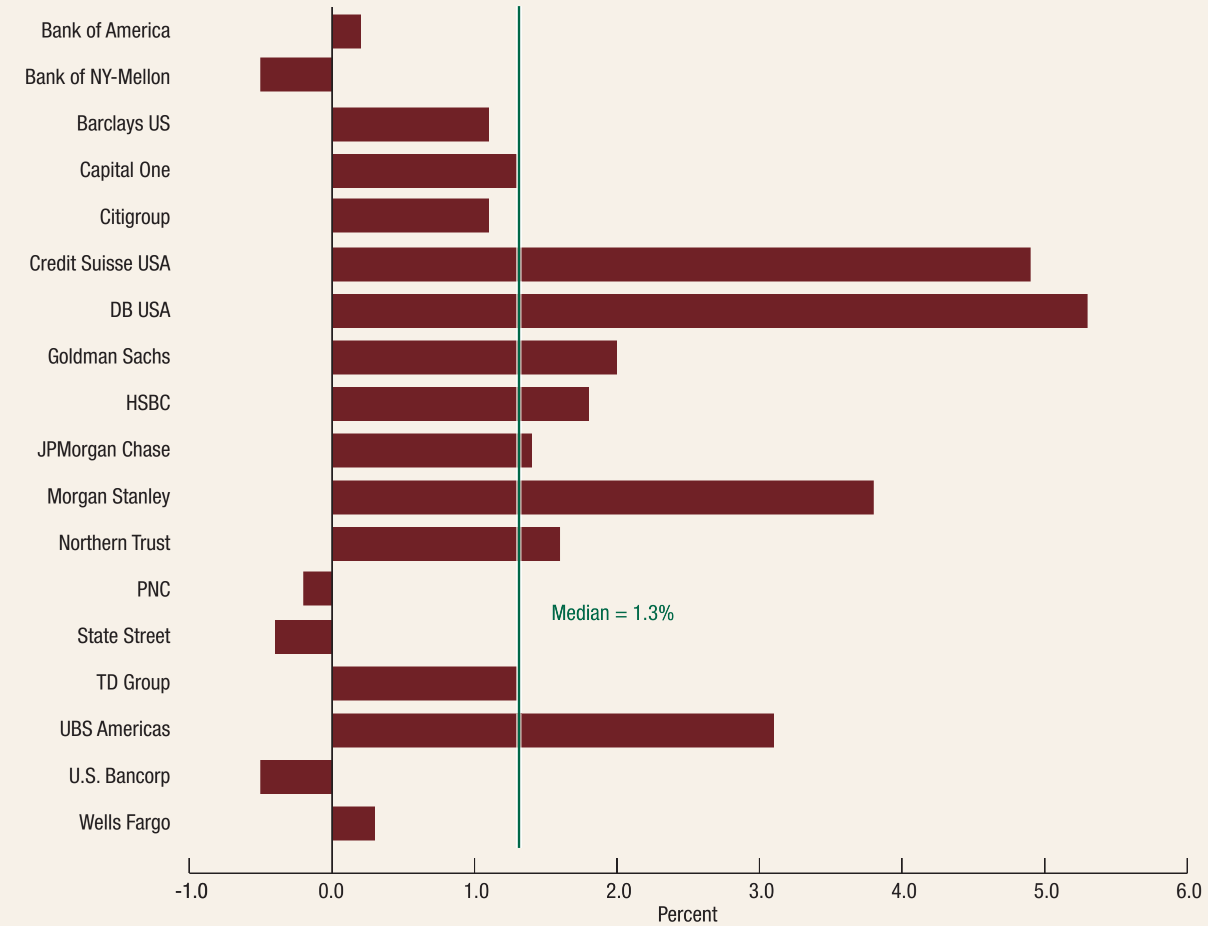
Table 9. Projected minimum common equity tier 1 ratio under the adverse scenario, 2019:Q1–2021:Q1
18 participating firms
Percent

Firm	Stressed ratios with DFA stress testing capital action assumptions
Bank of America Corporation	11.5
The Bank of New York Mellon Corporation	12.2
Barclays US LLC	13.5
Capital One Financial Corporation	9.9
Citigroup Inc.	10.8
Credit Suisse Holdings (USA), Inc.	20.9
DB USA Corporation	17.6
The Goldman Sachs Group, Inc.	11.4
HSBC North America Holdings Inc.	10.9
JPMorgan Chase & Co.	10.6
Morgan Stanley	13.1
Northern Trust Corporation	11.3
The PNC Financial Services Group, Inc.	9.9
State Street Corporation	12.1
TD Group US Holdings LLC	14.9
UBS Americas Holding LLC	18.6
U.S. Bancorp	9.6
Wells Fargo & Company	11.4

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratio presented is for the period 2019:Q1 to 2021: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.

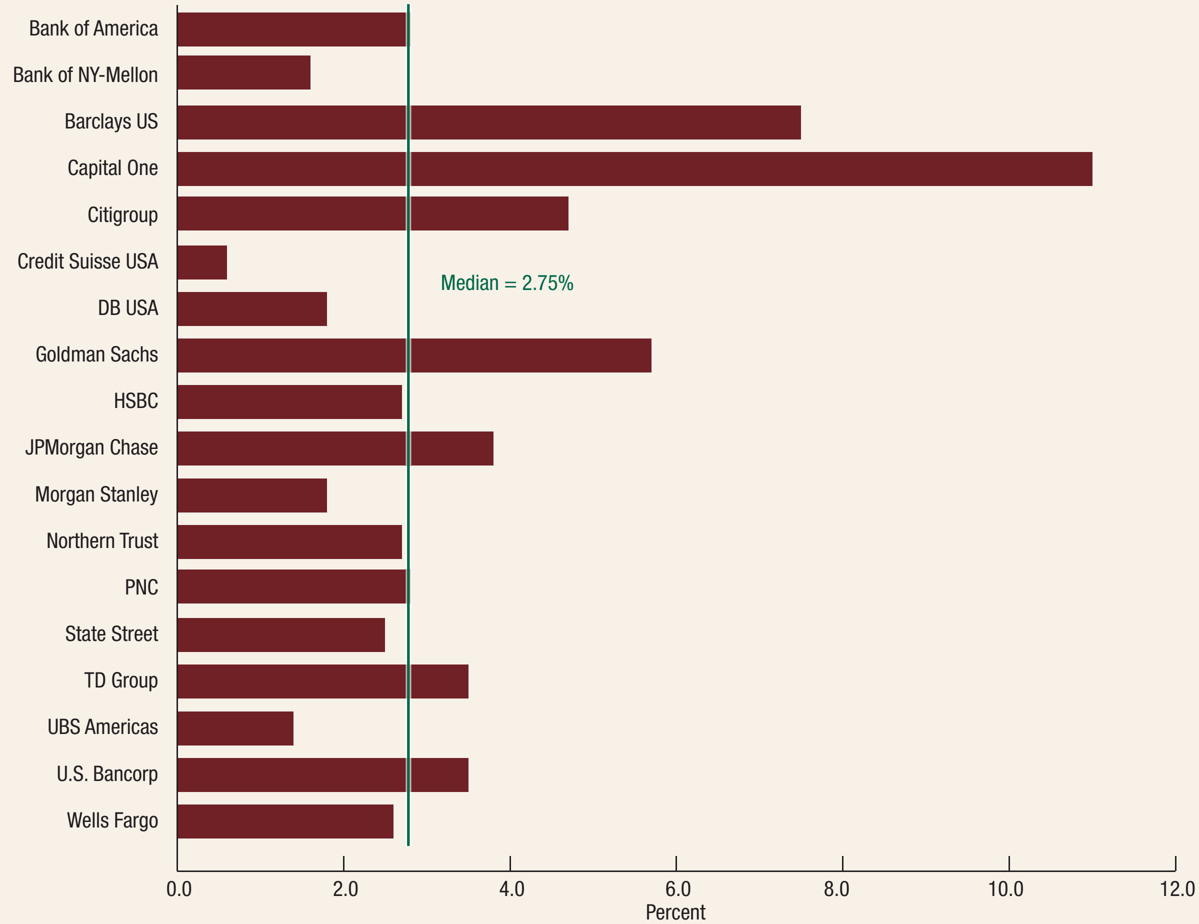
Source: Federal Reserve estimates in the adverse scenario.

Figure 18. Change from 2018:Q4 to minimum CET1 ratio in the adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of risk-weighted assets.

Figure 19. Total loan loss rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Table 10. Capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1 under the adverse scenario: 18 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 2018:Q4	Ending	Minimum	Actual 2018:Q4	Ending	Minimum	Actual 2018:Q4	Ending	Minimum	Actual 2018:Q4	Ending	Minimum	Actual 2018:Q4	Ending	Minimum
Bank of America Corporation	11.6	11.9	11.5	13.2	13.4	12.9	15.4	15.3	15.3	8.4	8.5	8.3	6.8	6.9	6.7
The Bank of New York Mellon Corporation	11.7	13.9	12.2	14.1	16.1	14.5	15.1	17.2	15.5	6.6	7.5	6.8	6.0	6.9	6.3
Barclays US LLC	14.5	14.9	13.5	17.6	17.8	16.4	21.0	20.8	20.0	8.9	9.0	8.4	7.3	7.3	6.8
Capital One Financial Corporation	11.2	10.3	9.9	12.7	11.7	11.3	15.1	13.8	13.6	10.7	10.3	10.1	9.0	8.7	8.5
Citigroup Inc.	11.9	12.2	10.8	13.5	13.7	12.3	16.6	16.3	15.4	8.3	8.5	7.7	6.4	6.5	5.9
Credit Suisse Holdings (USA), Inc.	25.8	24.7	20.9	26.5	25.5	21.7	26.6	25.5	21.8	12.9	11.4	10.0	11.3	10.0	8.7
DB USA Corporation	22.9	17.8	17.6	34.4	28.7	28.6	34.4	28.9	28.8	9.2	7.8	7.7	8.4	7.1	7.1
The Goldman Sachs Group, Inc.	13.3	13.3	11.4	15.3	15.2	13.2	18.0	17.7	16.0	8.9	8.8	7.8	6.2	6.2	5.5
HSBC North America Holdings Inc.	12.6	10.9	10.9	14.2	12.5	12.5	18.0	16.2	16.2	7.5	6.4	6.4	5.6	4.7	4.7
JPMorgan Chase & Co.	12.0	10.9	10.6	13.7	12.6	12.3	15.5	14.2	14.1	8.1	7.5	7.4	6.4	5.9	5.9
Morgan Stanley	16.9	14.5	13.1	19.2	16.8	15.4	21.8	18.8	17.7	8.4	7.2	6.8	6.5	5.6	5.3
Northern Trust Corporation	12.9	13.7	11.3	14.1	14.9	12.6	16.1	16.7	14.5	8.0	8.4	7.1	7.0	7.4	6.3
The PNC Financial Services Group, Inc.	9.6	10.3	9.9	10.8	11.4	11.0	13.0	13.3	13.1	9.4	9.9	9.7	7.8	8.3	8.1
State Street Corporation	11.7	12.5	12.1	15.5	16.1	15.8	16.3	16.7	16.6	7.2	7.5	7.4	6.3	6.5	6.5
TD Group US Holdings LLC	16.3	15.5	14.9	16.3	15.5	14.9	17.3	16.4	16.1	9.2	8.8	8.6	8.3	7.9	7.7
UBS Americas Holding LLC	21.7	19.9	18.6	25.7	23.8	22.6	27.0	25.5	24.1	11.3	10.4	9.9	n/a	n/a	n/a
U.S. Bancorp	9.1	10.0	9.6	10.7	11.5	11.2	12.6	12.9	12.9	9.0	9.8	9.6	7.2	7.8	7.6
Wells Fargo & Company	11.7	12.3	11.4	13.5	14.0	13.1	16.6	16.6	16.2	9.1	9.4	8.9	7.7	8.0	7.6
18 participating firms	12.3	12.1	11.4	14.0	13.8	13.0	16.4	15.9	15.5	8.6	8.5	8.1	6.9	6.8	6.5

Note: The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021: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 2021:Q1 under the adverse scenario: 18 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] (2021:Q1)
Bank of America Corporation	54.3	0.0	27.3	0.1	5.3	1.9	19.6	11.6	0.4
The Bank of New York Mellon Corporation	8.0	0.0	1.1	0.1	0.8	0.0	6.0	1.6	-1.5
Barclays US LLC	5.2	0.0	3.0	0.0	0.3	0.0	1.9	0.0	0.0
Capital One Financial Corporation	31.7	0.0	31.2	0.0	0.0	0.0	0.5	1.1	0.2
Citigroup Inc.	64.1	0.0	32.3	0.4	6.9	1.2	23.2	5.6	-30.8
Credit Suisse Holdings (USA), Inc.	2.8	0.0	0.1	0.0	3.1	0.1	-0.5	0.0	-0.1
DB USA Corporation	0.1	0.0	0.2	0.0	0.7	0.0	-0.9	0.0	-0.3
The Goldman Sachs Group, Inc.	20.6	0.0	7.0	0.0	5.1	4.6	3.9	0.7	1.4
HSBC North America Holdings Inc.	0.1	0.0	1.9	0.0	1.0	0.0	-2.8	1.9	1.2
JPMorgan Chase & Co.	72.8	0.0	39.9	0.4	12.1	0.9	19.5	4.0	2.6
Morgan Stanley	8.9	0.0	2.9	0.0	5.2	3.6	-2.7	2.1	-0.2
Northern Trust Corporation	2.8	0.0	1.1	0.1	0.0	0.0	1.6	0.6	0.1
The PNC Financial Services Group, Inc.	13.7	0.0	6.3	0.1	0.0	0.2	7.2	2.1	1.3
State Street Corporation	3.6	0.0	0.8	0.1	0.8	0.0	1.9	1.4	0.0
TD Group US Holdings LLC	6.8	0.0	5.5	0.2	0.0	0.0	1.2	0.2	0.0
UBS Americas Holding LLC	2.8	0.0	1.1	0.0	0.6	0.0	1.1	0.0	0.0
U.S. Bancorp	19.6	0.0	10.1	0.0	0.0	0.0	9.4	2.5	0.0
Wells Fargo & Company	69.2	0.0	25.6	1.0	4.1	1.0	37.5	5.5	-0.3
18 participating firms	386.9	0.0	197.6	2.4	46.0	13.3	127.7	41.0	-26.0

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 2019:Q1–2021:Q1 under the adverse scenario: 18 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]
Bank of America Corporation	27.3	1.0	0.4	8.4	2.1	10.7	1.2	3.6
The Bank of New York Mellon Corporation	0.9	0.1	0.0	0.1	0.1	0.0	0.3	0.4
Barclays US LLC	3.1	0.0	0.0	0.0	0.0	3.0	0.1	0.1
Capital One Financial Corporation	28.3	0.0	0.0	2.8	0.7	20.0	4.2	0.7
Citigroup Inc.	33.1	0.8	0.3	5.6	0.8	18.9	2.7	4.1
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	0.0
The Goldman Sachs Group, Inc.	6.2	0.5	0.0	1.9	0.4	0.0	0.9	2.5
HSBC North America Holdings Inc.	1.9	0.1	0.0	0.9	0.4	0.1	0.0	0.3
JPMorgan Chase & Co.	39.3	1.4	0.6	11.4	1.9	15.8	1.6	6.6
Morgan Stanley	2.4	0.2	0.0	0.6	0.3	0.0	0.1	1.2
Northern Trust Corporation	0.9	0.0	0.0	0.2	0.1	0.0	0.0	0.5
The PNC Financial Services Group, Inc.	6.5	0.2	0.1	3.4	1.0	0.6	0.7	0.5
State Street Corporation	0.7	0.0	0.0	0.2	0.0	0.0	0.0	0.4
TD Group US Holdings LLC	5.7	0.3	0.2	1.3	0.7	2.2	0.5	0.5
UBS Americas Holding LLC	0.8	0.1	0.0	0.3	0.0	0.0	0.2	0.2
U.S. Bancorp	10.4	0.4	0.4	3.5	1.4	2.9	1.1	0.7
Wells Fargo & Company	25.8	1.2	0.7	7.1	4.1	5.0	3.6	4.0
18 participating firms	193.6	6.3	2.8	47.7	14.1	79.3	17.0	26.4

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 2019:Q1–2021:Q1 under the adverse scenario: 18 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]
Bank of America Corporation	2.8	0.5	0.8	3.0	2.9	10.6	1.4	1.8
The Bank of New York Mellon Corporation	1.6	0.9	5.2	2.0	2.6	0.0	8.0	1.0
Barclays US LLC	7.5	0.0	0.0	18.5	2.4	11.0	11.0	0.5
Capital One Financial Corporation	11.0	1.1	3.4	7.9	2.2	17.2	7.2	3.6
Citigroup Inc.	4.7	1.0	2.4	3.1	3.5	11.3	8.9	1.9
Credit Suisse Holdings (USA), Inc.	0.6	0.0	0.0	0.0	0.0	0.0	11.0	0.5
DB USA Corporation	1.8	1.4	4.1	0.6	3.4	0.0	5.8	1.2
The Goldman Sachs Group, Inc.	5.7	19.0	2.7	8.3	5.7	4.0	12.0	3.6
HSBC North America Holdings Inc.	2.7	0.7	1.9	3.4	3.1	11.3	7.6	3.3
JPMorgan Chase & Co.	3.8	0.5	1.5	6.3	1.6	10.7	2.6	2.9
Morgan Stanley	1.8	0.7	2.7	5.3	2.8	0.0	0.6	1.9
Northern Trust Corporation	2.7	0.6	4.2	3.3	2.5	0.0	11.0	3.0
The PNC Financial Services Group, Inc.	2.8	0.7	0.6	3.8	2.9	11.3	3.0	1.4
State Street Corporation	2.5	0.0	0.0	4.1	2.3	0.0	0.6	2.1
TD Group US Holdings LLC	3.5	1.0	2.8	3.7	2.3	15.2	2.2	1.9
UBS Americas Holding LLC	1.4	0.8	0.0	5.2	2.2	11.3	0.6	2.0
U.S. Bancorp	3.5	0.6	2.6	4.2	3.7	12.0	2.6	3.0
Wells Fargo & Company	2.6	0.4	1.4	3.6	3.2	12.6	4.7	2.0
18 participating firms	3.7	0.6	1.5	4.1	2.7	12.3	3.8	2.2

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.

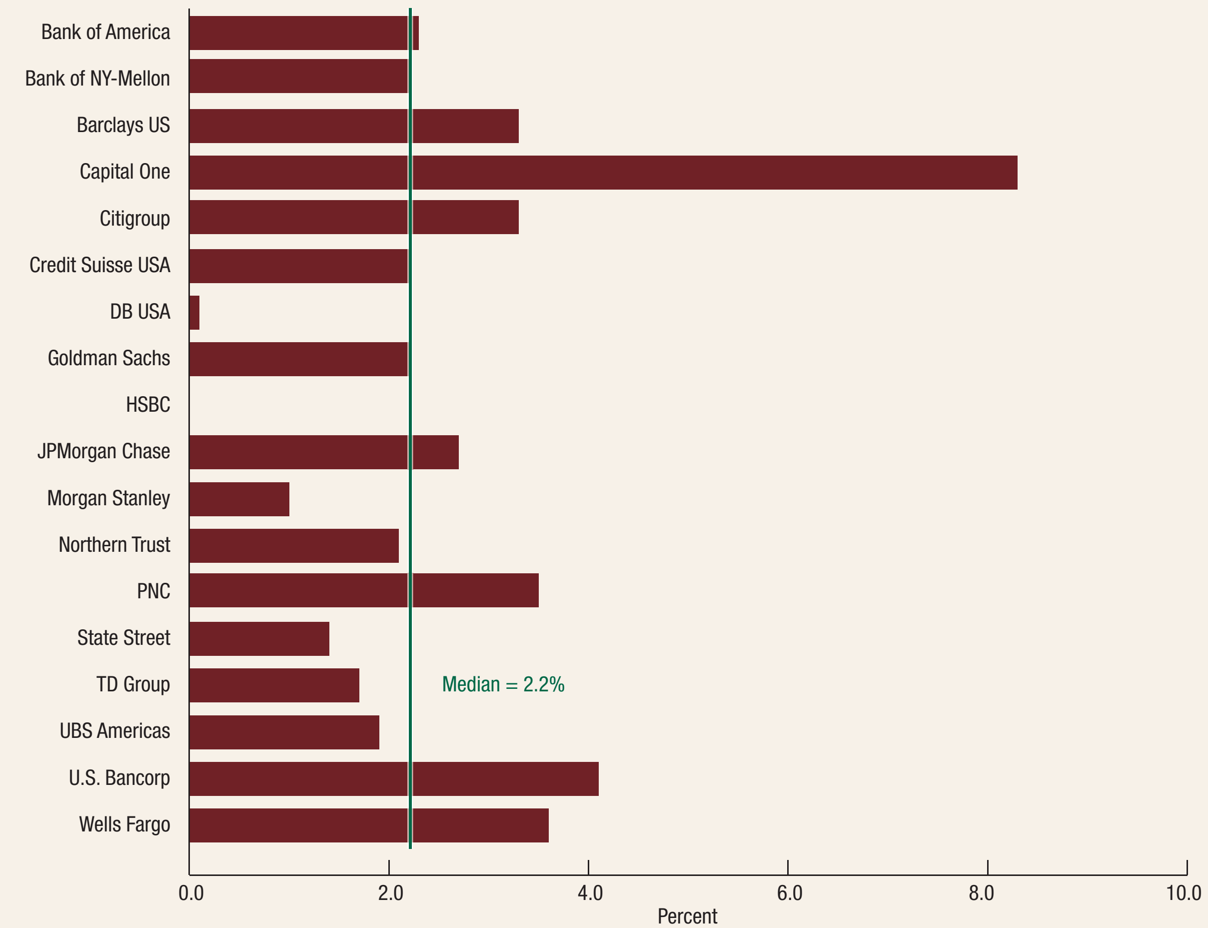
2 Commercial and industrial loans include small- and medium-enterprise loans and corporate cards.

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

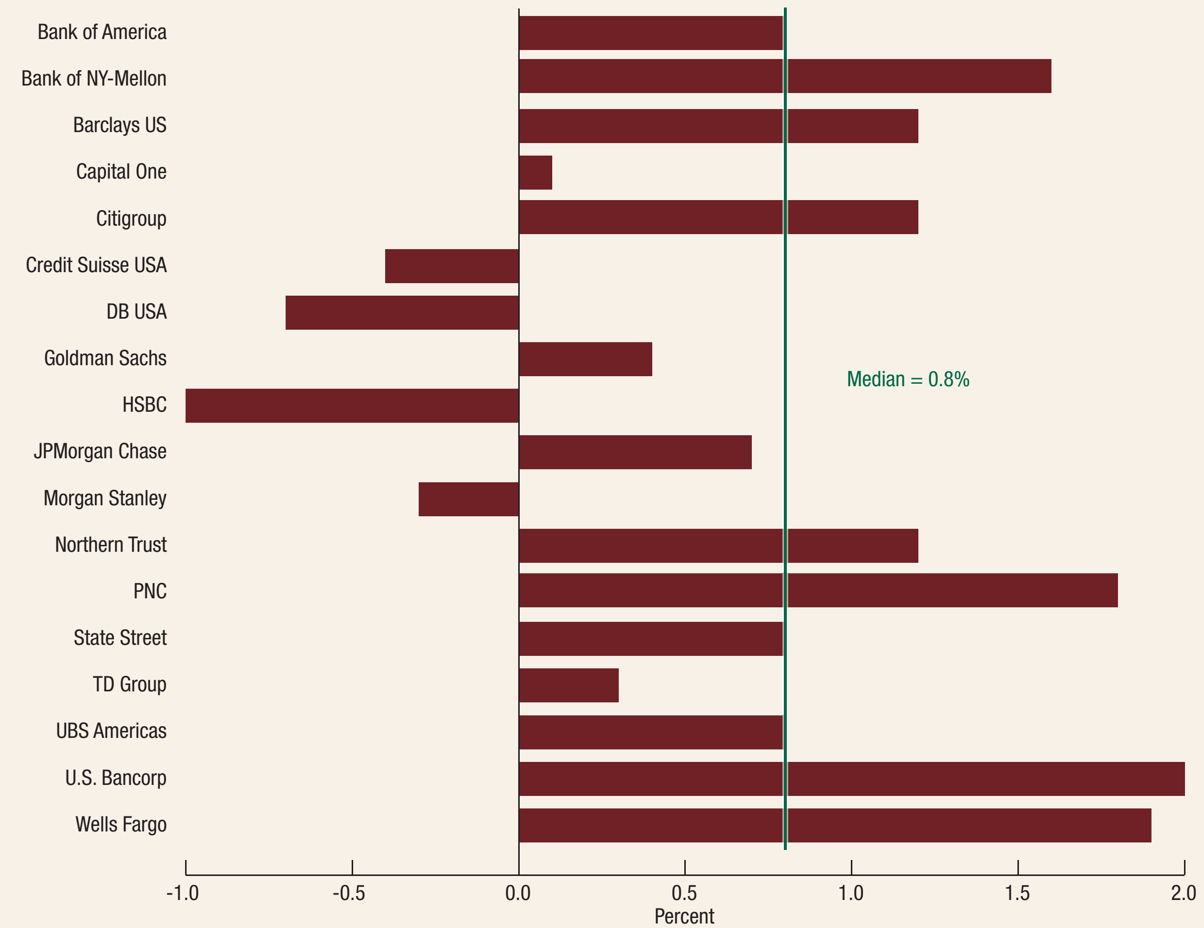
Source: Federal Reserve estimates in the adverse scenario.

Figure 20. PPNR rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average assets.

Figure 21. Pre-tax net income rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1-2021: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–Q4:2018

Percent, unless otherwise indicated

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q1 2000	1.5	4.2	7.9	11.5	4.0	4.0	5.5	6.6	6.7	8.2	8.3	8.7	14,296	102	126	27.0
Q2 2000	7.5	10.2	4.5	6.4	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	2.8	4.7	7.3	4.0	3.7	6.0	6.1	6.1	8.1	8.0	9.5	13,613	107	138	21.9
Q4 2000	2.5	4.7	1.4	3.7	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	1.3	3.7	6.5	4.2	3.9	4.8	4.9	5.3	7.4	7.0	8.6	10,646	112	143	32.8
Q2 2001	2.4	4.9	-0.7	1.2	4.4	2.8	3.7	4.9	5.5	7.5	7.1	7.3	11,407	114	142	34.7
Q3 2001	-1.6	-0.1	9.6	9.8	4.8	1.1	3.2	4.6	5.3	7.3	7.0	6.6	9,563	116	144	43.7
Q4 2001	1.1	2.4	-5.0	-4.7	5.5	-0.3	1.9	4.2	5.1	7.2	6.8	5.2	10,708	118	139	35.3
Q1 2002	3.5	4.9	9.3	10.1	5.7	1.3	1.7	4.5	5.4	7.6	7.0	4.8	10,776	120	140	26.1
Q2 2002	2.4	3.9	2.7	5.9	5.8	3.2	1.7	4.5	5.4	7.6	6.8	4.8	9,384	124	140	28.4
Q3 2002	1.8	3.7	-0.3	1.6	5.7	2.2	1.6	3.4	4.5	7.3	6.3	4.8	7,774	127	141	45.1
Q4 2002	0.6	2.9	2.4	4.3	5.9	2.4	1.3	3.1	4.3	7.0	6.1	4.5	8,343	129	144	42.6
Q1 2003	2.2	4.1	0.9	3.8	5.9	4.2	1.2	2.9	4.2	6.5	5.8	4.3	8,052	132	151	34.7
Q2 2003	3.5	4.7	5.0	5.1	6.1	-0.7	1.0	2.6	3.8	5.7	5.5	4.2	9,342	135	151	29.1
Q3 2003	7.0	9.3	6.9	9.6	6.1	3.0	0.9	3.1	4.4	6.0	6.0	4.0	9,650	139	149	22.7
Q4 2003	4.7	7.2	1.1	2.9	5.8	1.5	0.9	3.2	4.4	5.8	5.9	4.0	10,800	143	147	21.1
Q1 2004	2.2	5.2	1.9	5.3	5.7	3.4	0.9	3.0	4.1	5.5	5.6	4.0	11,039	148	153	21.6
Q2 2004	3.1	6.5	4.7	7.6	5.6	3.2	1.1	3.7	4.7	6.1	6.1	4.0	11,145	154	163	20.0
Q3 2004	3.8	6.6	2.6	4.7	5.4	2.6	1.5	3.5	4.4	5.8	5.9	4.4	10,894	159	175	19.3
Q4 2004	4.1	7.3	5.1	8.8	5.4	4.4	2.0	3.5	4.3	5.4	5.7	4.9	11,952	165	178	16.6
Q1 2005	4.5	7.9	-4.6	-2.4	5.3	2.0	2.5	3.9	4.4	5.4	5.8	5.4	11,637	172	179	14.7
Q2 2005	1.9	4.7	3.9	6.4	5.1	2.7	2.9	3.9	4.2	5.5	5.7	5.9	11,857	179	185	17.7
Q3 2005	3.6	7.4	1.2	5.6	5.0	6.2	3.4	4.0	4.3	5.5	5.8	6.4	12,283	185	190	14.2
Q4 2005	2.5	5.9	5.2	8.6	5.0	3.8	3.8	4.4	4.6	5.9	6.2	7.0	12,497	191	198	16.5
Q1 2006	5.4	8.4	8.0	10.2	4.7	2.1	4.4	4.6	4.7	6.0	6.2	7.4	13,122	194	203	14.6
Q2 2006	0.9	4.4	1.0	4.3	4.6	3.7	4.7	5.0	5.2	6.5	6.6	7.9	12,809	193	212	23.8
Q3 2006	0.6	3.5	1.0	4.0	4.6	3.8	4.9	4.8	5.0	6.4	6.6	8.3	13,323	192	220	18.6
Q4 2006	3.5	5.0	5.4	4.7	4.4	-1.6	4.9	4.6	4.7	6.1	6.2	8.3	14,216	191	222	12.7
Q1 2007	0.9	5.0	3.4	7.4	4.5	4.0	5.0	4.6	4.8	6.1	6.2	8.3	14,354	189	229	19.6
Q2 2007	2.3	5.0	1.0	4.3	4.5	4.6	4.7	4.7	4.9	6.3	6.4	8.3	15,163	184	239	18.9
Q3 2007	2.2	4.3	0.4	2.6	4.7	2.6	4.3	4.5	4.8	6.5	6.6	8.2	15,318	178	248	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	2.5	4.1	0.3	4.3	4.8	5.0	3.4	3.8	4.4	6.4	6.2	7.5	14,754	172	249	31.1
Q1 2008	-2.3	-0.8	1.1	4.6	5.0	4.4	2.1	2.8	3.9	6.5	5.9	6.2	13,284	165	235	32.2
Q2 2008	2.1	4.3	7.5	12.0	5.3	5.3	1.6	3.2	4.1	6.8	6.1	5.1	13,016	157	224	24.1
Q3 2008	-2.1	0.8	-8.1	-4.3	6.0	6.3	1.5	3.1	4.1	7.2	6.3	5.0	11,826	150	231	46.7
Q4 2008	-8.4	-7.2	3.5	-2.5	6.9	-8.9	0.3	2.2	3.7	9.4	5.9	4.1	9,057	142	219	80.9
Q1 2009	-4.4	-4.5	-1.7	-4.0	8.3	-2.7	0.2	1.9	3.2	9.0	5.1	3.3	8,044	138	209	56.7
Q2 2009	-0.6	-1.2	4.4	6.3	9.3	2.1	0.2	2.3	3.7	8.2	5.0	3.3	9,343	138	180	42.3
Q3 2009	1.5	1.9	-4.4	-1.8	9.6	3.5	0.2	2.5	3.8	6.8	5.2	3.3	10,813	139	160	31.3
Q4 2009	4.5	5.9	-0.1	3.0	9.9	3.2	0.1	2.3	3.7	6.1	4.9	3.3	11,385	139	159	30.7
Q1 2010	1.5	2.6	2.3	3.7	9.8	0.6	0.1	2.4	3.9	5.8	5.0	3.3	12,033	139	153	27.3
Q2 2010	3.7	5.7	6.8	7.2	9.6	-0.1	0.1	2.3	3.6	5.6	4.9	3.3	10,646	138	165	45.8
Q3 2010	3.0	4.2	2.9	3.6	9.5	1.2	0.2	1.6	2.9	5.1	4.4	3.3	11,814	136	167	32.9
Q4 2010	2.0	4.3	2.3	4.8	9.5	3.3	0.1	1.5	3.0	5.0	4.4	3.3	13,132	134	168	23.5
Q1 2011	-1.0	1.2	4.1	7.8	9.0	4.3	0.1	2.1	3.5	5.4	4.8	3.3	13,909	133	171	29.4
Q2 2011	2.9	5.6	-0.9	3.1	9.1	4.6	0.0	1.8	3.3	5.1	4.7	3.3	13,844	133	173	22.7
Q3 2011	-0.1	2.5	1.8	3.7	9.0	2.6	0.0	1.1	2.5	4.9	4.3	3.3	11,677	133	170	48.0
Q4 2011	4.7	5.4	1.2	2.6	8.6	1.8	0.0	1.0	2.1	5.0	4.0	3.3	13,019	133	176	45.5
Q1 2012	3.2	5.8	7.7	10.7	8.3	2.3	0.1	0.9	2.1	4.7	3.9	3.3	14,628	135	179	23.0
Q2 2012	1.7	3.3	3.7	4.7	8.2	0.8	0.1	0.8	1.8	4.5	3.8	3.3	14,100	138	180	26.7
Q3 2012	0.5	2.6	-2.8	-1.7	8.0	1.8	0.1	0.7	1.6	4.2	3.6	3.3	14,895	141	186	20.5
Q4 2012	0.5	2.5	11.5	14.1	7.8	2.7	0.1	0.7	1.7	3.9	3.4	3.3	14,835	144	185	22.7
Q1 2013	3.6	5.3	-15.1	-13.9	7.7	1.6	0.1	0.8	1.9	4.0	3.5	3.3	16,396	147	188	19.0
Q2 2013	0.5	1.7	3.0	3.3	7.5	-0.4	0.1	0.9	2.0	4.1	3.7	3.3	16,771	151	197	20.5
Q3 2013	3.2	5.2	1.7	3.4	7.2	2.2	0.0	1.5	2.7	4.9	4.4	3.3	17,718	155	207	17.0
Q4 2013	3.2	5.7	1.6	3.3	6.9	1.5	0.1	1.4	2.8	4.8	4.3	3.3	19,413	158	212	20.3
Q1 2014	-1.0	0.5	6.2	8.3	6.7	2.5	0.0	1.6	2.8	4.6	4.4	3.3	19,711	160	209	21.4
Q2 2014	5.1	7.8	4.9	7.0	6.2	2.1	0.0	1.7	2.7	4.3	4.2	3.3	20,569	161	216	17.0
Q3 2014	4.9	6.9	4.5	5.7	6.1	1.1	0.0	1.7	2.5	4.2	4.1	3.3	20,459	164	220	17.0
Q4 2014	1.9	2.7	5.0	4.6	5.7	-0.9	0.0	1.6	2.3	4.2	4.0	3.3	21,425	166	229	26.3
Q1 2015	3.3	3.0	5.0	3.2	5.5	-2.6	0.0	1.5	2.0	4.0	3.7	3.3	21,708	168	243	22.4
Q2 2015	3.3	5.7	3.1	5.1	5.4	2.7	0.0	1.5	2.2	4.2	3.8	3.3	21,631	170	245	18.9
Q3 2015	1.0	2.4	3.4	4.7	5.1	1.5	0.0	1.6	2.3	4.5	4.0	3.3	19,959	173	250	40.7
Q4 2015	0.4	0.5	0.9	0.7	5.0	0.1	0.1	1.6	2.2	4.6	3.9	3.3	21,101	175	250	24.4
Q1 2016	1.5	1.2	2.7	3.0	4.9	-0.1	0.3	1.4	2.0	4.6	3.7	3.5	21,179	177	242	28.1
Q2 2016	2.3	5.1	-0.6	1.7	4.9	2.7	0.3	1.3	1.8	4.1	3.6	3.5	21,622	179	245	25.8
Q3 2016	1.9	3.5	1.5	3.3	4.9	1.8	0.3	1.2	1.6	3.7	3.4	3.5	22,469	182	262	18.1
Q4 2016	1.8	3.9	2.7	4.7	4.8	2.7	0.4	1.7	2.2	4.1	3.8	3.5	23,277	185	265	22.5
Q1 2017	1.8	3.9	4.5	6.6	4.6	3.0	0.6	2.0	2.5	4.2	4.2	3.8	24,508	187	260	13.1
Q2 2017	3.0	4.2	2.2	3.0	4.4	0.1	0.9	1.8	2.3	4.0	4.0	4.0	25,125	190	269	16.0
Q3 2017	2.8	4.8	2.2	3.9	4.3	2.1	1.0	1.8	2.3	3.9	3.9	4.3	26,149	193	274	16.0
Q4 2017	2.3	5.1	2.3	5.1	4.1	3.3	1.2	2.1	2.4	3.9	3.9	4.3	27,673	196	283	13.1
Q1 2018	2.2	4.3	4.4	7.0	4.1	3.5	1.6	2.5	2.8	4.2	4.3	4.5	27,383	199	277	37.3
Q2 2018	4.2	7.6	1.8	3.8	3.9	1.7	1.8	2.8	2.9	4.6	4.5	4.8	28,314	202	293	23.6
Q3 2018	3.4	4.9	2.4	4.0	3.8	2.0	2.0	2.8	2.9	4.6	4.6	5.0	30,190	204	286	16.1
Q4 2018	2.7	4.6	2.7	4.4	3.8	1.8	2.3	2.9	3.0	5.0	4.8	5.3	25,725	205	287	36.1

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–Q4:2018
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	4.5	2.6	0.957	7.0	1.5	100.0	7.7	-0.5	102.7	3.4	0.5	1.592
Q2 2000	3.7	0.9	0.955	7.1	-0.3	100.7	0.9	-1.1	106.1	2.5	0.4	1.513
Q3 2000	2.1	3.4	0.884	8.1	2.2	101.5	0.3	-0.3	107.9	1.1	1.0	1.479
Q4 2000	3.3	2.8	0.939	3.0	2.4	105.1	4.0	-1.1	114.4	0.7	1.9	1.496
Q1 2001	3.3	1.2	0.879	4.9	1.7	106.0	2.1	0.7	125.5	5.4	0.1	1.419
Q2 2001	0.7	4.0	0.847	5.5	2.1	106.1	-1.8	-2.3	124.7	3.2	3.1	1.408
Q3 2001	0.3	1.4	0.910	4.7	1.3	106.4	-4.0	-0.5	119.2	3.0	1.0	1.469
Q4 2001	0.8	1.7	0.890	8.5	0.0	106.9	-1.2	-1.9	131.0	1.8	0.0	1.454
Q1 2002	0.5	3.1	0.872	7.7	0.5	107.3	0.6	-1.1	132.7	1.9	1.9	1.425
Q2 2002	2.0	2.0	0.986	8.1	1.1	104.8	3.1	0.1	119.9	2.7	0.9	1.525
Q3 2002	1.6	1.6	0.988	7.2	1.5	105.5	1.3	-0.4	121.7	3.1	1.4	1.570
Q4 2002	0.6	2.3	1.049	6.5	0.7	104.5	1.1	-0.8	118.8	3.6	1.9	1.610
Q1 2003	-1.0	3.3	1.090	6.7	3.6	105.5	0.2	0.0	118.1	2.7	1.6	1.579
Q2 2003	0.2	0.5	1.150	2.1	1.1	104.0	2.6	0.3	119.9	3.8	0.3	1.653
Q3 2003	2.0	2.1	1.165	14.3	0.1	102.6	1.6	-0.5	111.4	4.2	1.7	1.662
Q4 2003	3.1	2.3	1.260	13.0	5.5	103.4	4.5	-1.0	107.1	3.3	1.6	1.784
Q1 2004	2.3	2.2	1.229	5.6	4.0	101.4	3.1	0.8	104.2	2.2	1.3	1.840
Q2 2004	2.2	2.6	1.218	6.9	4.1	102.8	-0.3	-0.4	109.4	1.5	1.0	1.813
Q3 2004	1.2	2.0	1.242	8.2	4.1	102.7	2.6	-0.1	110.2	0.7	1.1	1.809
Q4 2004	1.5	2.4	1.354	6.4	0.8	98.9	-0.8	1.9	102.7	1.0	2.4	1.916
Q1 2005	0.6	1.4	1.297	10.5	2.9	98.6	1.9	-1.2	107.2	3.8	2.5	1.889
Q2 2005	2.8	2.2	1.210	8.6	1.5	98.9	2.7	-1.0	110.9	4.5	1.9	1.793
Q3 2005	3.0	3.1	1.206	9.3	2.4	98.6	4.0	-1.0	113.3	4.8	2.7	1.770
Q4 2005	2.5	2.4	1.184	11.7	1.6	98.1	0.7	0.1	117.9	6.1	1.4	1.719
Q1 2006	3.7	1.7	1.214	11.0	2.4	96.8	0.6	1.2	117.5	1.1	1.9	1.739
Q2 2006	4.3	2.5	1.278	7.0	3.2	96.7	1.1	0.4	114.5	0.9	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	11.3	3.6	94.6	5.3	-0.5	119.0	1.4	2.6	1.959
Q1 2007	3.0	2.3	1.337	13.9	3.6	94.0	2.9	-0.7	117.6	4.0	2.6	1.969
Q2 2007	2.6	2.3	1.352	10.5	4.9	91.9	0.6	0.4	123.4	2.9	1.7	2.006
Q3 2007	1.9	2.1	1.422	8.7	7.6	90.6	-2.0	0.3	115.0	3.4	0.2	2.039
Q4 2007	2.1	4.8	1.460	12.8	5.9	89.4	1.9	2.2	111.7	3.4	4.0	1.984
Q1 2008	2.2	4.2	1.581	7.2	8.1	88.0	1.3	1.2	99.9	1.4	3.7	1.986
Q2 2008	-1.5	3.2	1.575	6.0	6.3	88.7	-1.8	1.8	106.2	-2.9	5.7	1.991
Q3 2008	-2.2	3.2	1.408	3.1	3.0	91.5	-4.9	3.4	105.9	-6.4	5.8	1.780
Q4 2008	-6.6	-1.4	1.392	0.3	-1.1	92.2	-9.4	-2.1	90.8	-8.4	0.5	1.462
Q1 2009	-11.4	-1.1	1.326	4.4	-1.4	94.2	-17.8	-3.6	99.2	-6.5	-0.1	1.430
Q2 2009	-1.0	0.0	1.402	15.1	2.3	92.2	8.6	-1.6	96.4	-0.8	2.1	1.645
Q3 2009	1.3	1.1	1.463	12.8	4.1	91.3	0.2	-1.4	89.5	0.6	3.5	1.600
Q4 2009	2.2	1.6	1.433	9.2	5.0	90.6	5.7	-1.5	93.1	1.4	3.0	1.617
Q1 2010	1.6	1.8	1.353	9.8	4.4	89.8	3.4	1.0	93.4	1.8	4.0	1.519
Q2 2010	3.8	2.0	1.229	9.7	3.4	91.0	5.5	-1.4	88.5	3.5	3.2	1.495
Q3 2010	1.9	1.6	1.360	8.8	4.2	88.4	7.6	-1.9	83.5	2.3	2.3	1.573
Q4 2010	2.5	2.6	1.327	9.2	7.5	87.4	-3.2	1.3	81.7	0.5	4.0	1.539
Q1 2011	3.3	3.6	1.418	9.8	6.2	86.4	-5.6	-0.1	82.8	3.0	6.7	1.605
Q2 2011	0.1	3.2	1.452	6.4	5.4	85.3	-2.6	-0.7	80.6	0.6	4.7	1.607
Q3 2011	0.0	1.4	1.345	5.5	5.3	87.3	10.5	0.3	77.0	1.1	3.7	1.562
Q4 2011	-1.1	3.5	1.297	6.7	3.0	87.2	-0.6	-0.6	77.0	0.7	3.3	1.554
Q1 2012	-0.6	2.8	1.333	7.3	3.2	86.2	5.1	2.2	82.4	2.6	2.1	1.599
Q2 2012	-1.4	2.3	1.267	6.0	3.9	88.0	-3.2	-1.5	79.8	-0.2	2.0	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	-0.5	1.6	1.286	6.5	2.2	86.2	-1.4	-1.8	77.9	4.8	2.3	1.613
Q4 2012	-1.7	2.4	1.319	7.3	3.5	85.9	1.0	0.1	86.6	-0.9	4.0	1.626
Q1 2013	-1.4	1.2	1.282	6.5	4.6	86.1	4.7	0.6	94.2	2.6	2.9	1.519
Q2 2013	2.0	0.4	1.301	6.4	2.8	87.1	3.3	0.0	99.2	2.2	1.7	1.521
Q3 2013	1.4	1.3	1.354	7.6	3.5	86.5	3.5	2.7	98.3	3.6	2.1	1.618
Q4 2013	0.9	0.2	1.378	6.8	4.0	85.8	-0.2	2.6	105.3	1.9	1.5	1.657
Q1 2014	1.9	0.8	1.378	5.9	1.4	86.8	3.7	1.0	103.0	3.4	1.9	1.668
Q2 2014	0.8	0.0	1.369	7.4	2.6	86.6	-7.3	8.3	101.3	3.4	1.4	1.711
Q3 2014	1.6	0.3	1.263	6.7	2.4	87.0	0.6	1.8	109.7	2.8	0.8	1.622
Q4 2014	2.0	-0.5	1.210	5.8	1.1	88.1	1.9	-0.8	119.9	2.7	-0.4	1.558
Q1 2015	2.9	-1.0	1.074	6.0	0.9	88.0	5.3	0.4	120.0	1.8	-1.2	1.485
Q2 2015	1.7	1.9	1.115	6.9	2.7	88.4	0.6	0.8	122.1	2.3	0.8	1.573
Q3 2015	1.5	-0.2	1.116	6.5	2.8	91.0	0.1	0.3	119.8	1.7	0.8	1.512
Q4 2015	1.9	-0.2	1.086	5.6	1.3	92.2	-1.8	-0.8	120.3	3.0	0.0	1.475
Q1 2016	2.8	-1.4	1.139	6.5	3.0	91.8	2.8	-0.1	112.4	1.3	-0.1	1.438
Q2 2016	1.1	1.3	1.103	6.7	2.8	94.2	0.1	-0.7	102.8	0.6	0.8	1.324
Q3 2016	1.4	1.3	1.124	6.0	1.3	93.7	1.3	-0.1	101.2	1.9	2.2	1.302
Q4 2016	3.0	1.7	1.055	5.8	1.9	97.5	0.7	2.2	116.8	3.0	2.0	1.234
Q1 2017	2.7	2.7	1.070	6.2	1.1	95.2	3.3	-0.4	111.4	1.7	3.6	1.254
Q2 2017	2.7	0.4	1.141	6.1	2.0	94.6	2.1	-0.1	112.4	1.0	3.2	1.300
Q3 2017	2.7	1.0	1.181	6.8	2.4	93.5	2.7	0.8	112.6	2.1	2.5	1.340
Q4 2017	2.7	1.6	1.202	5.8	3.0	91.0	1.5	2.0	112.7	1.6	2.9	1.353
Q1 2018	1.5	2.1	1.232	7.1	2.2	89.0	-1.3	2.5	106.2	0.3	2.3	1.403
Q2 2018	1.7	2.1	1.168	5.9	1.4	93.5	2.8	-2.7	110.7	1.7	2.0	1.320
Q3 2018	0.6	2.6	1.162	5.1	3.3	97.1	-2.5	3.1	113.5	2.5	2.9	1.305
Q4 2018	1.6	0.9	1.146	5.9	2.6	96.2	0.9	0.7	109.7	1.4	1.9	1.276

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, Q1:2019–Q1:2022
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	Level: House Price Index	Level: Com-mercial Real Estate Price Index	Level: Market Volatility Index
Q1 2019	2.2	4.2	2.8	4.2	3.7	1.5	2.5	2.8	2.9	4.6	4.5	5.5	26,026	207	293	28.3
Q2 2019	2.5	4.8	2.3	4.5	3.6	2.3	2.6	2.9	3.0	4.8	4.6	5.6	26,367	208	296	27.0
Q3 2019	2.2	4.4	2.3	4.4	3.6	2.3	2.7	3.0	3.1	4.9	4.6	5.7	26,687	209	300	25.3
Q4 2019	2.0	4.2	2.2	4.3	3.6	2.3	2.8	3.0	3.2	4.9	4.7	5.8	26,998	210	304	24.5
Q1 2020	1.7	4.0	2.1	4.3	3.6	2.4	2.8	3.0	3.2	4.9	4.7	5.8	27,299	212	308	23.9
Q2 2020	1.6	4.0	2.1	4.0	3.6	2.1	2.8	3.0	3.2	4.9	4.7	5.8	27,603	213	312	23.5
Q3 2020	1.5	3.7	1.9	4.0	3.7	2.2	2.8	3.0	3.2	4.9	4.7	5.8	27,894	214	316	23.7
Q4 2020	1.6	3.8	1.9	3.8	3.8	2.1	2.8	3.1	3.2	4.9	4.7	5.8	28,193	216	320	23.9
Q1 2021	2.2	4.3	2.3	4.4	3.9	2.2	2.8	3.3	3.4	5.2	4.9	5.8	28,529	217	322	24.6
Q2 2021	2.0	4.1	2.2	4.2	4.0	2.2	2.8	3.3	3.5	5.1	5.0	5.8	28,858	219	324	23.8
Q3 2021	2.0	4.1	2.2	4.2	4.0	2.2	2.8	3.4	3.5	5.2	5.0	5.8	29,191	221	327	23.7
Q4 2021	2.0	4.1	2.2	4.2	4.0	2.2	2.8	3.4	3.5	5.2	5.0	5.8	29,527	222	329	23.6
Q1 2022	2.0	4.1	2.2	4.2	4.1	2.2	2.8	3.4	3.6	5.2	5.1	5.8	29,868	224	332	23.6

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, Q1:2019–Q1:2022
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 2019	1.6	1.6	1.155	5.9	2.6	96.6	0.8	1.1	109.9	1.4	2.1	1.294
Q2 2019	1.7	1.6	1.164	5.9	2.5	97.0	0.8	1.1	110.1	1.4	2.1	1.311
Q3 2019	1.7	1.6	1.172	5.9	2.5	97.4	0.8	1.1	110.3	1.5	2.1	1.328
Q4 2019	1.6	1.6	1.181	5.8	2.6	97.7	0.7	1.1	110.4	1.5	2.1	1.345
Q1 2020	1.6	1.6	1.188	5.8	2.7	97.4	0.7	1.1	110.0	1.5	2.0	1.350
Q2 2020	1.5	1.7	1.194	5.7	2.8	97.1	0.7	1.1	109.6	1.5	2.0	1.354
Q3 2020	1.5	1.7	1.200	5.7	2.8	96.8	0.7	1.0	109.2	1.5	2.0	1.358
Q4 2020	1.4	1.7	1.206	5.7	2.9	96.5	0.7	1.0	108.7	1.5	2.0	1.362
Q1 2021	1.4	1.8	1.206	5.7	2.9	96.5	0.7	1.0	108.7	1.5	2.0	1.362
Q2 2021	1.4	1.8	1.206	5.7	2.8	96.5	0.6	1.0	108.7	1.6	2.0	1.362
Q3 2021	1.4	1.9	1.206	5.7	2.8	96.5	0.6	1.0	108.7	1.6	2.0	1.362
Q4 2021	1.3	1.9	1.206	5.6	2.9	96.5	0.6	1.0	108.7	1.6	2.0	1.362
Q1 2022	1.3	1.9	1.206	5.6	2.9	96.5	0.6	1.0	108.7	1.6	2.0	1.362

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, Q1:2019–Q1:2022
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 2019	-1.6	0.2	-3.7	-2.6	4.3	1.3	0.3	0.5	0.9	4.1	3.4	3.3	24,068	201	283	44.4
Q2 2019	-4.0	-1.9	-4.1	-2.4	5.1	2.0	0.2	0.7	1.0	4.6	3.6	3.2	21,695	198	280	43.1
Q3 2019	-2.8	-0.9	-2.3	-0.6	5.7	1.9	0.1	0.7	1.1	4.8	3.7	3.1	20,527	194	275	39.2
Q4 2019	-1.6	0.4	-1.1	0.7	6.2	2.0	0.1	0.8	1.2	4.9	3.8	3.1	20,045	190	267	34.9
Q1 2020	-1.0	1.0	-0.6	1.4	6.6	2.2	0.1	0.8	1.3	4.7	3.7	3.1	20,200	185	259	30.5
Q2 2020	0.2	2.4	0.2	1.9	6.8	2.0	0.1	0.9	1.3	4.6	3.7	3.1	20,609	181	252	27.3
Q3 2020	0.9	3.0	0.5	2.5	7.0	2.1	0.1	1.0	1.3	4.4	3.6	3.1	21,024	178	244	25.3
Q4 2020	2.5	4.6	1.5	3.4	7.0	2.1	0.1	1.0	1.4	4.3	3.5	3.1	21,633	176	239	23.5
Q1 2021	2.9	4.9	2.3	4.3	6.9	2.2	0.1	1.1	1.6	4.3	3.6	3.1	22,248	176	237	22.5
Q2 2021	3.1	5.2	1.9	3.9	6.7	2.2	0.1	1.2	1.7	4.2	3.7	3.1	23,033	178	237	21.4
Q3 2021	3.3	5.3	1.9	3.9	6.6	2.1	0.1	1.2	1.8	4.1	3.7	3.1	23,792	179	237	20.8
Q4 2021	3.4	5.4	1.9	3.8	6.4	2.1	0.1	1.3	1.9	4.0	3.6	3.1	24,621	182	238	20.3
Q1 2022	3.4	5.3	1.8	3.7	6.3	2.1	0.1	1.3	1.9	3.8	3.6	3.1	25,537	184	239	20.1

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.6. Supervisory adverse scenario: International variables, Q1:2019–Q1:2022
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 2019	-2.6	1.6	1.117	1.9	1.0	97.9	-2.0	-0.1	108.8	-2.8	1.5	1.286
Q2 2019	-3.3	1.0	1.104	2.1	0.2	99.8	-3.5	-0.5	108.5	-3.4	1.1	1.273
Q3 2019	-2.3	0.5	1.115	3.4	0.1	101.1	-4.2	-0.7	108.8	-2.6	0.7	1.285
Q4 2019	-1.6	0.2	1.129	4.2	0.1	102.0	-4.6	-1.1	108.0	-1.8	0.6	1.297
Q1 2020	-0.6	0.3	1.135	5.5	0.6	101.9	-2.0	-0.6	108.8	-0.7	0.7	1.302
Q2 2020	0.2	0.5	1.140	6.1	0.6	100.9	-1.0	-0.4	108.7	0.2	0.8	1.306
Q3 2020	0.8	0.8	1.146	6.3	0.9	100.0	-0.4	-0.2	108.5	0.9	1.0	1.309
Q4 2020	1.3	1.0	1.152	6.3	1.2	99.2	0.1	0.0	108.5	1.4	1.1	1.312
Q1 2021	1.6	1.1	1.156	6.2	1.4	98.6	0.4	0.2	108.6	1.8	1.2	1.313
Q2 2021	1.7	1.3	1.160	6.1	1.5	98.2	0.7	0.3	108.7	2.0	1.3	1.314
Q3 2021	1.7	1.4	1.164	6.1	1.7	97.8	0.8	0.4	108.8	2.1	1.4	1.316
Q4 2021	1.7	1.5	1.169	6.0	1.9	97.4	0.9	0.5	108.8	2.1	1.5	1.318
Q1 2022	1.6	1.6	1.172	5.9	2.0	97.1	0.9	0.5	108.8	2.1	1.5	1.321

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, Q1:2019–Q1:2022
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	Level: House Price Index	Level: Com-mercial Real Estate Price Index	Level: Market Volatility Index
Q1 2019	-5.0	-3.5	-5.1	-4.2	4.7	1.2	0.3	0.3	0.8	5.3	3.9	3.3	17,836	199	280	67.8
Q2 2019	-9.4	-7.7	-7.1	-5.8	6.3	1.6	0.2	0.5	0.9	6.1	4.2	3.2	14,694	193	272	70.0
Q3 2019	-7.2	-5.7	-4.8	-3.4	7.5	1.7	0.1	0.6	1.0	6.5	4.4	3.1	13,317	186	262	61.3
Q4 2019	-5.0	-3.4	-3.2	-1.6	8.4	1.8	0.1	0.6	1.1	6.5	4.5	3.1	12,862	178	247	49.9
Q1 2020	-3.8	-2.1	-2.4	-0.7	9.2	1.9	0.1	0.7	1.2	6.2	4.3	3.1	13,462	170	232	38.4
Q2 2020	-1.5	0.5	-1.2	0.4	9.7	1.8	0.1	0.7	1.2	5.8	4.2	3.1	14,421	163	217	31.2
Q3 2020	-0.3	1.6	-0.6	1.2	10.0	2.0	0.1	0.7	1.2	5.5	4.1	3.1	15,479	156	202	26.9
Q4 2020	2.9	4.8	1.2	3.0	9.9	2.0	0.1	0.7	1.2	5.1	3.9	3.1	16,847	152	192	23.3
Q1 2021	3.6	5.4	2.3	4.3	9.7	2.1	0.1	0.9	1.5	5.0	3.9	3.1	17,788	151	187	22.5
Q2 2021	4.1	5.9	2.2	4.2	9.5	2.1	0.1	1.0	1.6	4.7	3.8	3.1	19,352	153	187	21.4
Q3 2021	4.4	6.2	2.3	4.3	9.2	2.1	0.1	1.1	1.6	4.4	3.8	3.1	21,039	154	187	20.8
Q4 2021	4.6	6.4	2.5	4.3	8.9	2.0	0.1	1.2	1.7	4.0	3.6	3.1	22,940	157	189	20.3
Q1 2022	4.6	6.3	2.4	4.2	8.6	2.0	0.1	1.2	1.8	3.7	3.5	3.1	25,137	160	191	20.1

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.8. Supervisory severely adverse scenario: International variables, Q1:2019–Q1:2022
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 2019	-5.4	1.5	1.092	-0.8	0.0	98.8	-3.9	-0.8	108.1	-5.6	1.0	1.282
Q2 2019	-6.5	0.5	1.067	-0.4	-1.3	101.7	-6.4	-1.5	107.4	-6.6	0.4	1.248
Q3 2019	-4.9	-0.3	1.079	1.7	-1.5	103.6	-7.5	-1.9	107.8	-5.3	-0.2	1.258
Q4 2019	-3.8	-0.8	1.095	3.1	-1.6	104.9	-8.2	-2.5	106.4	-4.0	-0.3	1.266
Q1 2020	-2.1	-0.6	1.100	5.3	-0.8	105.0	-3.8	-1.7	108.1	-2.2	-0.2	1.271
Q2 2020	-0.6	-0.2	1.106	6.4	-0.8	103.5	-2.1	-1.4	108.1	-0.6	0.0	1.275
Q3 2020	0.4	0.1	1.112	6.7	-0.3	102.2	-1.1	-1.0	108.1	0.5	0.3	1.277
Q4 2020	1.2	0.5	1.118	6.6	0.1	101.0	-0.3	-0.7	108.3	1.4	0.5	1.279
Q1 2021	1.6	0.7	1.124	6.5	0.4	100.1	0.3	-0.4	108.5	1.9	0.7	1.281
Q2 2021	1.9	0.9	1.131	6.4	0.7	99.3	0.7	-0.2	108.7	2.3	0.9	1.283
Q3 2021	2.0	1.0	1.138	6.3	0.9	98.6	0.9	0.0	108.9	2.5	1.0	1.286
Q4 2021	1.9	1.2	1.144	6.2	1.2	98.1	1.0	0.1	108.9	2.5	1.1	1.290
Q1 2022	1.9	1.3	1.151	6.2	1.5	97.5	1.1	0.3	108.9	2.5	1.2	1.294

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 2018:Q4 (as released through January 18, 2019). The 2018: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: Firm-Specific Results

Tables begin on next page.

Table B.1.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.6	9.7	9.7
Tier 1 capital ratio	13.2	11.2	11.2
Total capital ratio	15.4	13.5	13.5
Tier 1 leverage ratio	8.4	7.1	7.1
Supplementary leverage ratio	6.8	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	43.6	4.4
First-lien mortgages, domestic	2.5	1.2
Junior liens and HELOCs, domestic	0.9	1.9
Commercial and industrial[2]	13.3	4.8
Commercial real estate, domestic	4.8	6.7
Credit cards	14.8	14.7
Other consumer[3]	1.6	2.0
Other loans[4]	5.8	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	1,437.2	1,465.7

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	42.3	1.8
equals		
Net interest income	98.6	4.2
Noninterest income	83.7	3.5
less		
Noninterest expense[2]	140.0	5.9
Other revenue[3]	0.0	
less		
Provisions	48.3	
Realized losses/gains on securities (AFS/HTM)	0.2	
Trading and counterparty losses[4]	8.9	
Other losses/gains[5]	2.7	
equals		
Net income before taxes	-17.8	-0.7
Memo items		
Other comprehensive income[6]	12.5	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-11.2	1.3

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

2 Noninterest expense 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 B.1.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 2018:Q4 and projected 2019:Q1–2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.6	11.9	11.5
Tier 1 capital ratio	13.2	13.4	12.9
Total capital ratio	15.4	15.3	15.3
Tier 1 leverage ratio	8.4	8.5	8.3
Supplementary leverage ratio	6.8	6.9	6.7

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	27.3	2.8
First-lien mortgages, domestic	1.0	0.5
Junior liens and HELOCs, domestic	0.4	0.8
Commercial and industrial[2]	8.4	3.0
Commercial real estate, domestic	2.1	2.9
Credit cards	10.7	10.6
Other consumer[3]	1.2	1.4
Other loans[4]	3.6	1.8

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

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1
Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	1,437.2	1,493.0

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	54.3	2.3
equals		
Net interest income	100.3	4.2
Noninterest income	92.3	3.8
less		
Noninterest expense[2]	138.3	5.8
Other revenue[3]	0.0	
less		
Provisions	27.3	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	5.3	
Other losses/gains[5]	1.9	
equals		
Net income before taxes	19.6	0.8
Memo items		
Other comprehensive income[6]	11.6	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-11.2	0.4

1 Average assets is the nine-quarter average of total assets.
2 Noninterest expense 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 B.2.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.7	13.1	11.3
Tier 1 capital ratio	14.1	15.4	13.6
Total capital ratio	15.1	16.6	14.7
Tier 1 leverage ratio	6.6	7.2	6.4
Supplementary leverage ratio	6.0	6.6	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.4	2.5
First-lien mortgages, domestic	0.2	1.7
Junior liens and HELOCs, domestic	0.0	8.7
Commercial and industrial[2]	0.1	3.2
Commercial real estate, domestic	0.2	7.0
Credit cards	0.0	0.0
Other consumer[3]	0.3	9.9
Other loans[4]	0.6	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	149.6	151.7

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	7.3	2.0
equals		
Net interest income	6.7	1.8
Noninterest income	26.2	7.2
less		
Noninterest expense[2]	25.7	7.0
Other revenue[3]	0.0	
less		
Provisions	1.8	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	1.1	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	4.3	1.2
Memo items		
Other comprehensive income[6]	1.5	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-3.2	-1.7

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

2 Noninterest expense 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 B.2.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.7	13.9	12.2
Tier 1 capital ratio	14.1	16.1	14.5
Total capital ratio	15.1	17.2	15.5
Tier 1 leverage ratio	6.6	7.5	6.8
Supplementary leverage ratio	6.0	6.9	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.9	1.6
First-lien mortgages, domestic	0.1	0.9
Junior liens and HELOCs, domestic	0.0	5.2
Commercial and industrial[2]	0.1	2.0
Commercial real estate, domestic	0.1	2.6
Credit cards	0.0	0.0
Other consumer[3]	0.3	8.0
Other loans[4]	0.4	1.0

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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	149.6	154.2

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	8.0	2.2
equals		
Net interest income	6.5	1.7
Noninterest income	27.4	7.4
less		
Noninterest expense[2]	25.9	7.0
Other revenue[3]	0.0	
less		
Provisions	1.1	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.8	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	6.0	1.6
Memo items		
Other comprehensive income[6]	1.6	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-3.2	-1.5

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

2 Noninterest expense 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 B.3.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	14.5	12.4	11.6
Tier 1 capital ratio	17.6	15.4	14.5
Total capital ratio	21.0	18.5	17.8
Tier 1 leverage ratio	8.9	7.8	7.5
Supplementary leverage ratio	7.3	6.3	6.1

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.2	10.3
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.0	22.6
Commercial real estate, domestic	0.0	6.3
Credit cards	4.0	15.1
Other consumer[3]	0.1	13.7
Other loans[4]	0.1	0.7

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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	87.0	88.0

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	4.6	3.0
equals		
Net interest income	7.7	4.9
Noninterest income	12.0	7.7
less		
Noninterest expense[2]	15.1	9.6
Other revenue[3]	0.0	
less		
Provisions	4.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.8	
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 2018:Q4*	*2021: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 Noninterest expense 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 B.3.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	14.5	14.9	13.5
Tier 1 capital ratio	17.6	17.8	16.4
Total capital ratio	21.0	20.8	20.0
Tier 1 leverage ratio	8.9	9.0	8.4
Supplementary leverage ratio	7.3	7.3	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.1	7.5
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.0	18.5
Commercial real estate, domestic	0.0	2.4
Credit cards	3.0	11.0
Other consumer[3]	0.1	11.0
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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	87.0	89.8

[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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	5.2	3.3
equals		
Net interest income	8.0	5.0
Noninterest income	12.5	7.9
less		
Noninterest expense[2]	15.2	9.6
Other revenue[3]	0.0	
less		
Provisions	3.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.3	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	1.9	1.2
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2018:Q4*	*2021: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] Noninterest expense 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 B.4.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.2	6.0	6.0
Tier 1 capital ratio	12.7	7.4	7.4
Total capital ratio	15.1	9.6	9.6
Tier 1 leverage ratio	10.7	6.5	6.5
Supplementary leverage ratio	9.0	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	38.6	15.1
First-lien mortgages, domestic	0.0	2.2
Junior liens and HELOCs, domestic	0.0	5.1
Commercial and industrial[2]	4.1	11.8
Commercial real estate, domestic	1.6	5.3
Credit cards	26.5	23.0
Other consumer[3]	5.2	9.1
Other loans[4]	1.1	6.3

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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	294.9	313.4

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	30.7	8.2
equals		
Net interest income	51.3	13.6
Noninterest income	11.1	2.9
less		
Noninterest expense[2]	31.6	8.4
Other revenue[3]	0.0	
less		
Provisions	44.3	
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	-13.6	-3.6
Memo items		
Other comprehensive income[6]	1.0	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-0.9	0.1

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

2 Noninterest expense 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 B.4.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.2	10.3	9.9
Tier 1 capital ratio	12.7	11.7	11.3
Total capital ratio	15.1	13.8	13.6
Tier 1 leverage ratio	10.7	10.3	10.1
Supplementary leverage ratio	9.0	8.7	8.5

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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	28.3	11.0
First-lien mortgages, domestic	0.0	1.1
Junior liens and HELOCs, domestic	0.0	3.4
Commercial and industrial[2]	2.8	7.9
Commercial real estate, domestic	0.7	2.2
Credit cards	20.0	17.2
Other consumer[3]	4.2	7.2
Other loans[4]	0.7	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.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	294.9	321.3

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	31.7	8.3
equals		
Net interest income	52.0	13.7
Noninterest income	11.2	3.0
less		
Noninterest expense[2]	31.5	8.3
Other revenue[3]	0.0	
less		
Provisions	31.2	
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	0.5	0.1
Memo items		
Other comprehensive income[6]	1.1	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-0.9	0.2

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

2 Noninterest expense 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 B.5.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	9.5	8.2
Tier 1 capital ratio	13.5	11.1	9.7
Total capital ratio	16.6	14.1	12.9
Tier 1 leverage ratio	8.3	6.8	6.1
Supplementary leverage ratio	6.4	5.3	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	46.9	6.6
First-lien mortgages, domestic	1.6	2.1
Junior liens and HELOCs, domestic	0.6	4.3
Commercial and industrial[2]	7.9	4.4
Commercial real estate, domestic	2.0	8.5
Credit cards	25.1	15.2
Other consumer[3]	3.1	10.5
Other loans[4]	6.5	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	1,174.4	1,195.2

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	56.7	2.9
equals		
Net interest income	112.9	5.8
Noninterest income	48.8	2.5
less		
Noninterest expense[2]	105.0	5.4
Other revenue[3]	0.0	
less		
Provisions	49.9	
Realized losses/gains on securities (AFS/HTM)	0.9	
Trading and counterparty losses[4]	15.7	
Other losses/gains[5]	1.9	
equals		
Net income before taxes	-11.6	-0.6
Memo items		
Other comprehensive income[6]	5.2	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-36.4	-31.2

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

2 Noninterest expense 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 B.5.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.9	12.2	10.8
Tier 1 capital ratio	13.5	13.7	12.3
Total capital ratio	16.6	16.3	15.4
Tier 1 leverage ratio	8.3	8.5	7.7
Supplementary leverage ratio	6.4	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	33.1	4.7
First-lien mortgages, domestic	0.8	1.0
Junior liens and HELOCs, domestic	0.3	2.4
Commercial and industrial[2]	5.6	3.1
Commercial real estate, domestic	0.8	3.5
Credit cards	18.9	11.3
Other consumer[3]	2.7	8.9
Other loans[4]	4.1	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	1,174.4	1,220.6

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	64.1	3.3
equals		
Net interest income	112.1	5.7
Noninterest income	56.0	2.9
less		
Noninterest expense[2]	104.0	5.3
Other revenue[3]	0.0	
less		
Provisions	32.3	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses[4]	6.9	
Other losses/gains[5]	1.2	
equals		
Net income before taxes	23.2	1.2
Memo items		
Other comprehensive income[6]	5.6	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-36.4	-30.8

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

2 Noninterest expense 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 B.6.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	25.8	22.3	18.4
Tier 1 capital ratio	26.5	23.2	19.3
Total capital ratio	26.6	23.2	19.4
Tier 1 leverage ratio	12.9	10.1	8.5
Supplementary leverage ratio	11.3	8.8	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021: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	13.7
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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	61.3	55.1

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	2.3	1.9
equals		
Net interest income	1.2	1.0
Noninterest income	11.9	9.7
less		
Noninterest expense[2]	10.9	8.8
Other revenue[3]	0.0	
less		
Provisions	0.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	4.8	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	-2.6	-2.1
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2018:Q4*	*2021: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 Noninterest expense 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 B.6.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	25.8	24.7	20.9
Tier 1 capital ratio	26.5	25.5	21.7
Total capital ratio	26.6	25.5	21.8
Tier 1 leverage ratio	12.9	11.4	10.0
Supplementary leverage ratio	11.3	10.0	8.7

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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021: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	11.0
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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	61.3	58.0

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	2.8	2.2
equals		
Net interest income	1.2	1.0
Noninterest income	12.5	10.1
less		
Noninterest expense[2]	11.0	8.8
Other revenue[3]	0.0	
less		
Provisions	0.1	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	3.1	
Other losses/gains[5]	0.1	
equals		
Net income before taxes	-0.5	-0.4
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2018:Q4*	*2021: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 Noninterest expense 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 B.7.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1, 2]	
		Ending	Minimum
Common equity tier 1 capital ratio	22.9	15.0	14.8
Tier 1 capital ratio	34.4	26.4	26.2
Total capital ratio	34.4	26.7	26.6
Tier 1 leverage ratio	9.2	6.9	6.9
Supplementary leverage ratio	8.4	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

2 DWS USA Corporation, the second U.S. intermediate holding company subsidiary of Deutsche Bank AG, was subject to DFAST 2019 and maintained capital above each minimum regulatory capital ratio on a post-stress basis. DWS USA Corporation had about $2 billion in assets as of the end of 2018.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.4	3.6
First-lien mortgages, domestic	0.1	2.3
Junior liens and HELOCs, domestic	0.0	5.4
Commercial and industrial[2]	0.0	1.0
Commercial real estate, domestic	0.2	9.5
Credit cards	0.0	0.0
Other consumer[3]	0.0	7.1
Other loans[4]	0.1	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	36.5	36.7

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	-0.4	-0.3
equals		
Net interest income	1.5	1.2
Noninterest income	11.2	9.0
less		
Noninterest expense[2]	13.1	10.5
Other revenue[3]	0.0	
less		
Provisions	0.5	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	1.3	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-2.2	-1.7
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2018:Q4*	*2021: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 Noninterest expense 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 B.7.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1, 2]	
		Ending	Minimum
Common equity tier 1 capital ratio	22.9	17.8	17.6
Tier 1 capital ratio	34.4	28.7	28.6
Total capital ratio	34.4	28.9	28.8
Tier 1 leverage ratio	9.2	7.8	7.7
Supplementary leverage ratio	8.4	7.1	7.1

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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

2 DWS USA Corporation, the second U.S. intermediate holding company subsidiary of Deutsche Bank AG, was subject to DFAST 2019 and maintained capital above each minimum regulatory capital ratio on a post-stress basis. DWS USA Corporation had about $2 billion in assets as of the end of 2018.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.2	1.8
First-lien mortgages, domestic	0.0	1.4
Junior liens and HELOCs, domestic	0.0	4.1
Commercial and industrial[2]	0.0	0.6
Commercial real estate, domestic	0.1	3.4
Credit cards	0.0	0.0
Other consumer[3]	0.0	5.8
Other loans[4]	0.0	1.2

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

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

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	36.5	38.3

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	0.1	0.1
equals		
Net interest income	1.5	1.2
Noninterest income	11.7	9.3
less		
Noninterest expense[2]	13.2	10.5
Other revenue[3]	0.0	
less		
Provisions	0.2	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	0.7	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-0.9	-0.7
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2018:Q4*	*2021: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 Noninterest expense 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 B.8.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	13.3	9.9	7.6
Tier 1 capital ratio	15.3	11.9	9.5
Total capital ratio	18.0	14.6	12.4
Tier 1 leverage ratio	8.9	6.7	5.7
Supplementary leverage ratio	6.2	4.7	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	9.7	8.9
First-lien mortgages, domestic	0.7	22.9
Junior liens and HELOCs, domestic	0.0	3.6
Commercial and industrial[2]	3.0	13.1
Commercial real estate, domestic	1.0	14.2
Credit cards	0.0	5.6
Other consumer[3]	1.0	14.0
Other loans[4]	4.0	5.8

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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	547.9	544.6

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	12.9	1.4
equals		
Net interest income	9.2	1.0
Noninterest income	54.5	5.8
less		
Noninterest expense[2]	50.8	5.4
Other revenue[3]	0.0	
less		
Provisions	11.2	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	13.6	
Other losses/gains[5]	6.0	
equals		
Net income before taxes	-18.0	-1.9
Memo items		
Other comprehensive income[6]	0.8	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	0.7	1.5

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

2 Noninterest expense 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 B.8.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	13.3	13.3	11.4
Tier 1 capital ratio	15.3	15.2	13.2
Total capital ratio	18.0	17.7	16.0
Tier 1 leverage ratio	8.9	8.8	7.8
Supplementary leverage ratio	6.2	6.2	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	6.2	5.7
First-lien mortgages, domestic	0.5	19.0
Junior liens and HELOCs, domestic	0.0	2.7
Commercial and industrial[2]	1.9	8.3
Commercial real estate, domestic	0.4	5.7
Credit cards	0.0	4.0
Other consumer[3]	0.9	12.0
Other loans[4]	2.5	3.6

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

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

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	547.9	564.9

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	20.6	2.2
equals		
Net interest income	9.6	1.0
Noninterest income	61.7	6.5
less		
Noninterest expense[2]	50.8	5.3
Other revenue[3]	0.0	
less		
Provisions	7.0	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	5.1	
Other losses/gains[5]	4.6	
equals		
Net income before taxes	3.9	0.4
Memo items		
Other comprehensive income[6]	0.7	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	0.7	1.4

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

2 Noninterest expense 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 B.9.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.6	8.5	8.5
Tier 1 capital ratio	14.2	10.1	10.1
Total capital ratio	18.0	14.2	14.2
Tier 1 leverage ratio	7.5	5.1	5.1
Supplementary leverage ratio	5.6	3.8	3.8

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	3.5	5.1
First-lien mortgages, domestic	0.3	1.8
Junior liens and HELOCs, domestic	0.0	3.0
Commercial and industrial[2]	1.4	5.4
Commercial real estate, domestic	0.9	8.3
Credit cards	0.2	16.4
Other consumer[3]	0.0	9.2
Other loans[4]	0.6	5.5

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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	140.8	138.9

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	-0.8	-0.3
equals		
Net interest income	5.0	1.8
Noninterest income	5.0	1.8
less		
Noninterest expense[2]	10.8	3.9
Other revenue[3]	0.0	
less		
Provisions	3.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	2.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-6.8	-2.4
Memo items		
Other comprehensive income[6]	2.2	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-0.7	1.4

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

2 Noninterest expense 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 B.9.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.6	10.9	10.9
Tier 1 capital ratio	14.2	12.5	12.5
Total capital ratio	18.0	16.2	16.2
Tier 1 leverage ratio	7.5	6.4	6.4
Supplementary leverage ratio	5.6	4.7	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	140.8	142.0

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	0.1	0.0
equals		
Net interest income	5.0	1.8
Noninterest income	5.7	2.0
less		
Noninterest expense[2]	10.6	3.7
Other revenue[3]	0.0	
less		
Provisions	1.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	1.0	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-2.8	-1.0
Memo items		
Other comprehensive income[6]	1.9	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-0.7	1.2

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

2 Noninterest expense 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, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.9	2.7
First-lien mortgages, domestic	0.1	0.7
Junior liens and HELOCs, domestic	0.0	1.9
Commercial and industrial[2]	0.9	3.4
Commercial real estate, domestic	0.4	3.1
Credit cards	0.1	11.3
Other consumer[3]	0.0	7.6
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.

Table B.10.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.0	8.2	8.1
Tier 1 capital ratio	13.7	9.9	9.8
Total capital ratio	15.5	11.9	11.8
Tier 1 leverage ratio	8.1	5.9	5.8
Supplementary leverage ratio	6.4	4.7	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	60.2	5.9
First-lien mortgages, domestic	3.2	1.3
Junior liens and HELOCs, domestic	0.9	2.4
Commercial and industrial[2]	17.3	9.6
Commercial real estate, domestic	4.0	3.4
Credit cards	22.0	15.0
Other consumer[3]	2.1	3.4
Other loans[4]	10.8	4.8

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

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

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	1,528.9	1,572.2

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	60.0	2.3
equals		
Net interest income	116.3	4.4
Noninterest income	98.6	3.7
less		
Noninterest expense[2]	154.9	5.9
Other revenue[3]	0.0	
less		
Provisions	66.7	
Realized losses/gains on securities (AFS/HTM)	0.7	
Trading and counterparty losses[4]	21.2	
Other losses/gains[5]	1.2	
equals		
Net income before taxes	-29.9	-1.1
Memo items		
Other comprehensive income[6]	2.6	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-1.4	1.2

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

2 Noninterest expense 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 B.10.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.0	10.9	10.6
Tier 1 capital ratio	13.7	12.6	12.3
Total capital ratio	15.5	14.2	14.1
Tier 1 leverage ratio	8.1	7.5	7.4
Supplementary leverage ratio	6.4	5.9	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	39.3	3.8
First-lien mortgages, domestic	1.4	0.5
Junior liens and HELOCs, domestic	0.6	1.5
Commercial and industrial[2]	11.4	6.3
Commercial real estate, domestic	1.9	1.6
Credit cards	15.8	10.7
Other consumer[3]	1.6	2.6
Other loans[4]	6.6	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	1,528.9	1,602.7

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	72.8	2.7
equals		
Net interest income	117.2	4.4
Noninterest income	108.6	4.1
less		
Noninterest expense[2]	153.0	5.7
Other revenue[3]	0.0	
less		
Provisions	39.9	
Realized losses/gains on securities (AFS/HTM)	0.4	
Trading and counterparty losses[4]	12.1	
Other losses/gains[5]	0.9	
equals		
Net income before taxes	19.5	0.7
Memo items		
Other comprehensive income[6]	4.0	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-1.4	2.6

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

2 Noninterest expense 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 B.11.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.9	11.1	8.9
Tier 1 capital ratio	19.2	13.4	11.1
Total capital ratio	21.8	15.7	13.6
Tier 1 leverage ratio	8.4	5.7	5.1
Supplementary leverage ratio	6.5	4.4	3.9

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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	4.1	3.2
First-lien mortgages, domestic	0.4	1.4
Junior liens and HELOCs, domestic	0.0	3.6
Commercial and industrial[2]	0.9	8.6
Commercial real estate, domestic	0.9	7.6
Credit cards	0.0	0.0
Other consumer[3]	0.1	0.6
Other loans[4]	1.9	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	367.3	367.6

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	3.4	0.4
equals		
Net interest income	9.1	1.1
Noninterest income	60.8	7.1
less		
Noninterest expense[2]	66.5	7.7
Other revenue[3]	0.0	
less		
Provisions	5.2	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	9.8	
Other losses/gains[5]	5.3	
equals		
Net income before taxes	-16.9	-2.0
Memo items		
Other comprehensive income[6]	2.2	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-2.3	-0.1

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

2 Noninterest expense 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 B.11.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.9	14.5	13.1
Tier 1 capital ratio	19.2	16.8	15.4
Total capital ratio	21.8	18.8	17.7
Tier 1 leverage ratio	8.4	7.2	6.8
Supplementary leverage ratio	6.5	5.6	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	2.4	1.8
First-lien mortgages, domestic	0.2	0.7
Junior liens and HELOCs, domestic	0.0	2.7
Commercial and industrial[2]	0.6	5.3
Commercial real estate, domestic	0.3	2.8
Credit cards	0.0	0.0
Other consumer[3]	0.1	0.6
Other loans[4]	1.2	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	367.3	377.4

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	8.9	1.0
equals		
Net interest income	9.3	1.1
Noninterest income	66.4	7.6
less		
Noninterest expense[2]	66.7	7.7
Other revenue[3]	0.0	
less		
Provisions	2.9	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	5.2	
Other losses/gains[5]	3.6	
equals		
Net income before taxes	-2.7	-0.3
Memo items		
Other comprehensive income[6]	2.1	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-2.3	-0.2

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

2 Noninterest expense 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 B.12.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.9	13.2	10.7
Tier 1 capital ratio	14.1	14.5	12.0
Total capital ratio	16.1	16.5	14.0
Tier 1 leverage ratio	8.0	8.2	6.8
Supplementary leverage ratio	7.0	7.2	6.0

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.5	4.7
First-lien mortgages, domestic	0.1	1.5
Junior liens and HELOCs, domestic	0.1	6.1
Commercial and industrial[2]	0.2	5.5
Commercial real estate, domestic	0.2	6.1
Credit cards	0.0	0.0
Other consumer[3]	0.0	13.7
Other loans[4]	0.9	4.9

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

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

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	67.8	69.6

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	3.0	2.2
equals		
Net interest income	3.0	2.3
Noninterest income	8.8	6.6
less		
Noninterest expense[2]	8.9	6.6
Other revenue[3]	0.0	
less		
Provisions	1.9	
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	1.0	0.7
Memo items		
Other comprehensive income[6]	0.6	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-0.5	0.1

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

2 Noninterest expense 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 B.12.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	12.9	13.7	11.3
Tier 1 capital ratio	14.1	14.9	12.6
Total capital ratio	16.1	16.7	14.5
Tier 1 leverage ratio	8.0	8.4	7.1
Supplementary leverage ratio	7.0	7.4	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021: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	0.0	4.2
Commercial and industrial[2]	0.2	3.3
Commercial real estate, domestic	0.1	2.5
Credit cards	0.0	0.0
Other consumer[3]	0.0	11.0
Other loans[4]	0.5	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	67.8	70.6

[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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	2.8	2.1
equals		
Net interest income	2.8	2.0
Noninterest income	9.0	6.6
less		
Noninterest expense[2]	9.0	6.6
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	1.6	1.2
Memo items		
Other comprehensive income[6]	0.6	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-0.5	0.1

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

[2] Noninterest expense 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 B.13.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.6	8.5	8.5
Tier 1 capital ratio	10.8	9.7	9.6
Total capital ratio	13.0	12.0	12.0
Tier 1 leverage ratio	9.4	8.4	8.4
Supplementary leverage ratio	7.8	7.1	7.1

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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	10.9	4.7
First-lien mortgages, domestic	0.3	1.2
Junior liens and HELOCs, domestic	0.3	1.5
Commercial and industrial[2]	5.3	6.0
Commercial real estate, domestic	2.4	7.0
Credit cards	0.9	16.3
Other consumer[3]	0.9	3.7
Other loans[4]	0.7	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	320.6	329.1

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	11.9	3.1
equals		
Net interest income	22.0	5.7
Noninterest income	14.7	3.8
less		
Noninterest expense[2]	24.8	6.4
Other revenue[3]	0.0	
less		
Provisions	11.7	
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	-0.2	0.0
Memo items		
Other comprehensive income[6]	2.0	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-0.8	1.2

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

2 Noninterest expense 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 B.13.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.6	10.3	9.9
Tier 1 capital ratio	10.8	11.4	11.0
Total capital ratio	13.0	13.3	13.1
Tier 1 leverage ratio	9.4	9.9	9.7
Supplementary leverage ratio	7.8	8.3	8.1

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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	6.5	2.8
First-lien mortgages, domestic	0.2	0.7
Junior liens and HELOCs, domestic	0.1	0.6
Commercial and industrial[2]	3.4	3.8
Commercial real estate, domestic	1.0	2.9
Credit cards	0.6	11.3
Other consumer[3]	0.7	3.0
Other loans[4]	0.5	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	320.6	335.8

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	13.7	3.5
equals		
Net interest income	22.4	5.7
Noninterest income	16.0	4.1
less		
Noninterest expense[2]	24.6	6.3
Other revenue[3]	0.0	
less		
Provisions	6.3	
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	7.2	1.8
Memo items		
Other comprehensive income[6]	2.1	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-0.8	1.3

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

2 Noninterest expense 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 B.14.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.7	11.8	10.9
Tier 1 capital ratio	15.5	15.5	14.6
Total capital ratio	16.3	16.2	15.4
Tier 1 leverage ratio	7.2	7.2	6.8
Supplementary leverage ratio	6.3	6.3	6.0

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	98.8	100.4

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 loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.0	3.8
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.3	6.9
Commercial real estate, domestic	0.1	6.2
Credit cards	0.0	0.0
Other consumer[3]	0.0	0.6
Other loans[4]	0.6	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.

Projected losses, revenue, and net income before taxes through 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	3.4	1.4
equals		
Net interest income	4.5	1.8
Noninterest income	18.8	7.6
less		
Noninterest expense[2]	19.9	8.1
Other revenue[3]	0.0	
less		
Provisions	1.2	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	1.2	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	0.9	0.4
Memo items		
Other comprehensive income[6]	1.3	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-1.3	0.0

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

2 Noninterest expense 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 B.14.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.7	12.5	12.1
Tier 1 capital ratio	15.5	16.1	15.8
Total capital ratio	16.3	16.7	16.6
Tier 1 leverage ratio	7.2	7.5	7.4
Supplementary leverage ratio	6.3	6.5	6.5

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.7	2.5
First-lien mortgages, domestic	0.0	0.0
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.2	4.1
Commercial real estate, domestic	0.0	2.3
Credit cards	0.0	0.0
Other consumer[3]	0.0	0.6
Other loans[4]	0.4	2.1

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

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

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	98.8	101.8

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	3.6	1.4
equals		
Net interest income	4.1	1.6
Noninterest income	19.5	7.8
less		
Noninterest expense[2]	20.0	8.0
Other revenue[3]	0.0	
less		
Provisions	0.8	
Realized losses/gains on securities (AFS/HTM)	0.1	
Trading and counterparty losses[4]	0.8	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	1.9	0.8
Memo items		
Other comprehensive income[6]	1.4	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-1.3	0.0

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

2 Noninterest expense 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 B.15.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.3	13.7	12.9
Tier 1 capital ratio	16.3	13.7	12.9
Total capital ratio	17.3	15.0	14.2
Tier 1 leverage ratio	9.2	7.8	7.5
Supplementary leverage ratio	8.3	7.0	6.7

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	207.6	212.7

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 loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	8.7	5.5
First-lien mortgages, domestic	0.4	1.6
Junior liens and HELOCs, domestic	0.3	3.9
Commercial and industrial[2]	2.1	6.0
Commercial real estate, domestic	1.5	5.3
Credit cards	2.9	20.2
Other consumer[3]	0.7	2.9
Other loans[4]	0.8	3.2

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

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

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

Projected losses, revenue, and net income before taxes through 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	6.9	1.7
equals		
Net interest income	18.6	4.7
Noninterest income	5.2	1.3
less		
Noninterest expense[2]	16.9	4.3
Other revenue[3]	0.0	
less		
Provisions	9.3	
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	-2.6	-0.7
Memo items		
Other comprehensive income[6]	-0.2	
Other effects on capital	*Actual 2018:Q4*	*2021: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 Noninterest expense 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 B.15.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	16.3	15.5	14.9
Tier 1 capital ratio	16.3	15.5	14.9
Total capital ratio	17.3	16.4	16.1
Tier 1 leverage ratio	9.2	8.8	8.6
Supplementary leverage ratio	8.3	7.9	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	5.7	3.5
First-lien mortgages, domestic	0.3	1.0
Junior liens and HELOCs, domestic	0.2	2.8
Commercial and industrial[2]	1.3	3.7
Commercial real estate, domestic	0.7	2.3
Credit cards	2.2	15.2
Other consumer[3]	0.5	2.2
Other loans[4]	0.5	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	207.6	216.5

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	6.8	1.7
equals		
Net interest income	18.1	4.5
Noninterest income	5.7	1.4
less		
Noninterest expense[2]	16.9	4.3
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]	0.0	
equals		
Net income before taxes	1.2	0.3
Memo items		
Other comprehensive income[6]	0.2	
Other effects on capital	*Actual 2018:Q4*	*2021: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 Noninterest expense 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 B.16.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	21.7	16.8	16.0
Tier 1 capital ratio	25.7	20.7	19.9
Total capital ratio	27.0	22.8	21.9
Tier 1 leverage ratio	11.3	9.0	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 2019:Q1 to 2021: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, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	1.3	2.2
First-lien mortgages, domestic	0.2	1.7
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.5	8.5
Commercial real estate, domestic	0.0	5.5
Credit cards	0.0	16.4
Other consumer[3]	0.2	0.7
Other loans[4]	0.3	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	54.1	54.0

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	2.3	1.6
equals		
Net interest income	3.0	2.1
Noninterest income	24.7	17.2
less		
Noninterest expense[2]	25.4	17.6
Other revenue[3]	0.0	
less		
Provisions	1.6	
Realized losses/gains on securities (AFS/HTM)	0.0	
Trading and counterparty losses[4]	1.5	
Other losses/gains[5]	0.0	
equals		
Net income before taxes	-0.8	-0.6
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2018:Q4*	*2021: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 Noninterest expense 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 B.16.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	21.7	19.9	18.6
Tier 1 capital ratio	25.7	23.8	22.6
Total capital ratio	27.0	25.5	24.1
Tier 1 leverage ratio	11.3	10.4	9.9
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 2019:Q1 to 2021: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, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	0.8	1.4
First-lien mortgages, domestic	0.1	0.8
Junior liens and HELOCs, domestic	0.0	0.0
Commercial and industrial[2]	0.3	5.2
Commercial real estate, domestic	0.0	2.2
Credit cards	0.0	11.3
Other consumer[3]	0.2	0.6
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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	54.1	55.4

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	2.8	1.9
equals		
Net interest income	3.1	2.1
Noninterest income	25.4	17.4
less		
Noninterest expense[2]	25.7	17.6
Other revenue[3]	0.0	
less		
Provisions	1.1	
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	1.1	0.8
Memo items		
Other comprehensive income[6]	0.0	
Other effects on capital	*Actual 2018:Q4*	*2021: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 Noninterest expense 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 B.17.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.1	8.1	8.1
Tier 1 capital ratio	10.7	9.7	9.7
Total capital ratio	12.6	11.4	11.4
Tier 1 leverage ratio	9.0	8.2	8.2
Supplementary leverage ratio	7.2	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	16.3	5.6
First-lien mortgages, domestic	0.9	1.4
Junior liens and HELOCs, domestic	0.6	3.9
Commercial and industrial[2]	5.2	6.3
Commercial real estate, domestic	3.0	8.2
Credit cards	3.9	16.4
Other consumer[3]	1.5	3.6
Other loans[4]	1.1	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	381.7	393.6

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	18.2	3.9
equals		
Net interest income	27.5	5.8
Noninterest income	20.5	4.4
less		
Noninterest expense[2]	29.9	6.3
Other revenue[3]	0.0	
less		
Provisions	17.6	
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	0.5	0.1
Memo items		
Other comprehensive income[6]	2.6	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-2.4	0.2

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

2 Noninterest expense 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 B.17.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	9.1	10.0	9.6
Tier 1 capital ratio	10.7	11.5	11.2
Total capital ratio	12.6	12.9	12.9
Tier 1 leverage ratio	9.0	9.8	9.6
Supplementary leverage ratio	7.2	7.8	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	10.4	3.5
First-lien mortgages, domestic	0.4	0.6
Junior liens and HELOCs, domestic	0.4	2.6
Commercial and industrial[2]	3.5	4.2
Commercial real estate, domestic	1.4	3.7
Credit cards	2.9	12.0
Other consumer[3]	1.1	2.6
Other loans[4]	0.7	3.0

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

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

3 Other consumer loans include student loans and automobile loans.

4 Other loans include international real estate loans.

Risk-weighted assets, actual 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	381.7	398.9

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	19.6	4.1
equals		
Net interest income	27.9	5.8
Noninterest income	21.2	4.4
less		
Noninterest expense[2]	29.5	6.2
Other revenue[3]	0.0	
less		
Provisions	10.1	
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	9.4	2.0
Memo items		
Other comprehensive income[6]	2.5	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-2.4	0.0

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

2 Noninterest expense 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 B.18.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.7	10.1	9.5
Tier 1 capital ratio	13.5	11.8	11.2
Total capital ratio	16.6	14.8	14.5
Tier 1 leverage ratio	9.1	8.0	7.6
Supplementary leverage ratio	7.7	6.8	6.5

1 The capital ratios are calculated using capital action assumptions provided within the Dodd-Frank Act stress testing rule. See 12 CFR 252.56(b). These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	43.5	4.5
First-lien mortgages, domestic	3.2	1.1
Junior liens and HELOCs, domestic	1.3	2.8
Commercial and industrial[2]	11.0	5.6
Commercial real estate, domestic	10.0	7.7
Credit cards	6.8	17.2
Other consumer[3]	4.3	5.8
Other loans[4]	6.7	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	1,247.2	1,277.9

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	62.2	3.3
equals		
Net interest income	112.4	5.9
Noninterest income	78.3	4.1
less		
Noninterest expense[2]	128.5	6.7
Other revenue[3]	0.0	
less		
Provisions	47.9	
Realized losses/gains on securities (AFS/HTM)	2.3	
Trading and counterparty losses[4]	8.5	
Other losses/gains[5]	1.4	
equals		
Net income before taxes	2.1	0.1
Memo items		
Other comprehensive income[6]	2.9	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-5.8	-2.9

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

2 Noninterest expense 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 B.18.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 2018:Q4 and projected 2019:Q1–2021:Q1

Percent

Regulatory ratio	Actual 2018:Q4	Stressed capital ratios[1]	
		Ending	Minimum
Common equity tier 1 capital ratio	11.7	12.3	11.4
Tier 1 capital ratio	13.5	14.0	13.1
Total capital ratio	16.6	16.6	16.2
Tier 1 leverage ratio	9.1	9.4	8.9
Supplementary leverage ratio	7.7	8.0	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 2019:Q1 to 2021:Q1. Supplementary leverage ratio projections only include estimates for firms subject to the advanced approaches.

Projected loan losses, by type of loan, 2019:Q1–2021:Q1

Loan type	Billions of dollars	Portfolio loss rates (percent)[1]
Loan losses	25.8	2.6
First-lien mortgages, domestic	1.2	0.4
Junior liens and HELOCs, domestic	0.7	1.4
Commercial and industrial[2]	7.1	3.6
Commercial real estate, domestic	4.1	3.2
Credit cards	5.0	12.6
Other consumer[3]	3.6	4.7
Other loans[4]	4.0	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 2018:Q4 and projected 2021:Q1

Billions of dollars

Item	Actual 2018:Q4	Projected 2021:Q1
Risk-weighted assets[1]	1,247.2	1,299.1

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 2021:Q1

Item	Billions of dollars	Percent of average assets[1]
Pre-provision net revenue	69.2	3.6
equals		
Net interest income	112.9	5.8
Noninterest income	84.0	4.3
less		
Noninterest expense[2]	127.8	6.6
Other revenue[3]	0.0	
less		
Provisions	25.6	
Realized losses/gains on securities (AFS/HTM)	1.0	
Trading and counterparty losses[4]	4.1	
Other losses/gains[5]	1.0	
equals		
Net income before taxes	37.5	1.9
Memo items		
Other comprehensive income[6]	5.5	
Other effects on capital	*Actual 2018:Q4*	*2021:Q1*
AOCI included in capital (billions of dollars)[7]	-5.8	-0.3

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

2 Noninterest expense 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.

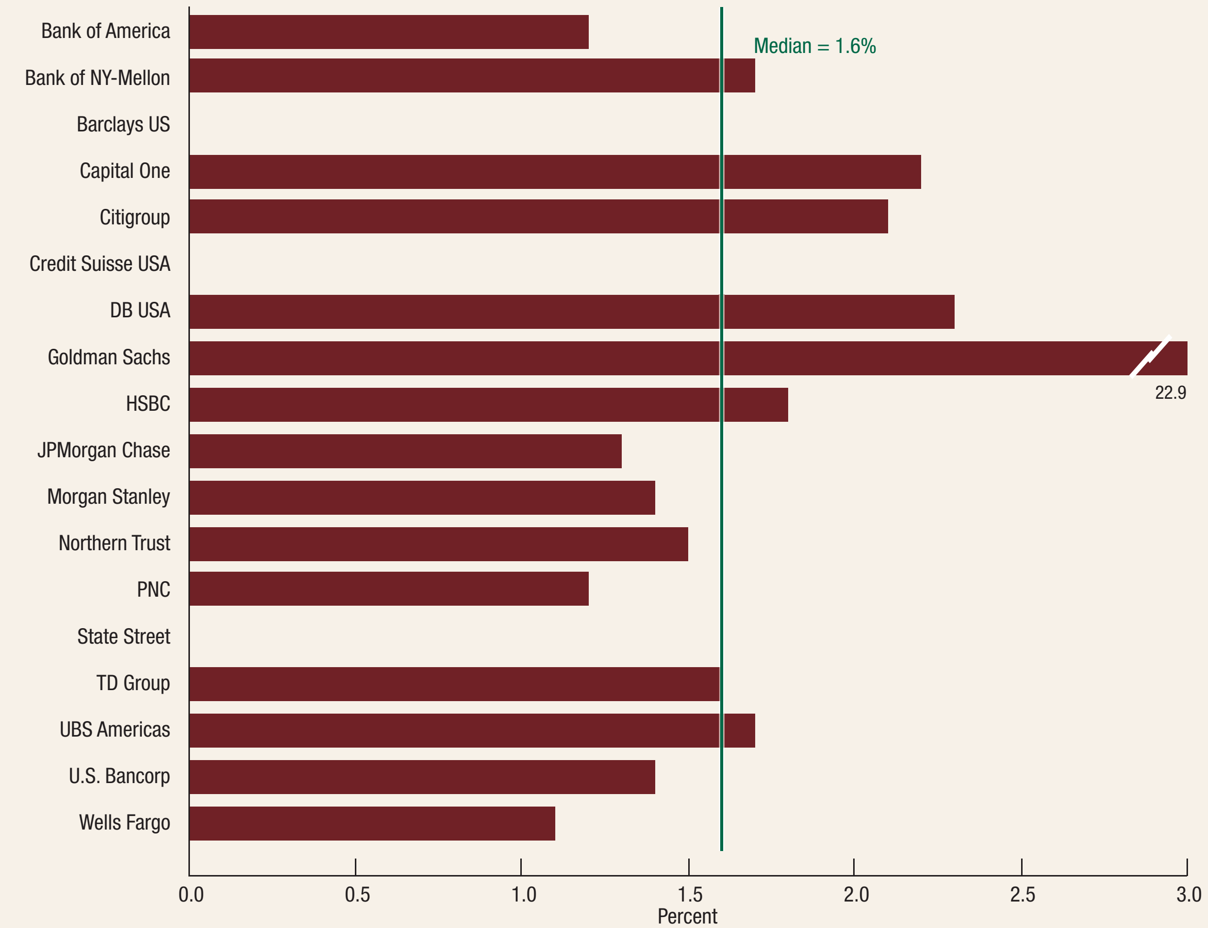
5 Other losses/gains include projected change in fair value of loans held for sale and loans held for investment measured under the fair-value option, and goodwill impairment losses.

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).

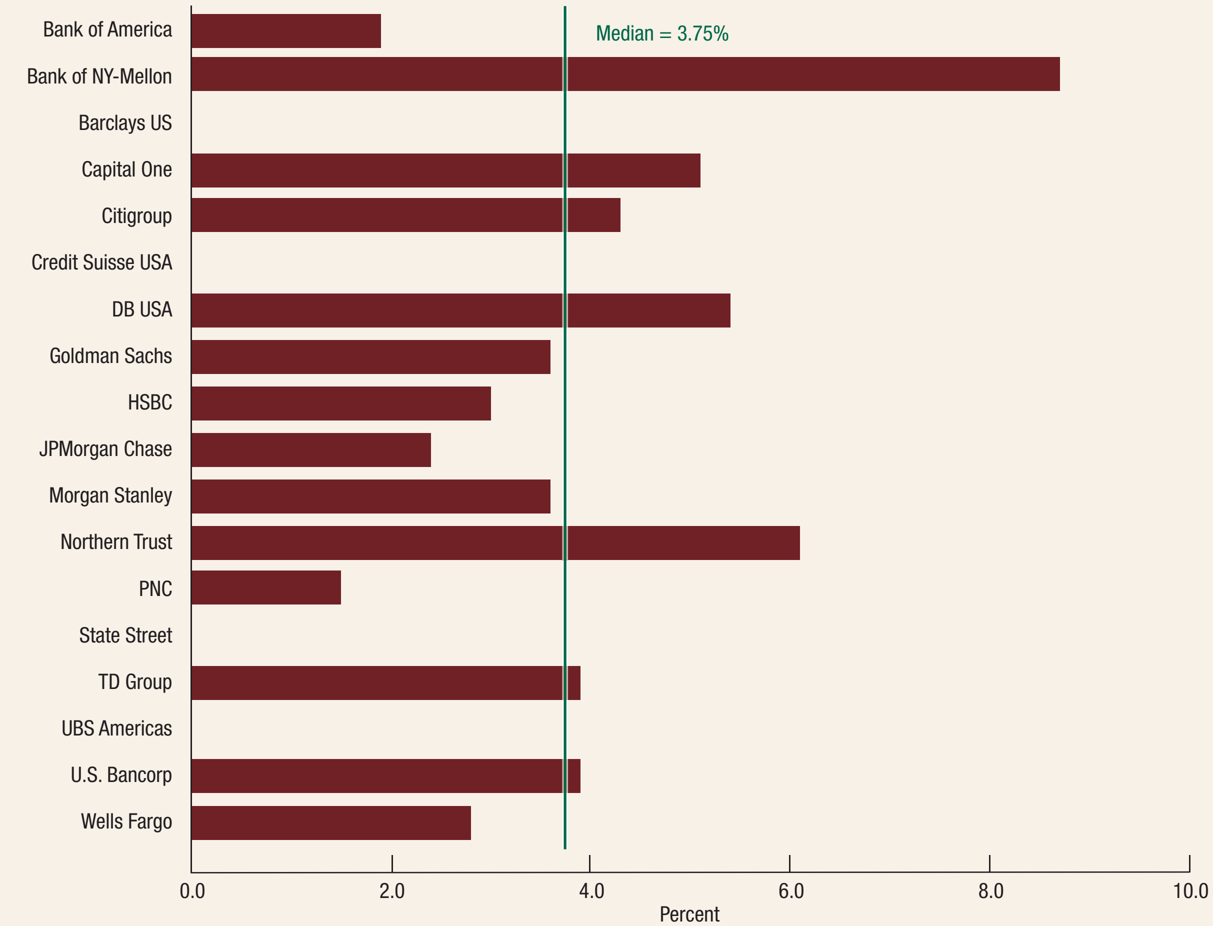
Appendix C: Additional Aggregate Results

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



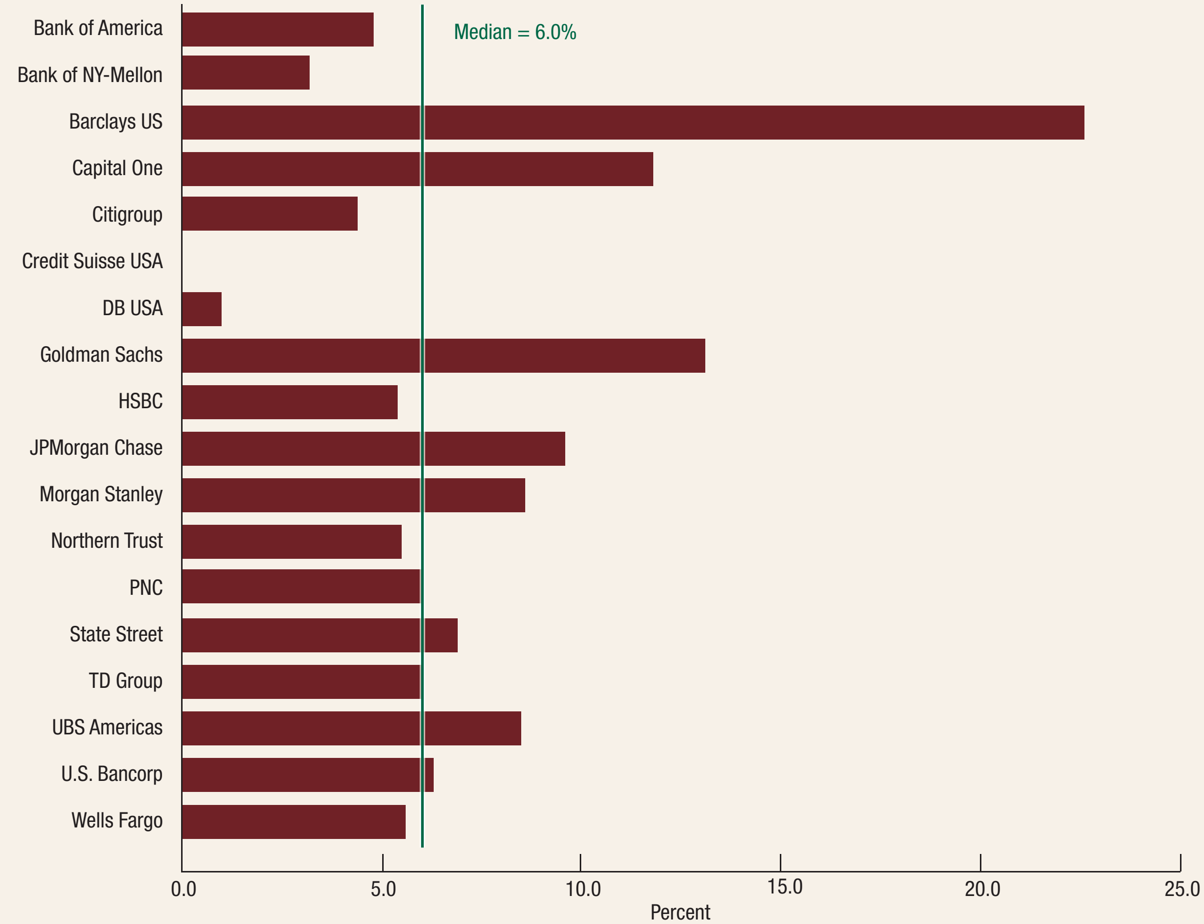
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

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



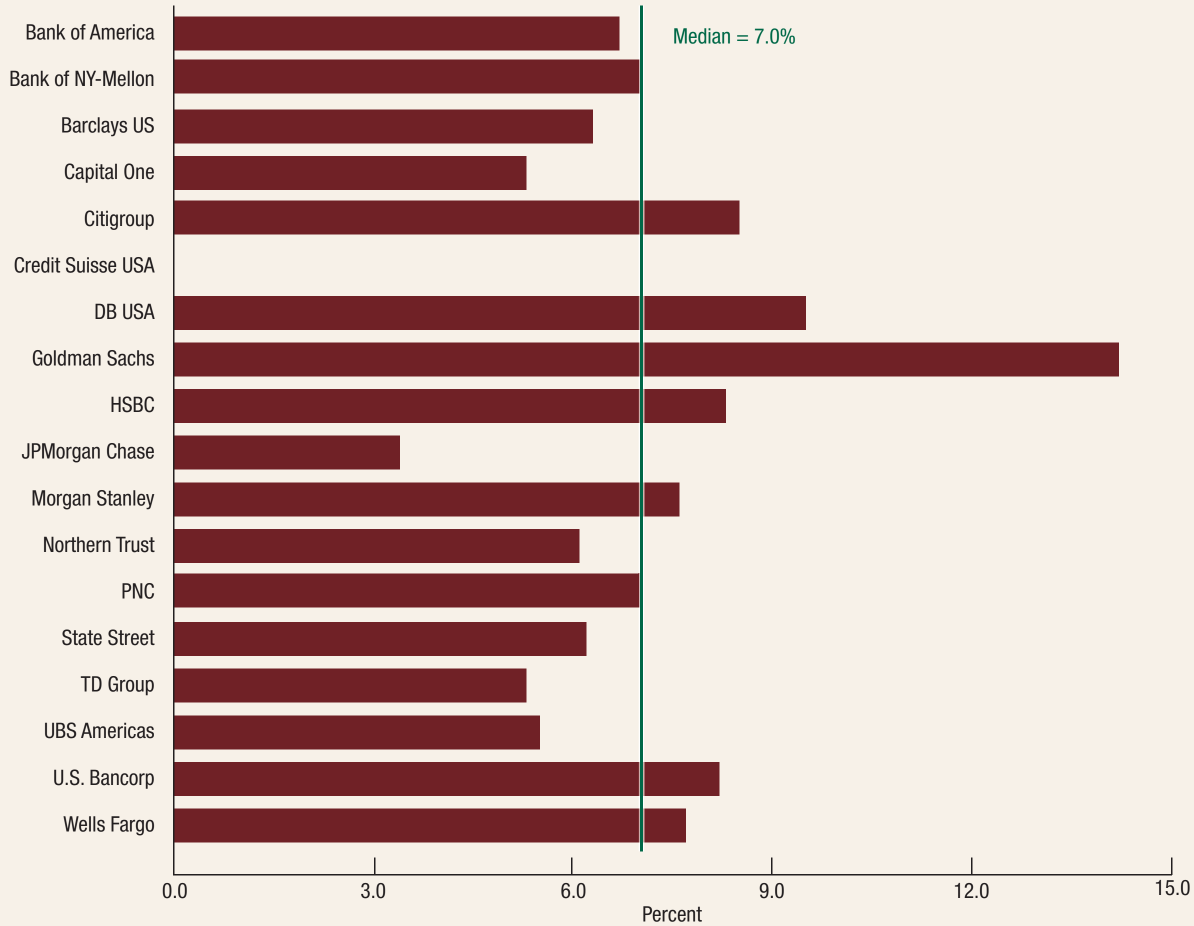
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.3. Commercial and industrial loss rates in the severely adverse scenario



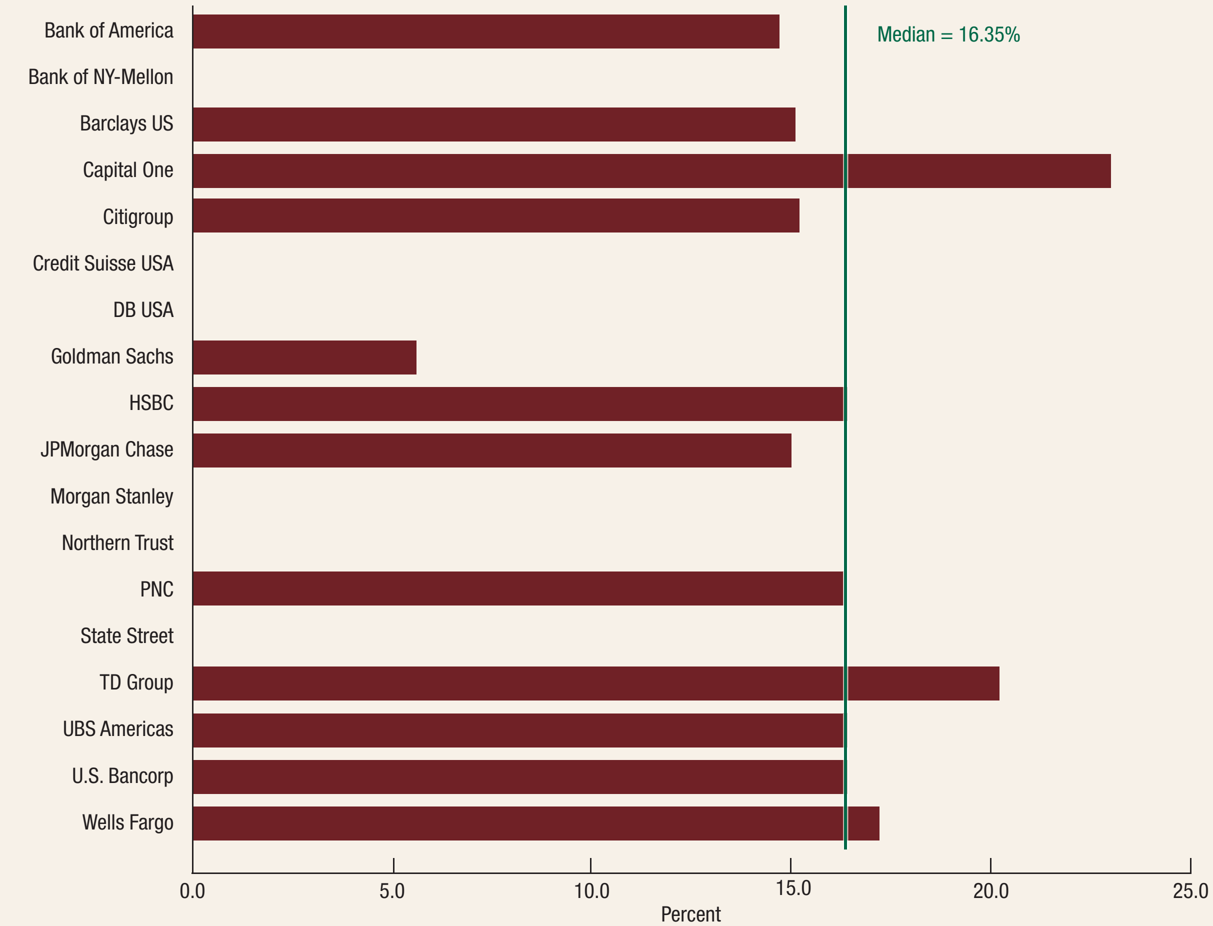
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances. Losses are calculated based on the exposure at default, which includes both outstanding balances and any additional drawdown of the credit line that occurs prior to default, while loss rates are calculated as a percent of outstanding balances.

Figure C.4. Commercial real estate, domestic loss rates in the severely adverse scenario



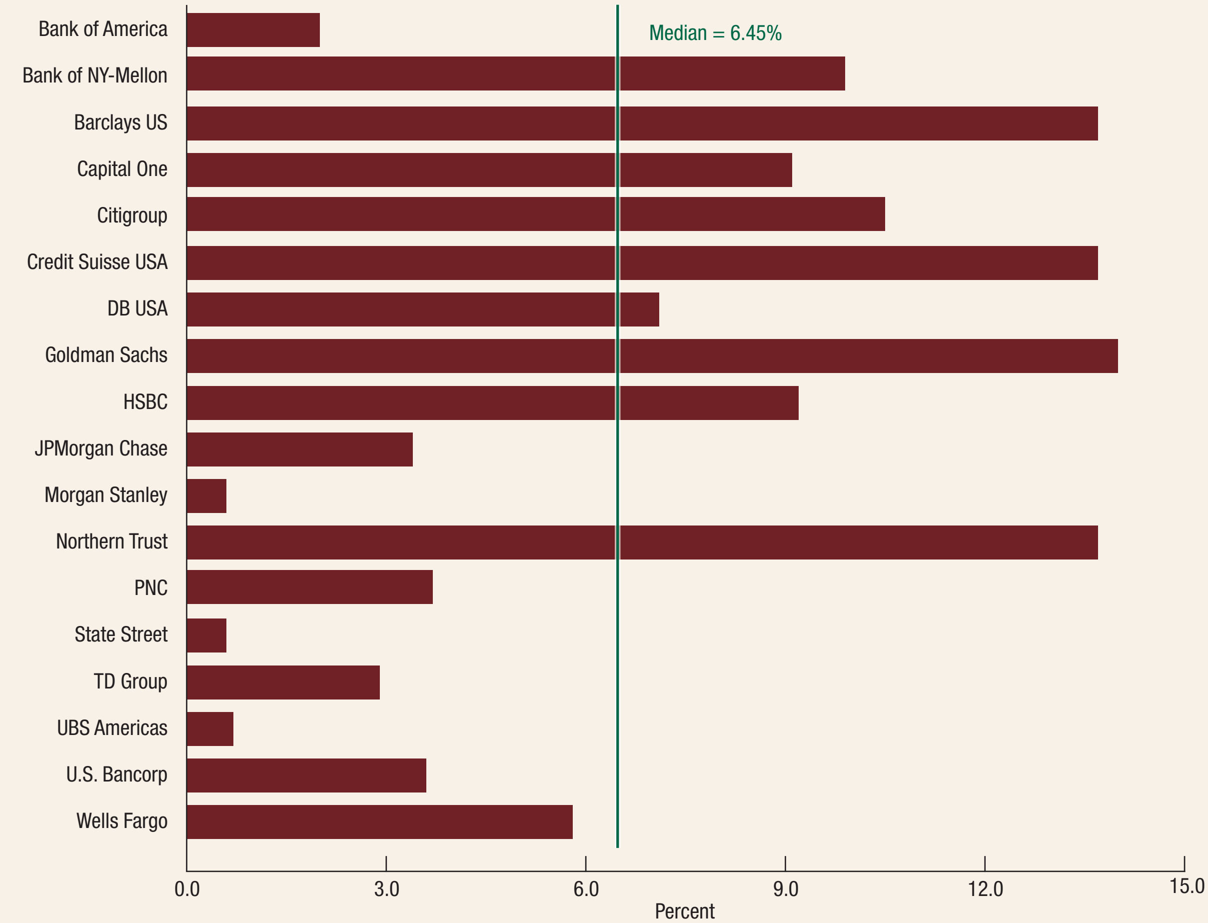
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.5. Credit card loss rates in the severely adverse scenario



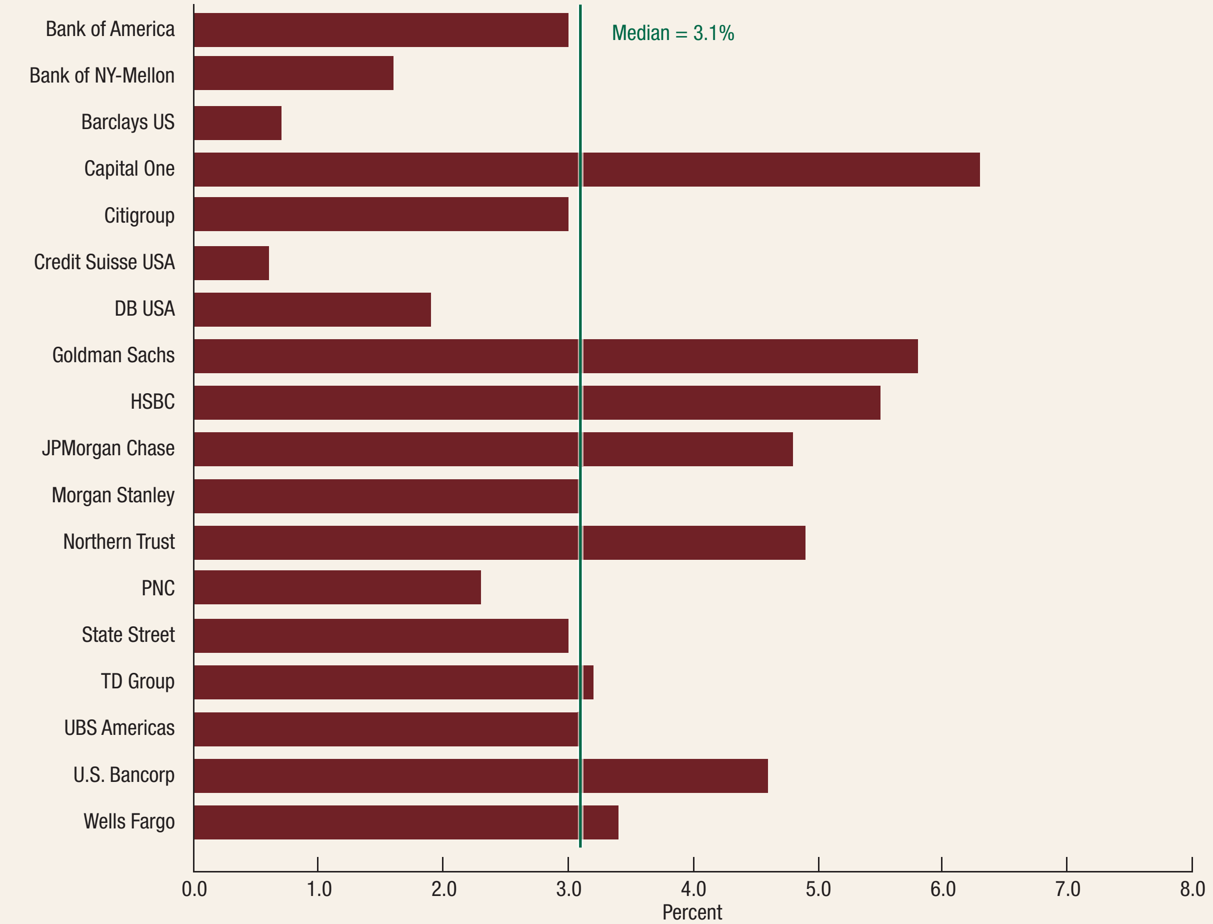
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.6. Other consumer loss rates in the severely adverse scenario



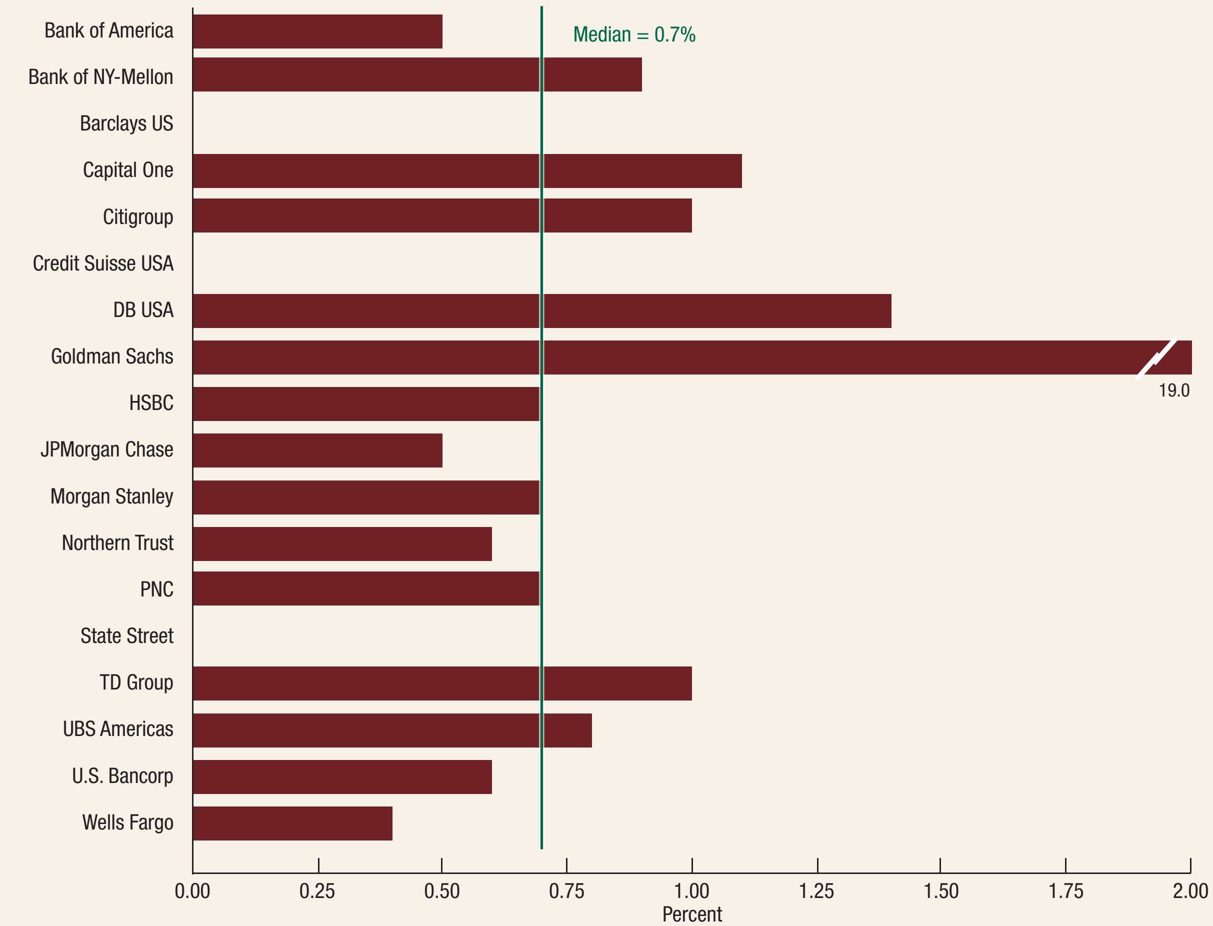
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.7. Other loans loss rates in the severely adverse scenario



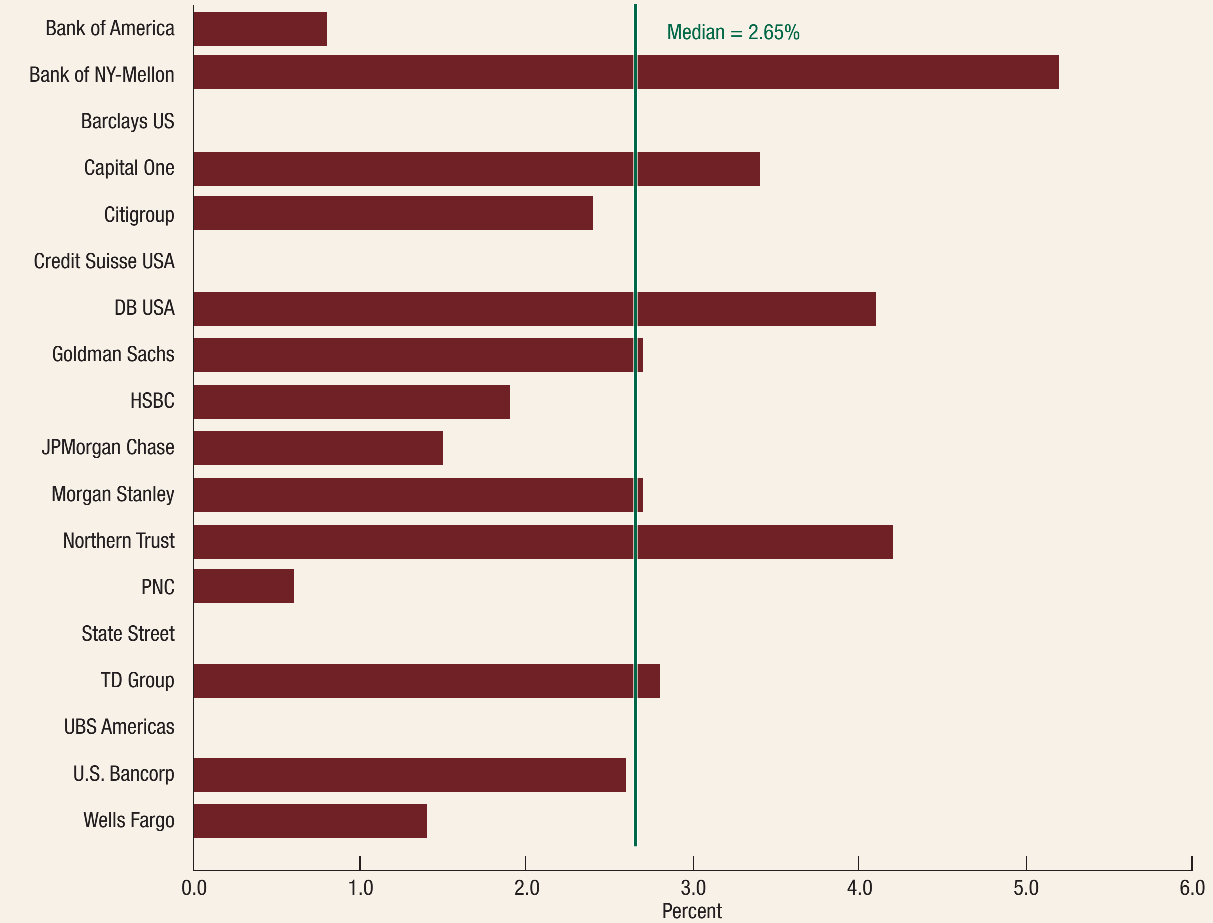
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.8. First-lien mortgages, domestic loss rates in the adverse scenario



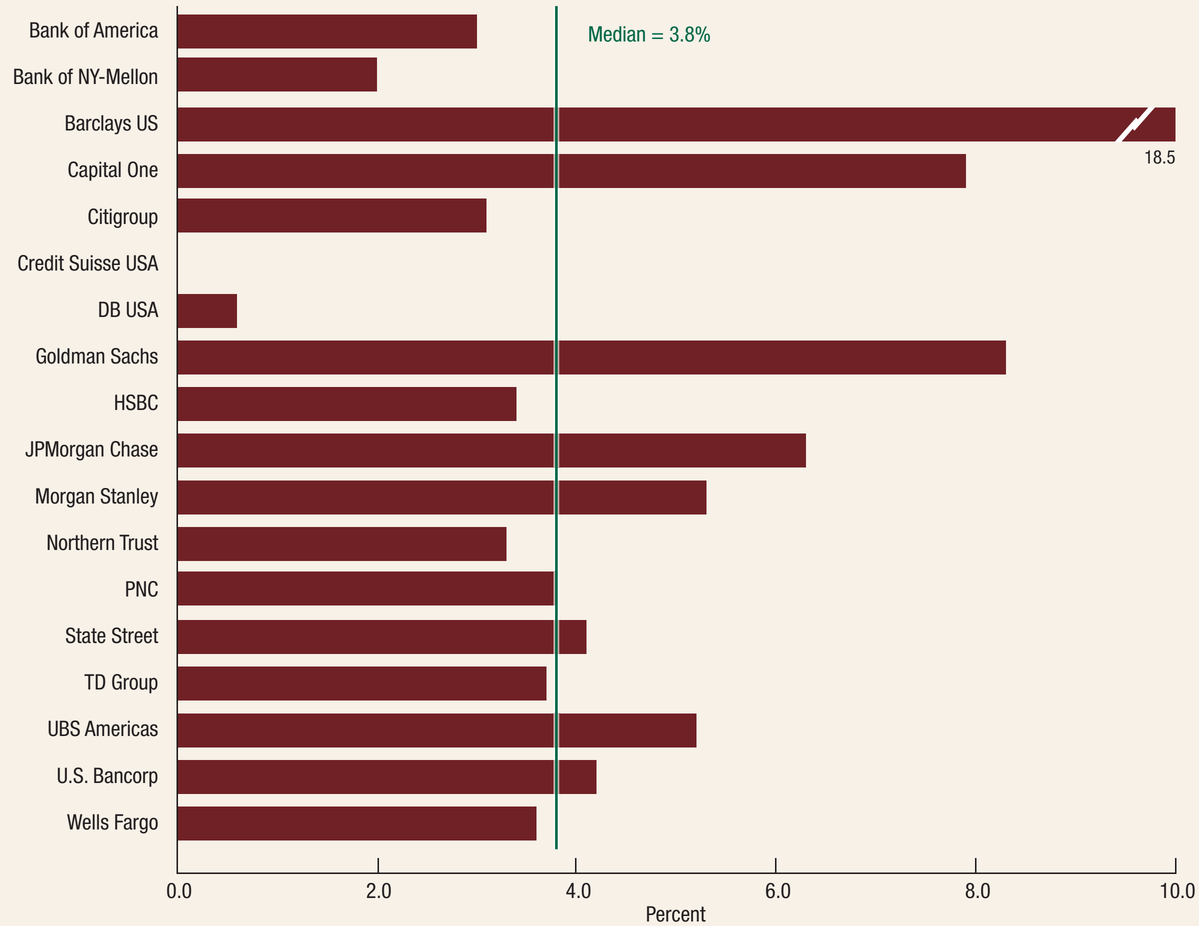
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.9. Junior liens and HELOCs, domestic loss rates in the adverse scenario



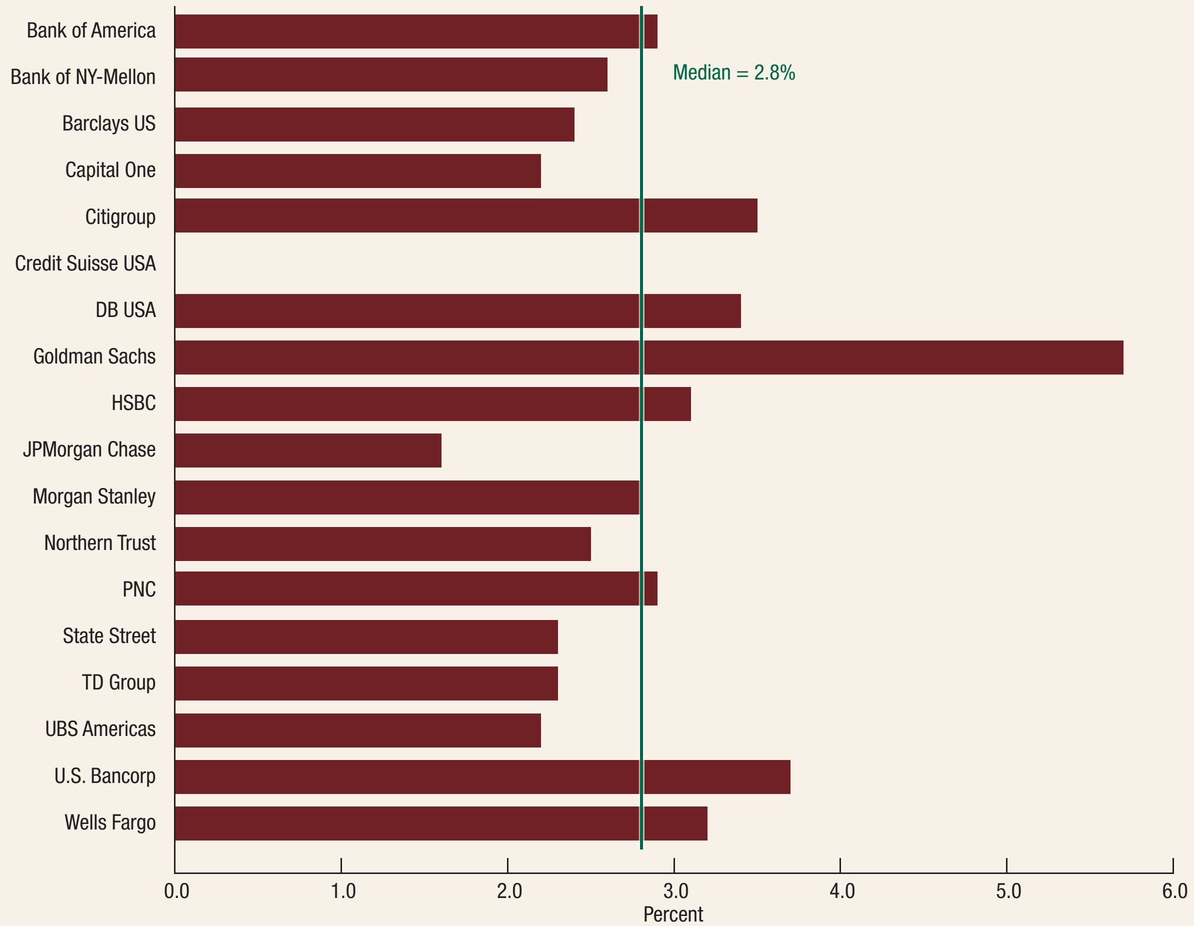
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.10. Commercial and industrial loss rates in the adverse scenario



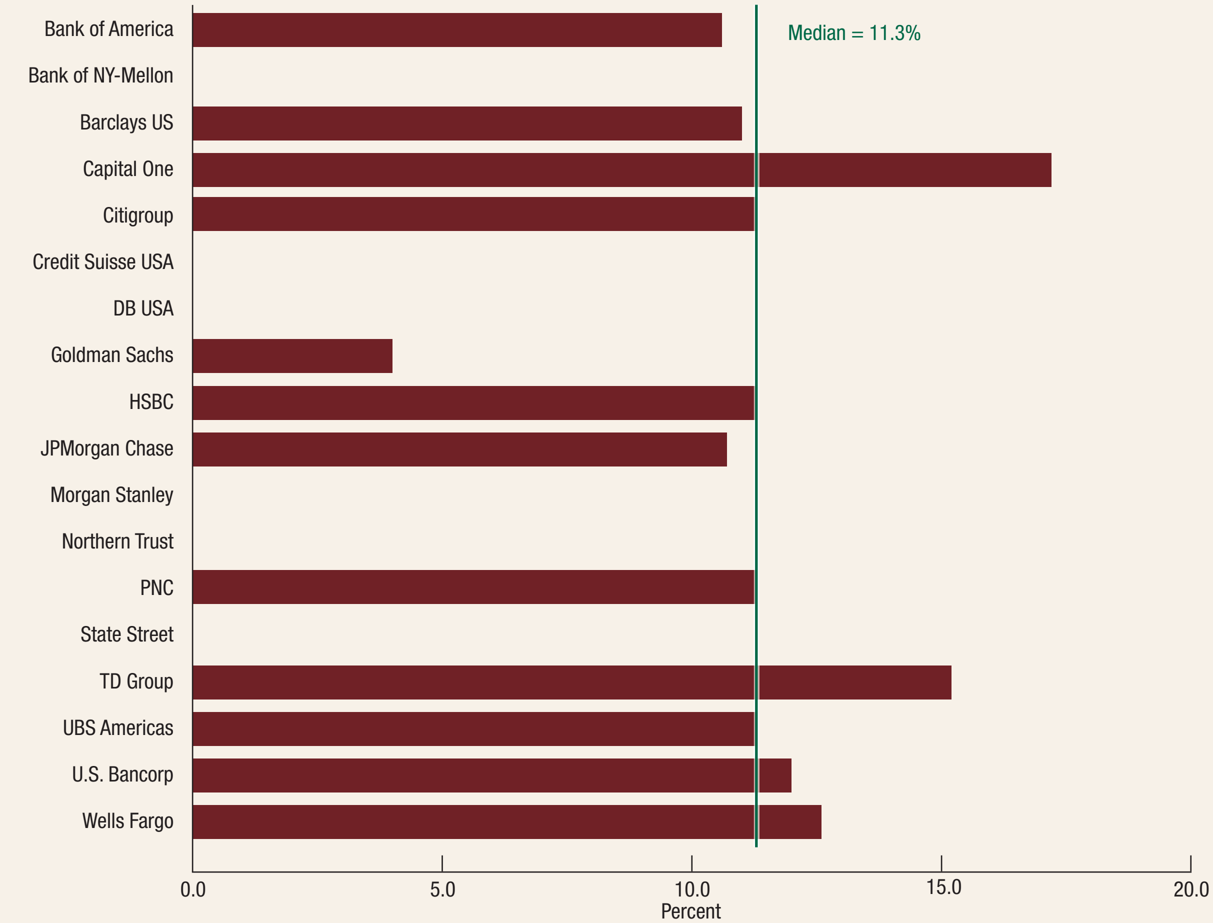
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances. Losses are calculated based on the exposure at default, which includes both outstanding balances and any additional drawdown of the credit line that occurs prior to default, while loss rates are calculated as a percent of outstanding balances.

Figure C.11. Commercial real estate, domestic loss rates in the adverse scenario



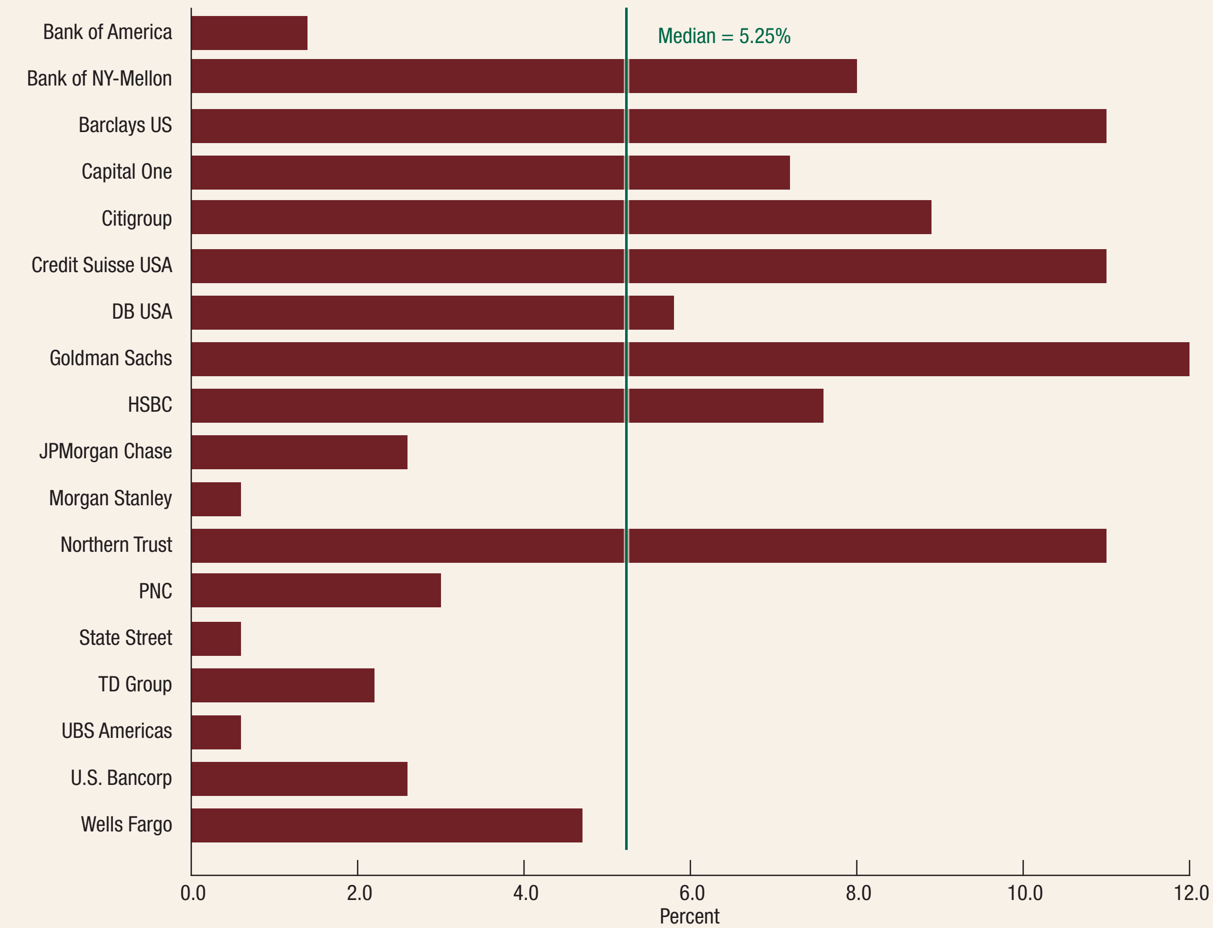
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.12. Credit card loss rates in the adverse scenario



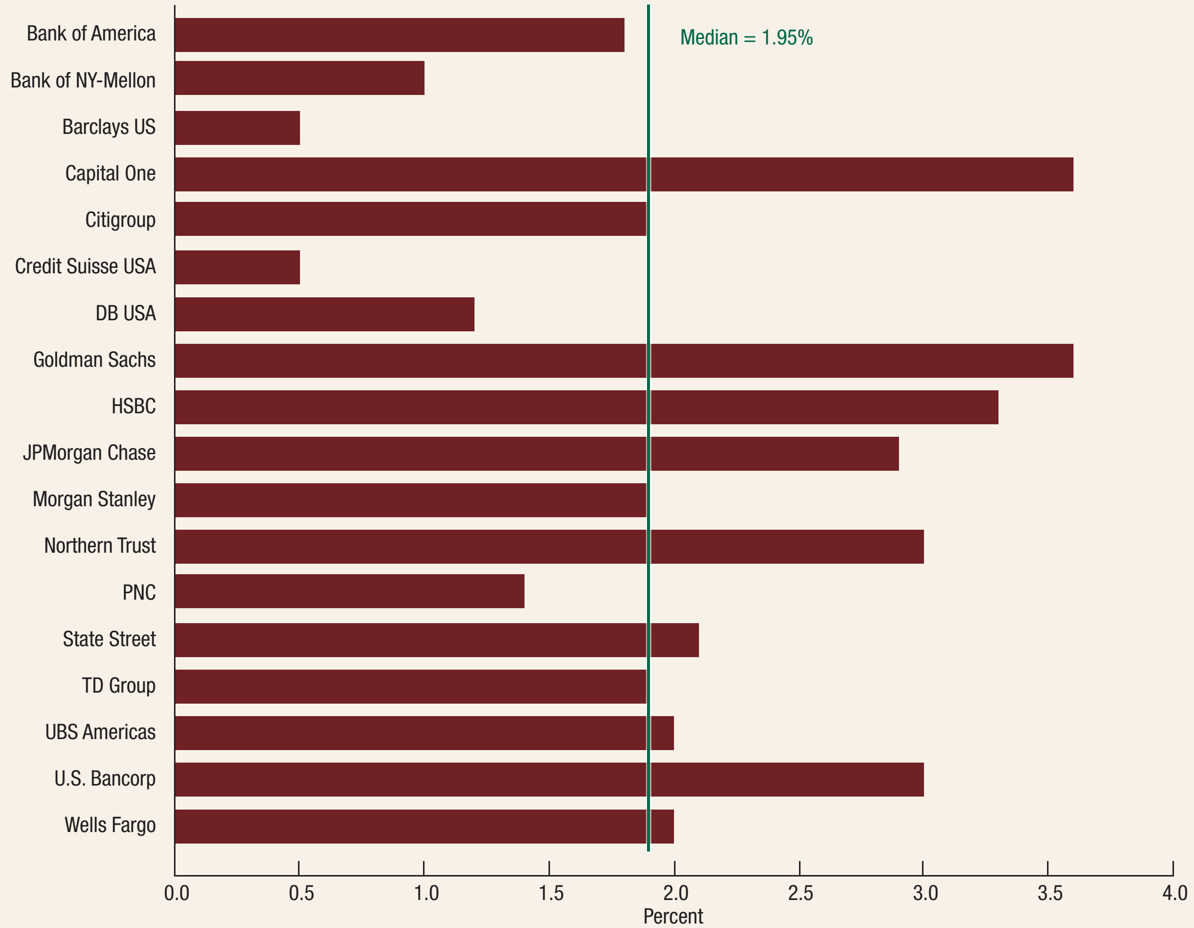
Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.13. Other consumer loss rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

Figure C.14. Other loans loss rates in the adverse scenario



Note: Estimates are for the nine-quarter period from 2019:Q1-2021:Q1 as a percent of average balances.

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