Comprehensive Capital Analysis and Review 2019: Assessment Framework and Results

June 2019

Board of Governors of the Federal Reserve System

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Preface

The Federal Reserve, through its 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 and can serve as a source of strength.

Annual assessment of the capital adequacy and capital planning practices of the largest and most complex banking organizations is a key component of that oversight. Doing so allows the Federal Reserve to determine whether bank holding companies (BHCs) and U.S. intermediate holding companies of foreign banking organizations (IHCs) have sufficient capital to continue operating and lending to households and businesses, even during times of economic and financial market stress.

This annual assessment 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)** exercise includes a quantitative assessment for all subject firms and a qualitative assessment of the capital planning practices of the largest and most complex firms' capital planning practices. The CCAR quantitative assessment uses the same results as DFAST and incorporates firms' planned capital actions, such as dividend payments and common stock repurchases. In the qualitative assessment, the Federal Reserve evaluates how the largest and most complex firms identify, measure, and determine capital needs for their material risks. At the conclusion of the process, the Federal Reserve can object to all subject firms' capital plans on quantitative grounds and certain firms' capital plans on qualitative grounds.

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

Contents

Executive Summary

The results of the 2019 CCAR exercise indicate that the financial system is strong and resilient. Large banks have more than doubled their capital levels since the financial crisis, in part because of supervisory programs like CCAR. (For more information on recent trends in capital levels, see box 1.) Capital is central to a firm's ability to absorb losses and continue operating and lending to creditworthy businesses and consumers. The largest firms have also made substantial progress in strengthening their capital planning practices.

Quantitative Assessment

In the supervisory post-stress capital assessment, the Federal Reserve estimates that the aggregate common equity tier 1 ratio for the 18 firms participating in CCAR 2019 would decline in the severely adverse scenario from 12.3 percent in the fourth quarter of 2018 (the starting point for the exercise) to 6.6 percent at its minimum point.[2] This post-stress common equity tier 1 ratio is 1.7 percentage points higher than the firms' aggregate common equity tier 1 ratio in the first quarter of 2009. (See tables 1 and 2 for more on the aggregate post-stress capital ratios for the firms that participated in CCAR 2019.)

Qualitative Assessment

The Federal Reserve observes that, on balance, most of the 17 firms participating in the CCAR 2019 qualitative assessment have continued to strengthen their capital planning practices since last year, with many of those firms meeting supervisory expectations for capital planning.[3] Certain firms that are newer to CCAR have additional work to undertake to have sound, established capital planning practices, and a limited number of firms that have been subject to the qualitative assessment for a number of years have certain weaknesses that limit their capital planning capabilities. For further information, see the Qualitative Assessment Framework, Process, and Summary of Results section.

Capital Plan Decisions

No firms were objected to on quantitative or qualitative grounds in CCAR 2019. The Board of Governors of the Federal Reserve System (Board) issued a conditional non-objection to Credit Suisse Holdings (USA), Inc.'s (Credit Suisse) capital plan and is requiring the firm to address weaknesses in its capital adequacy process by October 27, 2019. The Board's decision on each firm's capital plan is presented in table 3.

Background on CCAR

The 2007–09 financial crisis illustrated that confidence in the capitalization and overall financial strength of a financial institution can erode rapidly in the face of changes in current or expected eco-

[2] The 18 firms subject to CCAR's quantitative assessment in 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 Holding LLC; U.S. Bancorp; and Wells Fargo & Company.

In addition, DWS USA Corporation, a second IHC subsidiary of Deutsche Bank AG with approximately $2 billion in total consolidated assets, was included in the quantitative assessment of CCAR 2019 and maintained capital above each regulatory minimum ratio on a post-stress basis.

[3] The 17 firms subject to CCAR's qualitative assessment in 2019 include all of those noted in footnote 2, other than Northern Trust Corporation. The firm's capital planning practices are assessed through the Federal Reserve's Horizontal Capital Review.

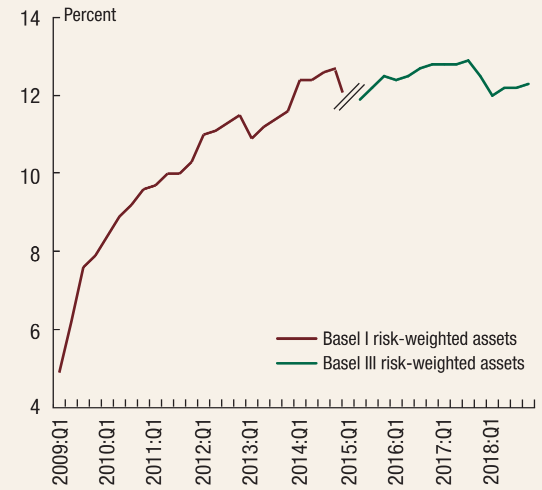
Box 1: Overview of Trends in Capital Levels

Figure A provides the aggregate ratio of common equity capital to risk-weighted assets for the firms in CCAR from 2009 through the fourth quarter of 2018.[1] This ratio has more than doubled from 4.9 percent in the first quarter of 2009 to 12.3 percent in the fourth quarter of 2018. That gain reflects a total increase of approximately $660 billion in common equity capital from the beginning of 2009 among these firms, bringing their total common equity capital to over $1.02 trillion in the fourth quarter of 2018.

In the aggregate, the 18 firms participating in CCAR 2019 have estimated that their common equity will remain near current levels between the third quarter of 2019 and the second quarter of 2020, based on their planned capital actions and net income projections under their baseline scenario.

These 18 firms hold about 70 percent of the total assets of all U.S. financial companies.[2] The financial crisis revealed that both the level and quality of capital contribute to a firm's ability to continue operating under adverse conditions. In part through programs like CCAR, the quantity and quality of capital held by these firms has improved, increasing the resilience of the banking sector and strengthening the financial system more broadly.

Figure A. Aggregate common equity capital ratio of CCAR 2019 firms



Source: FR Y-9C.

[1] The Federal Reserve's evaluation of a firm's common equity capital was initially measured using a tier 1 common capital ratio but now is evaluated using a common equity tier 1 capital ratio, which was introduced into the regulatory capital framework with the implementation of Basel III. From 2009 through 2013, tier 1 common was used to measure common equity capital for all firms. In 2014, both tier 1 common capital (for non-advanced approaches firms) and common equity tier 1 capital (for advanced approaches firms) were used. From 2015 to present, common equity tier 1 capital was used for all firms. Under both measures, firms have significantly increased their capital position since 2009. Not all of the 18 firms participating in CCAR 2019 reported data for all periods since 2009.

[2] This figure uses information from all firms that file the FR Y-9C, including domestic BHCs, IHCs, savings and loan holding companies, and securities holding companies, to define U.S. financial companies.

nomic and financial conditions. More importantly, the crisis revealed that sudden actual or expected erosions of capital can lead to loss of investor and counterparty confidence in the financial strength of a systemically important financial institution, which may not only imperil that institution's viability, but also harm the broader financial system. For this reason, the Federal Reserve has made assessments of capital planning and post stress analysis of capital adequacy a cornerstone of its supervision of the largest financial institutions.

The Federal Reserve's annual CCAR exercise is an intensive assessment of the capital adequacy and capital planning practices of large U.S. financial institutions. The quantitative assessment helps to ensure that firms maintain sufficient capital to continue operations throughout times of economic and financial market stress. The horizontal nature of the assessment offers insights into the condition of the U.S. financial system, including whether firms are sufficiently resilient to continue to lend to households and businesses under such adverse conditions. The CCAR process can also act as a counterweight to pressures that a firm may face to use capital distributions to signal financial strength, even when facing a deteriorating or highly stressful environment.

The qualitative assessment seeks to ensure that the largest firms have strong practices for assessing their capital needs that are supported by: effective firm-wide identification, measurement, and management of their material risks; strong internal controls; and effective oversight by senior management and boards of directors. By focusing on the key elements of capital planning, the qualitative assessment helps promote better risk management and greater resiliency at the firms. Each firm must support its capital planning decisions with a forward-looking, comprehensive analysis that takes into account the firm's unique risk profile and activities as well as the effect of highly stressful operating environments on its financial condition.

The results of the qualitative assessment are key inputs into other aspects of the Federal Reserve's supervisory program for the largest U.S. financial institutions and factor into annual supervisory assessments of each firm.

This report provides

1. background on the CCAR requirements;
2. descriptions of the assessment framework and summary of results for the quantitative assessment;
3. descriptions of the assessment framework, process, historical deficiencies, and summary of results for the qualitative assessment; and,
4. information about the process and requirements of CCAR 2019, including the consequences of an objection to a capital plan, the execution of planned capital distributions, the process for resubmitting a capital plan, and feedback provided by the Federal Reserve on a firm's capital plan.

Table 1. Projected minimum regulatory capital ratios under the severely adverse scenario, 2019:Q1 to 2021:Q1: 18 participating firms
Percent

Regulatory ratio	Actual 2018:Q4	Projected minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	12.3	6.5	6.6
Tier 1 capital ratio	14.0	8.3	8.4
Total capital ratio	16.4	10.6	10.7
Tier 1 leverage ratio	8.6	5.1	5.1
Supplementary leverage ratio	6.9	4.0	4.1

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by a firm after reviewing the Federal Reserve's stress test. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. The minimum capital ratios do not necessarily occur in the same quarter. Supplementary leverage ratio projections only include estimates for firms subject to advanced approaches.

Source: Federal Reserve estimates in the severely adverse scenario.

Table 2. Projected minimum regulatory capital ratios under the adverse scenario, 2019:Q1 to 2021:Q1: 18 participating firms
Percent

Regulatory ratio	Actual 2018:Q4	Projected minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	12.3	9.1	9.1
Tier 1 capital ratio	14.0	10.8	10.9
Total capital ratio	16.4	12.8	12.9
Tier 1 leverage ratio	8.6	6.7	6.7
Supplementary leverage ratio	6.9	5.3	5.4

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by a firm after reviewing the Federal Reserve's stress test. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. The minimum capital ratios do not necessarily occur in the same quarter. Supplementary leverage ratio projections only include estimates for firms subject to advanced approaches.

Source: Federal Reserve estimates in the adverse scenario.

Table 3. Summary of the Federal Reserve's actions on capital plans in CCAR 2019

Non-objection to capital plan	Conditional non-objection to capital plan	Objection to capital plan
Bank of America Corporation	Credit Suisse Holdings (USA), Inc.	
The Bank of New York Mellon Corporation		
Barclays US LLC		
Capital One Financial Corporation		
Citigroup 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		
U.S. Bancorp		
UBS Americas Holding LLC		
Wells Fargo & Company		

Requirements in CCAR 2019

In November 2011, the Board adopted a capital plan rule requiring firms with consolidated assets of $50 billion or more to submit annual capital plans to the Federal Reserve for review.[4] In 2013, the Board adopted a revised regulatory capital framework to address shortcomings in capital requirements that became apparent during the financial crisis.[5] A firm must meet the regulatory capital requirements for each quarter of the planning horizon under both expected and stressful conditions in CCAR. In February 2017, the Federal Reserve amended the capital plan rule to remove large and noncomplex firms from the qualitative assessment of CCAR. In February 2019, the Federal Reserve announced that certain firms with total consolidated assets between $100 billion and $250 billion would not be subject to the company-run and supervisory stress testing requirements nor the requirement to submit a capital plan during the 2019 cycle.[6] In March 2019, the Federal Reserve adopted a final rule that eliminated the Board's authority to object to capital plans on qualitative grounds for firms other than five recently subject to CCAR that continue to exhibit material deficiencies in capital planning.[7]

For the CCAR 2019 exercise, the Federal Reserve sent a letter to firms defining the scope of the exercise in December 2018, issued instructions for the exercise on March 6, 2019,[8] and received capital plans from participating firms on April 5, 2019.

Under the capital plan rule, a subject firm must include in its annual capital plan an assessment of the expected uses and sources of capital over the planning horizon under expected and stressful conditions, a detailed description of the firm's processes for assessing capital adequacy, the firm's capital policy, and a discussion of any expected changes to the firm's business plan that are likely to have a material impact on the firm's capital adequacy or liquidity.[9]

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4 See 12 CFR 225.8. Asset size is measured over the previous four calendar quarters as reported on the FR Y-9C regulatory report. If a firm has not filed the FR Y-9C for each of the four most recent consecutive quarters, average total consolidated assets means the average of the company's total consolidated assets, as reported on the company's FR Y-9C, for the most recent quarter or consecutive quarters.

5 See 78 FR 62018 (October 11, 2013); 12 CFR part 217.

6 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. These firms remain subject to capital planning requirements and will be subject to supervisory stress testing and capital plan submission requirements in 2020.

7 See Board of Governors of the Federal Reserve System, "Federal Reserve Board Announces It Will Limit the Use of the 'Qualitative Objection' in Its Comprehensive Capital Analysis and Review (CCAR) Exercise, Effective for the 2019 Cycle," press release, March 6, 2019, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20190306b.htm. In CCAR 2019, Barclays US LLC; Credit Suisse Holdings (USA), Inc.; DB USA Corporation; TD Group US Holdings LLC; and UBS Americas Holding LLC are subject to the qualitative objection.

8 See Board of Governors of the Federal Reserve System, *Comprehensive Capital Analysis and Review 2019 Summary Instructions* (Washington: Board of Governors, March 2019), https://www.federalreserve.gov/newsevents/pressreleases/bcreg20190306b.htm.

9 See 12 CFR 225.8(e)(2).

Quantitative Assessment Framework and Summary of Results

Assessment Framework

In the quantitative assessment, the Federal Reserve evaluated each firm's ability to maintain post-stress capital ratios above the applicable minimum regulatory capital ratios in effect during each quarter of the planning horizon under both expected and stressful conditions, after taking the capital actions described in the BHC baseline scenario of its capital plan. The CCAR quantitative assessment is based both on: (a) the results of the firm's internal stress tests and (b) post-stress capital ratios estimated by the Federal Reserve under the supervisory scenarios (CCAR supervisory post-stress capital analysis). The Federal Reserve may object to the capital plan of any firm that has not demonstrated an ability to maintain capital above each minimum regulatory capital ratio throughout the planning horizon in the post-stress capital analysis.

The CCAR supervisory post-stress capital analysis is based on estimates of net income, total assets, and risk-weighted assets from the Federal Reserve's supervisory stress test conducted under the Dodd-Frank Act.[10] (For a comparison of DFAST and CCAR, see box 2.) As described in the overview of the methodology of DFAST published on March 28, 2019, for these projections, the Federal Reserve uses data provided by all firms in the CCAR quantitative assessment and a set of models developed or selected by the Federal Reserve.[11]

The supervisory projections are conducted under three hypothetical macroeconomic and financial market scenarios developed by the Federal Reserve: the baseline, adverse, and severely adverse supervisory scenarios. While the same supervisory scenarios are applied to all firms, a subset of firms was also subject to two additional components in the severely adverse and adverse scenarios: the global market shock and the largest counterparty default (LCPD) component.[12] Firms were required to conduct stress tests using the same supervisory scenarios, at least one stress scenario developed by the firm (the BHC stress scenario), and a baseline scenario developed by the firm (BHC baseline scenario).[13]

As noted, the Federal Reserve incorporates a firm's planned capital actions under its baseline scenario, including any capital actions associated with business plan changes, in projecting the firm's post-stress capital ratios. Thus, the firms are assumed to maintain the level of dividends, share repurchases, and other capital distributions they plan to execute over the planning horizon despite the hypothetical severe deterioration in the economic and financial environment. In an actual downturn, firms may reduce capital distributions under stressful conditions. However, the goal of the CCAR supervisory post-stress capital

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[10] For more on the methodology of the Federal Reserve's supervisory stress test, see Board of Governors of the Federal Reserve System, *Dodd-Frank Act Stress Test 2019: Supervisory Stress Test Methodology* (Washington: Board of Governors, March 2019), https://www.federalreserve.gov/publications/files/2019-march-supervisory-stress-test-methodology.pdf.

[11] For CCAR 2019, in addition to the models developed and data collected by the Federal Reserve, the Federal Reserve used proprietary models and data licensed from certain third-party providers. These providers are identified in *Dodd-Frank Act Stress Test 2019: Supervisory Stress Test Methodology*, https://www.federalreserve.gov/publications/files/2019-march-supervisory-stress-test-methodology.pdf, (see page 8, footnote 11).

[12] The 11 firms that were 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 Holdings LLC; and Wells Fargo & Company. See 12 CFR 252.54(b)(2).

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).

[13] The Federal Reserve expects a firm that uses the supervisory baseline scenario as its BHC baseline scenario to explain why the supervisory baseline scenario is an appropriate representation of the most likely outlook for the risk factors salient to the firm.

Box 2: Differences between the DFAST and the CCAR Post-stress Capital Analysis

While the DFAST and the CCAR supervisory post-stress capital analysis incorporate the same projections of net income, total assets, and risk-weighted assets, the two processes use different capital action assumptions to project post-stress capital levels and ratios.

Capital Action Assumptions for the DFAST

To project post-stress capital ratios for DFAST, the Federal Reserve uses a standardized set of capital action assumptions that are specified in the DFAST 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.
- Repurchases of such capital instruments are assumed to be zero.

The capital action assumptions do not include issuances of new common stock or preferred stock, except for issuances related to expensed employee compensation or in connection with a planned merger or acquisition to the extent that the merger or acquisition is reflected in the firm's pro forma balance sheet estimates.[1] 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.

Capital Actions for CCAR

For the CCAR post-stress capital analysis, the Federal Reserve uses a firm’s planned capital actions under its BHC baseline scenario, including both proposed capital issuances and proposed capital distributions, and incorporates related business plan changes.

As a result, post-stress capital ratios projected for DFAST can differ significantly from those for the CCAR post-stress capital analysis. For example, if a firm increases its dividend, or repurchases common equity in its planned capital actions, the firm’s post-stress capital ratios projected for the CCAR capital analysis could be lower than those projected for DFAST.

[1] See 12 CFR 252.56(b).

analysis is to provide a rigorous test of a firm’s financial condition even if the economy deteriorated and the firm continued to make its planned capital distributions—as many companies continued to do well into the financial crisis.

The Federal Reserve provided each firm with a one-time opportunity to adjust its planned capital distributions after it receives the Federal Reserve’s preliminary estimates of the firm’s post-stress capital ratios. To undertake this adjustment, the Federal Reserve considered reductions in capital distributions, including decreasing planned common stock dividends and/or reducing planned repurchases or redemptions of other regulatory capital instruments, relative to those initially submitted by a firm in its April 2019 capital plan. The Federal Reserve also considered increases in firms’ planned issuances of common stock in the third quarter of the planning horizon in instances where a firm has reduced its planned capital distributions to zero in the second through ninth quarters of the planning horizon. These adjusted capital actions, where applicable, were then incorporated into the Federal Reserve’s projections to calculate adjusted post-stress capital levels and ratios. The Federal Reserve discloses post-stress results with a firm’s original capital actions and any adjusted capital actions.

Summary of Quantitative Results

The Federal Reserve did not object to any firms’ capital plan on quantitative grounds.

Results of Quantitative Assessment

As noted above, no firms were objected to on quantitative grounds in CCAR 2019. Tables 4 and 5 contain minimum post-stress common equity tier 1 ratios for each of the firms under the supervisory severely adverse and adverse scenarios. The middle column of the table incorporates the original planned capital distributions submitted by the firms in April 2019. The ratios reported in the right-hand column incorporate any adjusted capital distributions submitted by a firm after receiving the Federal Reserve’s preliminary CCAR post-stress capital analysis.

Table 6 reports minimum capital ratios under the supervisory severely adverse scenario based on both the original and adjusted planned capital actions, where applicable. The ratios based on adjusted capital actions are only reported for those firms that submitted adjusted capital actions. In the supervisory severely adverse scenario, Capital One Financial Corporation (Capital One) and JPMorgan Chase & Co. (JPMorgan) were projected to have at least one minimum post-stress capital ratio lower than minimum required regulatory capital ratios based on its original planned capital actions. Capital One fell below the minimum required common equity tier 1 ratio, tier 1 capital ratio, and total capital ratio on a post-stress basis. JPMorgan fell below the minimum required common equity tier 1 ratio, tier 1 leverage ratio, and the supplementary leverage ratio on a post-stress basis. (See the applicable minimum capital ratios for provided in table 6.) However, both Capital One and JPMorgan were able to maintain their post-stress regulatory capital ratios above minimum requirements in the severely adverse scenario after submitting adjusted capital actions.

Table 7 reports minimum capital ratios in the supervisory adverse scenario based on both the original and adjusted planned capital actions, where applicable. The minimum capital ratios were generally higher in the supervisory adverse scenario than in the supervisory severely adverse scenario.

Table 4. Projected minimum common equity tier 1 ratio in the severely adverse scenario, 2019:Q1 to 2021:Q1
Percent

Firm	Stressed ratio with original planned capital actions	Stressed ratio with adjusted planned capital actions
Bank of America Corporation	5.6	
The Bank of New York Mellon Corporation	8.2	
Barclays US LLC	11.1	
Capital One Financial Corporation	3.9	4.6
Citigroup Inc.	6.9	
Credit Suisse Holdings (USA), Inc.	16.2	
DB USA Corporation	14.8	
The Goldman Sachs Group, Inc.	6.7	
HSBC North America Holdings Inc.	6.8	
JPMorgan Chase & Co.	4.4	4.6
Morgan Stanley	7.7	
Northern Trust Corporation	9.0	
The PNC Financial Services Group, Inc.	5.8	
State Street Corporation	8.2	
TD Group US Holdings LLC	12.4	
UBS Americas Holding LLC	11.0	
U.S. Bancorp	6.5	
Wells Fargo & Company	7.0	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by a firm after reviewing the Federal Reserve's stress test. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Source: Federal Reserve estimates in the severely adverse scenario.

Table 5. Projected minimum common equity tier 1 ratio in the adverse scenario, 2019:Q1 to 2021:Q1
Percent

Firm	Stressed ratio with original planned capital actions	Stressed ratio with adjusted planned capital actions
Bank of America Corporation	7.9	
The Bank of New York Mellon Corporation	9.1	
Barclays US LLC	13.0	
Capital One Financial Corporation	8.5	9.1
Citigroup Inc.	9.5	
Credit Suisse Holdings (USA), Inc.	19.1	
DB USA Corporation	17.6	
The Goldman Sachs Group, Inc.	10.5	
HSBC North America Holdings Inc.	9.3	
JPMorgan Chase & Co.	7.2	7.3
Morgan Stanley	11.2	
Northern Trust Corporation	9.5	
The PNC Financial Services Group, Inc.	7.6	
State Street Corporation	8.9	
TD Group US Holdings LLC	14.4	
UBS Americas Holding LLC	14.3	
U.S. Bancorp	8.3	
Wells Fargo & Company	9.4	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by a firm after reviewing the Federal Reserve's stress test. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Source: Federal Reserve estimates in the adverse scenario.

Table 6. Projected minimum regulatory capital ratios in the severely adverse scenario, 2019:Q1 to 2021:Q1: 18 Participating Firms
Percent

Firm	Capital actions	Common equity tier 1 capital ratio		Tier 1 capital ratio		Total capital ratio		Tier 1 leverage ratio		Supplementary leverage ratio[1]	
		Actual 2018:Q4	Projected minimum	Actual 2018:Q4	Projected minimum	Actual 2018:Q4	Projected minimum	Actual 2018:Q4	Projected minimum	Actual 2018:Q4	Projected minimum
Bank of America Corporation	Original	11.6	5.6	13.2	7.1	15.4	9.4	8.4	4.5	6.8	3.7
	Adjusted										
The Bank of New York Mellon Corporation	Original	11.7	8.2	14.1	10.5	15.1	11.6	6.6	4.9	6.0	4.5
	Adjusted										
Barclays US LLC	Original	14.5	11.1	17.6	14.0	21.0	16.1	8.9	7.2	7.3	5.9
	Adjusted										
Capital One Financial Corporation	Original	11.2	3.9	12.7	5.5	15.1	7.7	10.7	4.8	9.0	4.0
	Adjusted	11.2	4.6	12.7	6.2	15.1	8.4	10.7	5.4	9.0	4.6
Citigroup Inc.	Original	11.9	6.9	13.5	8.4	16.6	11.2	8.3	5.2	6.4	4.0
	Adjusted										
Credit Suisse Holdings (USA), Inc.	Original	25.8	16.2	26.5	17.0	26.6	17.1	12.9	7.5	11.3	6.5
	Adjusted										
DB USA Corporation	Original	22.9	14.8	34.4	26.2	34.4	26.6	9.2	6.9	8.4	6.3
	Adjusted										
The Goldman Sachs Group, Inc.	Original	13.3	6.7	15.3	8.6	18.0	11.5	8.9	5.0	6.2	3.5
	Adjusted										
HSBC North America Holdings Inc.	Original	12.6	6.8	14.2	8.4	18.0	11.7	7.5	4.3	5.6	3.2
	Adjusted										
JPMorgan Chase & Co.	Original	12.0	4.4	13.7	6.3	15.5	8.3	8.1	3.8	6.4	3.0
	Adjusted	12.0	4.6	13.7	6.8	15.5	8.7	8.1	4.0	6.4	3.2
Morgan Stanley	Original	16.9	7.7	19.2	10.0	21.8	12.5	8.4	4.4	6.5	3.4
	Adjusted										
Northern Trust Corporation	Original	12.9	9.0	14.1	10.3	16.1	12.3	8.0	5.8	7.0	5.1
	Adjusted										
The PNC Financial Services Group, Inc.	Original	9.6	5.8	10.8	7.3	13.0	9.6	9.4	6.3	7.8	5.3
	Adjusted										
State Street Corporation	Original	11.7	8.2	15.5	11.8	16.3	12.5	7.2	5.5	6.3	4.8
	Adjusted										
TD Group US Holdings LLC	Original	16.3	12.4	16.3	12.4	17.3	13.6	9.2	7.1	8.3	6.4
	Adjusted										
UBS Americas Holding LLC	Original	21.7	11.0	25.7	16.6	27.0	18.6	11.3	7.2	n/a	n/a
	Adjusted									n/a	n/a
U.S. Bancorp	Original	9.1	6.5	10.7	8.2	12.6	10.4	9.0	7.0	7.2	5.6
	Adjusted										
Wells Fargo & Company	Original	11.7	7.0	13.5	8.6	16.6	11.7	9.1	5.8	7.7	4.9
	Adjusted										

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by a firm after reviewing the Federal Reserve's stress test. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. The minimum capital ratios do not necessarily occur in the same quarter.

[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.

Required minimum capital ratios in CCAR 2019 (Percent)

Regulatory ratio	Minimum
Common equity tier 1 capital ratio	4.5
Tier 1 capital ratio	6.0
Total capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per recent technical amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed. Firms subject to the advanced approaches are required to maintain a supplementary leverage ratio above 3 percent for quarters corresponding to 2019:Q1 to 2021:Q1. See 12 CFR 225.8(c)(3) and 12 CFR 225.8(d)(8).

Table 7. Projected minimum regulatory capital ratios in the adverse scenario, 2019:Q1 to 2021:Q1: 18 Participating Firms

Percent

Firm	Capital actions	Common equity tier 1 capital ratio		Tier 1 capital ratio		Total capital ratio		Tier 1 leverage ratio		Supplementary leverage ratio[1]	
		Actual 2018:Q4	Projected minimum	Actual 2018:Q4	Projected minimum	Actual 2018:Q4	Projected minimum	Actual 2018:Q4	Projected minimum	Actual 2018:Q4	Projected minimum
Bank of America Corporation	Original	11.6	7.9	13.2	9.3	15.4	11.3	8.4	5.9	6.8	4.8
	Adjusted										
The Bank of New York Mellon Corporation	Original	11.7	9.1	14.1	11.3	15.1	12.3	6.6	5.3	6.0	4.8
	Adjusted										
Barclays US LLC	Original	14.5	13.0	17.6	15.9	21.0	18.3	8.9	8.2	7.3	6.7
	Adjusted										
Capital One Financial Corporation	Original	11.2	8.5	12.7	10.0	15.1	12.1	10.7	8.8	9.0	7.4
	Adjusted	11.2	9.1	12.7	10.6	15.1	12.8	10.7	9.3	9.0	7.9
Citigroup Inc.	Original	11.9	9.5	13.5	11.1	16.6	13.5	8.3	6.9	6.4	5.3
	Adjusted										
Credit Suisse Holdings (USA), Inc.	Original	25.8	19.1	26.5	19.9	26.6	20.0	12.9	8.9	11.3	7.8
	Adjusted										
DB USA Corporation	Original	22.9	17.6	34.4	28.6	34.4	28.8	9.2	7.7	8.4	7.1
	Adjusted										
The Goldman Sachs Group, Inc.	Original	13.3	10.5	15.3	12.4	18.0	14.8	8.9	7.2	6.2	5.0
	Adjusted										
HSBC North America Holdings Inc.	Original	12.6	9.3	14.2	10.8	18.0	13.7	7.5	5.6	5.6	4.1
	Adjusted										
JPMorgan Chase & Co.	Original	12.0	7.2	13.7	9.1	15.5	10.6	8.1	5.4	6.4	4.3
	Adjusted	12.0	7.3	13.7	9.5	15.5	11.1	8.1	5.7	6.4	4.5
Morgan Stanley	Original	16.9	11.2	19.2	13.9	21.8	15.9	8.4	6.0	6.5	4.6
	Adjusted										
Northern Trust Corporation	Original	12.9	9.5	14.1	10.7	16.1	12.6	8.0	6.1	7.0	5.3
	Adjusted										
The PNC Financial Services Group, Inc.	Original	9.6	7.6	10.8	9.1	13.0	11.0	9.4	7.9	7.8	6.6
	Adjusted										
State Street Corporation	Original	11.7	8.9	15.5	12.5	16.3	13.1	7.2	5.8	6.3	5.1
	Adjusted										
TD Group US Holdings LLC	Original	16.3	14.4	16.3	14.4	17.3	15.5	9.2	8.3	8.3	7.4
	Adjusted										
UBS Americas Holding LLC	Original	21.7	14.3	25.7	19.8	27.0	21.5	11.3	8.7	n/a	n/a
	Adjusted									n/a	n/a
U.S. Bancorp	Original	9.1	8.3	10.7	10.0	12.6	11.9	9.0	8.5	7.2	6.8
	Adjusted										
Wells Fargo & Company	Original	11.7	9.4	13.5	11.0	16.6	13.7	9.1	7.5	7.7	6.3
	Adjusted										

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by a firm after reviewing the Federal Reserve's stress test. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1. The minimum capital ratios do not necessarily occur in the same quarter.

[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.

Required minimum capital ratios in CCAR 2019 (Percent)

Regulatory ratio	Minimum
Common equity tier 1 capital ratio	4.5
Tier 1 capital ratio	6.0
Total capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per recent technical amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed. Firms subject to the advanced approaches are required to maintain a supplementary leverage ratio above 3 percent for quarters corresponding to 2019:Q1 to 2021:Q1. See 12 CFR 225.8(c)(3) and 12 CFR 225.8(d)(8).

Qualitative Assessment Framework, Process, and Summary of Results

Overview of Qualitative Assessment Framework

In addition to the quantitative assessment of each firm's capital adequacy discussed above, the Federal Reserve reviewed capital plans submitted by the largest and most complex firms to assess the strength of each firm's capital planning practices.

In the qualitative assessment, supervisors focus on the firms' analyses and practices used to determine the amount and composition of capital needed to continue to lend to households and businesses throughout a period of severe stress. In doing so, the Federal Reserve evaluates the comprehensiveness and reasonableness of a firm's capital plan; the reasonableness of the assumptions and analysis underlying the plan, including the extent to which it captures and addresses potential risks stemming from firmwide activities; and the robustness of the firm's capital planning process.[14]

Where applicable, the assessment leverages existing supervisory information about each firm, such as supervisory findings and information from examinations conducted throughout the year. Effective capital planning appropriately accounts for firmwide risks and is subject to effective oversight. The Federal Reserve's qualitative assessment of capital plans focuses on the extent to which each firm's analyses supporting its capital plan appropriately captures the specific risks and vulnerabilities faced by the firm under stress. Specifically, the Federal Reserve evaluates how each firm identifies, measures, and determines capital needs for its material risks under both expected and stressful conditions and whether the analyses and practices used provide a reasonable basis for its board of directors to make sound capital planning decisions.

Guidance published in December 2015 provides supervisory expectations for capital planning for firms that are subject to the CCAR qualitative assessment.[15] The letter explains that the Federal Reserve's expectations for capital planning processes are tailored based on the size, scope of operations, activities, and systemic importance of the firm. In particular, the Federal Reserve has heightened expectations for firms subject to supervision by its Large Institution Supervision Coordination Committee (LISCC) and expects them to have the most sophisticated, comprehensive, and robust capital planning processes.

Qualitative Assessment Process

For the largest and most complex firms, CCAR's qualitative assessment is the culmination of three supervisory activities that evaluate whether firms have sound practices and analyses for determining their capital needs on a forward-looking basis:

1. assessment of the underlying analyses and support for firms' annual capital plan submissions,
2. monitoring of firms' remediation of outstanding supervisory findings related to capital planning, and
3. execution of targeted horizontal exams pertaining to capital planning undertaken throughout the year.[16]

As explained in more detail below, these three evaluations are conducted at different times throughout a given year and together allow the Federal Reserve to gain a comprehensive view into six areas critical to sound capital planning: (1) governance, (2) risk management, (3) internal controls, (4) capital policies, (5) scenario design, and (6) projection methodologies. See box 4 for explanations of these areas and examples of past deficiencies.

[14] See 12 CFR 225.8(f)(1).

[15] See SR letter 15-18, "Federal Reserve Supervisory Assessment of Capital Planning and Positions for LISCC Firms and Large and Complex Firms," December 18, 2015, https://www.federalreserve.gov/supervisionreg/srletters/sr1518.htm.

[16] Horizontal examinations are assessments of a common area or practice (such as internal audit) across multiple firms by a coordinated team of examiners.

Box 3: Scope of CCAR 2019 Qualitative Assessment

The 2019 qualitative assessment focused on governance around capital planning, use of model overlays, sensitivity analysis and assumptions management, and certain stress loss and revenue estimation practices, summarized in table A. The scope of review of the 2019 CCAR qualitative assessment was communicated to firms via letters sent to them in December 2018. Firms were only required to submit documentation for those elements in scope.

Table A. Scope of CCAR 2019 Qualitative Assessment

Area and sub-area(s)	Exposures					
	Retail credit risk	Wholesale credit risk	Counterparty credit risk	Trading risk	Operational risk	Pre-provision net revenue
Governance	All	All	All	All	All	All
Estimating impact on capital positions—all sub-areas, as relevant	(1) First lien mortgages; (2) first lien home equity loans; (3) closed-end junior lien mortgages; (4) home equity lines of credit; and (5) first lien and second/junior lien mortgages accounted for under the fair value option	(1) Commercial & industrial loans and other commercial loans and leases held for investment; and (2) commercial & industrial loans, other commercial loans and leases, and commercial real estate loans held-for-sale	(1) Counterparty credit mark-to-market losses (credit valuation adjustment losses); (2) other counterparty credit losses; and (3) counterparty default losses—loss given default (LGD) only (inclusive of counterparty scenario design and narrative)	(1) Securitized products; and (2) municipals, auction rate securities, corporate credit (advanced and emerging markets), sovereign credit, and credit correlation	All	(1) First lien residential mortgages; (2) first lien home equity loans; (3) first lien residential mortgages accounted for under the fair value option; (4) mortgage servicing assets; (5) commercial real estate loans; and (6) investment banking
Model overlays (appendix B)—all sub-areas	(1) First lien mortgages; (2) first lien home equity loans; (3) closed-end junior lien mortgages; (4) home equity lines of credit; and (5) first lien and second/junior lien mortgages accounted for under the fair value option	(1) Commercial & industrial loans and other commercial loans and leases held for investment; and (2) commercial & industrial loans, other commercial loans and leases, and commercial real estate loans held-for-sale	(1) Counterparty credit mark-to-market losses (credit valuation adjustment losses); (2) other counterparty credit losses; and (3) counterparty default losses – loss given default (LGD) only (inclusive of counterparty scenario design and narrative)	(1) Securitized products; and (2) municipals, auction rate securities, corporate credit (advanced and emerging markets), sovereign credit, and credit correlation	All	(1) First lien residential mortgages; (2) first lien home equity loans; (3) first lien residential mortgages accounted for under the fair value option; (4) mortgage servicing assets; (5) commercial real estate loans; and (6) investment banking
Sensitivity analysis and assumptions management (appendix D)—all sub-areas	(1) First lien mortgages; (2) first lien home equity loans; (3) closed-end junior lien mortgages; (4) home equity lines of credit; and (5) first lien and second/junior lien mortgages accounted for under the fair value option	(1) Commercial & industrial loans and other commercial loans and leases held for investment; and (2) commercial & industrial loans, other commercial loans and leases, and commercial real estate loans held-for-sale	All	(1) Securitized products; and (2) municipals, auction rate securities, corporate credit (advanced and emerging markets), sovereign credit, and credit correlation	All	(1) First lien residential mortgages; (2) first lien home equity loans; (3) first lien residential mortgages accounted for under the fair value option; (4) mortgage servicing assets; (5) commercial real estate loans; and (6) investment banking

Box 4: The Importance of Capital Planning and Examples of Historical Deficiencies

Capital is central to a firm's ability to absorb unexpected losses and continue to lend to creditworthy businesses and consumers in times of stress. Firms must have in place sound capital planning practices that allow them to reliably determine their expected capital needs under stress on a forward-looking basis. This allows firms' boards of directors to make informed decisions about capital actions. The practices that are important for sound capital planning are also foundational to a firm's broader risk identification, measurement, and management frameworks.

The emphasis on strong capital planning practices is a direct response to many of the critical shortcomings that were exposed by the financial crisis and hindered firms' ability to effectively manage risk in the face of financial stress. For example, during and immediately following the crisis, a number of firms had significant problems identifying and measuring their risks, which undermined their ability to determine their capital needs. Some of the firms were unable to aggregate their total exposure to their major counterparties and lacked ready access to basic information about the location and value of the collateral they held.

As noted earlier, the Federal Reserve focuses on six key areas for capital planning when assessing a firm's capital planning processes: governance, risk management, internal controls, capital policies, scenario design, and projection methodologies. This box discusses why each area is essential to capital planning and gives examples of historical deficiencies at firms. The deficiencies described in these examples, standing alone, did not result in a qualitative objection. Firms receiving qualitative objections in past CCAR cycles generally had multiple deficiencies in one or more areas of capital planning.

1. Governance

Strong governance in capital planning requires a firm's senior management to design and oversee its capital planning process and its board of directors to periodically review and approve that process. In doing so, senior management must make informed recommendations to the board of directors regarding a firm's capital planning and capital adequacy. The recommendations should have sound analytical support and take into account the expectations of key stakeholders, including shareholders, rating agencies, counterparties, depositors, creditors, and supervisors. In order to make these recommendations, senior management must design and oversee the firm's capital planning process—including its use of models and other estimation approaches—as well as an independent review framework that identifies weaknesses within the capital planning process.

It is the responsibility of the board of directors to ensure that a firm's capital plan is consistent with the firm's strategic direction and its risk appetite. A common element of deficient capital plans has been the failure of management to ensure that the analyses underlying the firm's capital plan was reliable or to accurately communicate the firm's full capital planning practices—including weaknesses therein—to the firm's board of directors.

Example: A firm was found to have deficient governance over capital planning because its senior management presented and its board of directors approved a capital plan that did not accurately represent the firm's expected financial condition or account for the material risks it faced. This resulted from the firm's management team failing to effectively account in the capital plan for increased risks stemming from weakened credit underwriting standards in connection with its most material portfolios, despite learning of those risks and related underestimation of their reserves shortly before their capital plan was submitted to the Federal Reserve. This occurrence raised significant concerns about management's oversight of the firm's capital planning process and, in turn, the reliability of the grounds upon which the firm's board of directors made capital decisions.

2. Risk Management

A firm's risk management process should identify, measure, and assess its material risks, including specifically how they may evolve under stress, and provide a strong foundation for capital planning. A firm's risk identification process should include a comprehensive assessment of risks stemming from its unique business activities and associated exposures. The risk identification process should be dynamic and comprehensive, and drive the firm's capital adequacy analysis. Sound risk measurement processes inform a firm's senior management and board of directors about the size and risk characteristics of exposures faced by the firm under both normal and stressful operating conditions, thereby allowing the firm's leadership to make well-supported decisions about capital needs under stress.

Example: A firm's risk identification process was found to be inadequate for capital planning purposes because it was not integrated with the process used to develop the firm's capital plan. While the firm had a process to identify its material risks, these risks were not included consistently in the firm's stress scenarios or represented in its revenue and loss estimation approaches. As a result, material risks identified by the firm were not factored into the determination of its capital needs under stress.

(continued on next page)

Box 4: The Importance of Capital Planning and Examples of Historical Deficiencies *(continued)*

3. Internal Controls

A firm's internal control framework supports its entire capital planning process. A sound internal control framework should have (a) policies and procedures that support consistent and repeatable processes, (b) validation of estimation methods for suitability, (c) reliable data and information systems, and (d) an internal audit function that independently evaluates the efficacy of the capital planning process. A sound internal control framework helps ensure that all aspects of the capital planning process are functioning as designed and result in sound assessments of the firm's capital needs.

Example: A firm's internal controls were found to be inadequate because the process for estimating total losses was highly manual, without appropriate controls. This made it difficult to compile and verify final results and led to fundamental errors in the firm's capital plan. This weak control environment rendered the firm's capital plan unreliable and led to its board of directors making capital distribution decisions based on incorrect information.

4. Capital Policy

A capital policy is a firm's written description of the principles and guidelines used for capital planning, issuance, usage, and distributions. The capital policy should reflect a number of factors, including the firm's business strategy, risk appetite, organizational structure, governance structure, post-stress capital goals, and real-time targeted capital levels. It should also establish the actions the firm will take in the event of breaching a post-stress capital goal or real-time capital target. A sound capital policy underpins the creation of post-stress capital goals that are aligned with a firm's risk appetite and risk profile. It is also critical to a firm's ability to appropriately manage its capital adequacy under normal circumstances and continue to be able to lend during times of stress. Prior to the crisis, most firms did not have forward-looking capital policies to guide their response to deteriorating financial conditions.

Example: A firm was found to have a deficient capital policy because the policy lacked detail in critical areas. The policy did not establish capital limits that were supported by forward-looking analysis of the firm's risks or considered the capital the firm needed to maintain the confidence of its counterparties. The capital policy also did not set forth the actions the firm could take to improve its capital position. These weaknesses inhibited the firm's senior management and board of directors from proactively addressing capital shortfalls.

5. Scenario Design

Scenario design entails creating a hypothetical economic environment over a specific period of time, including both a narrative of the situation and paths of economic variables that relate to the scenario. Well-designed scenarios should incorporate appropriately stressful conditions and events that could adversely affect a firm's capital adequacy. Firm-specific scenarios should reflect the specific vulnerabilities of the firm and directly link to the firm's risk-identification process and associated risk assessment. Scenario design is essential to testing the range of potential outcomes a firm could face in stress and contributes to informed capital planning processes.

Example: A firm's risk identification process was found to be inadequate because of its failure to capture unique risks arising from a portfolio material to its business. The firm was overly reliant upon events from the financial crisis in designing its stress scenarios, despite material changes in its risk profile and business mix since that time. As a result, this process resulted in a stress scenario that was not particularly stressful or applicable to the firm in its current state and, therefore, did not provide a useful means of determining capital adequacy.

6. Projection Methodologies

Forward-looking capital planning requires a firm to make projections of its future capital needs. In doing so, a firm should estimate losses, revenues, expenses, and capital using a sound method that relates macroeconomic and other risk factors to its projections. The firm should be able to identify the manner in which key variables, factors, and events in a scenario affect losses, revenue, expenses, and capital over the planning horizon. Sound projection methodologies allow a firm's senior management and board of directors to make appropriate, informed decisions regarding the firm's capitalization. Deficient projection methodologies may also be evidence of weak internal controls, such as model risk management.

Example: A firm's capital plan was found to be deficient because the models used to estimate losses for one of the firm's most material portfolios did not sufficiently capture relevant risk drivers, were based on unsupported assumptions, and used very limited data. The resulting models were not sensitive to the firm's risk characteristics and scenario conditions. These weaknesses raised significant concerns about the reliability of these methodologies and the loss estimates resulting from them. As a result, management of the firm was unable to provide reliable loss projections on a major portfolio to its board of directors, and the board of directors was unable to make informed decisions about capital adequacy at the firm.

Assessment of Capital Plan Submissions

In April of each year as a part of the CCAR exercise, firms submit to the Federal Reserve capital plans that include detailed descriptions of the firms' capital planning practices and underlying analyses, including descriptions of their internal processes for assessing capital adequacy and their policies governing capital actions. Those plans are then assessed by subject matter experts from across the Federal Reserve System over a three-month period. The assessment is also informed by related supervisory work conducted throughout the year.

Two groups of supervisors—dedicated supervisory teams (DSTs) and horizontal evaluation teams (HETs)—conduct an initial assessment of each firm's capital plan submission. DSTs, which are composed of Federal Reserve staff that focus on a single firm, assess the adequacy of firms' capital planning practices related to governance, risk management, internal controls, and scenario design.

HETs are composed of Federal Reserve staff that are not assigned to a specific financial institution for purposes of the CCAR annual exercise but instead focus on the examination of practices across multiple firms. Some HETs assess the reasonableness of firms' stressed loss, revenue, and expense estimation approaches and the governance and controls around those approaches. Others, such as the capital planning review team, work closely with DSTs to provide a horizontal assessment across the DSTs' areas of focus.

The DST and HET assessments consider whether a firm's capital planning practices allow it to reliably estimate its capital needs on a forward-looking basis, given changes that can occur to a firm's risk profile. These assessments are based on previously articulated supervisory guidance and expectations. The horizontal element of the exercise assists the Federal Reserve in consistently applying its supervisory expectations to its assessment of each firm's capital planning practices.

After this initial assessment, the DSTs and HETs rate each firm's practices in each of the six areas noted above. These ratings are used to determine the nature and severity of supervisory feedback. The initial supervisory assessments are subject to review by a committee comprising senior staff from across the Federal Reserve System that seek to confirm that

- evaluations are well supported and are consistently applied across firms accounting for their size and complexity; and
- assessments, as reflected in the ratings, are appropriately calibrated to the materiality of the supervisory concern.

This committee also groups firms based on the ratings for each assessment area, with consideration of the firms' individual risk profiles. The groupings assist the Federal Reserve in distinguishing the relative strength of each firm's capital planning practices. However, the qualitative assessment of a firm's capital plan is based on an absolute assessment of an individual firm's capital planning practices and not on comparative rankings. As such, a low grouping is not, in and of itself, a reason for an objection to a capital plan.

For the five firms subject to an objection on qualitative grounds, the DSTs for each of those firms formulate a recommendation to object or not object to those firms' capital plan based on the combined assessment, after extensive review by the national committee. The LISCC's Operating Committee, which comprises senior staff from across the Federal Reserve System, then reviews and presents its own recommendation for those firms to the director of the Board's Division of Supervision and Regulation.[17] Reserve Banks responsible for the supervision of large and complex firms that are not LISCC firms make recommendations with regard to those firms, after review by a separate committee of senior staff. The director makes the final recommendations, with supervisory findings, to the Board, who makes the final decision whether to object to a firm's capital plan.

For firms subject to the qualitative objection, an objections on qualitative grounds can arise for reasons including, but not limited to

- unresolved material supervisory issues;
- inappropriate assumptions and analyses underlying a firm's capital plan; or

[17] See SR letter 15-7, "Governance Structure of the Large Institution Supervision Coordinating Committee (LISCC) Supervisory Program," April 17, 2015, https://www.federalreserve.gov/supervisionreg/srletters/sr1507.htm.

- inadequate governance and internal controls, risk management, and risk identification in support of a firm's capital planning practices.[18]

Communication of Feedback

Soon after the completion of the CCAR exercise, the Federal Reserve sends a letter to each firm, noting areas where the firm's capital planning analyses and processes meet supervisory expectations, exhibit weaknesses, and actions the firms must take to address those weaknesses. Each firm is required to submit a plan detailing how it will address any identified weakness, and supervisors then assess whether those plans are likely to address the cited weaknesses in a reasonable period of time. The Federal Reserve then communicates its evaluation of the action plans to the firm. In this way, the feedback letters serve as a guide for firms and supervisors to develop a common understanding of how supervisory concerns will be remediated.

Monitoring Outstanding Findings

DSTs and HETs monitor each firm's progress in remediating outstanding supervisory findings consistent with the firm's remediation plan. Any resulting concerns are communicated to firms on an ongoing basis so that changes, if needed, can be made by the firm before the next CCAR exercise. The annual process is meant to give firms regular feedback so they know the issues they face—before, during, and after the CCAR qualitative assessment—and can make improvements throughout the year.

Horizontal Examinations

Horizontal examinations are assessments of a common area or practice (such as internal audit) across multiple firms by a coordinated team of examiners. Throughout the year, the Federal Reserve conducts horizontal examinations aimed at assessing whether firms have sound capital planning practices in place to enable them to reliably determine their capital needs under expected and stressful conditions. The focus of a given year's capital planning horizontal examinations are determined in the fall of each year, and findings from the exams serve as key inputs for the annual CCAR qualitative assessment.

[18] See 12 CFR 225.8(f)(2)(ii)(B)(2).

Qualitative Assessment Results

No firms' capital plans were objected to on qualitative grounds.

The Board issued a conditional non-objection to Credit Suisse's capital plan. The firm is required to address weaknesses in its capital adequacy process by October 27, 2019.

Qualitative Assessment Trends

The qualitative assessment conducted as part of CCAR 2019 found that most firms meet the Federal Reserve's supervisory expectations for capital planning. In particular, several firms with capital planning weaknesses addressed longstanding supervisory issues related to their material risks and exposures.

This year's qualitative assessment revealed a number of trends in capital planning practices, including the following:

- Firms newer to CCAR exhibit varying degrees of weaknesses in stress loss and revenue projection in association with their most significant risks and exposures.
- In a continuation of a trend observed in 2018, firms used certain large trading positions to reduce the impact of the market shock on their capital positions under stress. The effectiveness of these positions in offsetting trading losses in the event of an actual market stress is uncertain. In addition, their use may not be consistent with sound risk management.

Reasons for Conditional Non-objection

The Board did not object to Credit Suisse's capital plan. However, the Federal Reserve identified weaknesses in the firm's capital adequacy process that can be addressed in the near term. Specifically, the Federal Reserve identified weaknesses in the assumptions used by the firm to project stressed trading losses that raise concerns about the firm's capital adequacy and capital planning process.

As a condition of not objecting to Credit Suisse's capital plan, the Board is requiring the firm to address the weaknesses noted above by October 27, 2019. In addition, until the firm satisfactorily addresses the identified weaknesses, the Board is restricting the firm's planned capital distributions to the amount that the firm was authorized to pay from July 1, 2018, through June 30, 2019.

Process and Requirements after CCAR 2019

Execution of Capital Plan and Consequences of a Federal Reserve Objection to a Plan

The Federal Reserve evaluates planned capital actions for the full nine-quarter planning horizon to better understand each firm's capital management strategy and to assess post-stress capital levels over the full planning horizon.[19] While the nine-quarter planning horizon reflected in the 2019 capital plans extends to the beginning of 2021, the Federal Reserve's decision to object or not object to firms' planned capital actions is carried out annually and applies only to the four quarters following the disclosure of results. Therefore, the Federal Reserve's decisions with regard to planned capital distributions in CCAR 2019 will apply from the beginning of the third quarter of 2019 through the end of the second quarter of 2020.

When the Federal Reserve objects to a firm's capital plan, the firm may not make any capital distribution unless expressly permitted by the Federal Reserve.[20] For those firms that did not receive an objection to their capital plans, the capital plan rule provides that a firm generally must request prior approval of a capital distribution if the dollar amount of the capital distribution will exceed the amount described in their capital plan (gross distribution limit).[21]

In addition, a firm generally must request the Board's non-objection for capital distributions included in the firm's capital plan if the firm has issued less capital of a given class of regulatory capital instrument (net of distributions) than the firm had included in its capital plan, measured cumulatively, beginning with the third quarter of the planning horizon (the third quarter of 2019).[22] For example, a firm that planned to issue common stock in the fourth quarter of 2019, but issued less stock than included in its capital plan, would be prohibited from making planned common dividends, share repurchases, or both in that quarter and subsequent quarters unless and until it offsets the excess net distributions. A firm's consistent failure to issue the regulatory capital included in its plan may be indicative of shortcomings in the firm's capital planning process and may negatively influence the Federal Reserve's assessment of the firm's capital plans in future years.

Potential Additional Supervisory Actions

In the event the Federal Reserve observes deficiencies in firms' capital planning practices through CCAR's qualitative assessment that call into question their ability to determine their capital needs under normal or stressed financial conditions, those firms may also be subject to a deficient capital planning and positions rating and an enforcement action. In addition, consistent with the capital plan rule, if the Federal Reserve determines that a firm has unsafe or unsound capital planning practices or the financial condition of the firm is unsafe or unsound, the Federal Reserve may issue a public capital directive, such

[19] See Board of Governors, *Comprehensive Capital Analysis and Review 2019 Summary Instructions*, https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20190306b2.pdf.

[20] See 12 CFR 225.8(f)(2)(iv).

[21] A firm is not required to provide prior notice and seek approval for distributions involving issuances of instruments that would qualify for inclusion in the numerator of regulatory capital ratios that were not included in the firm's capital plan. See 12 CFR 225.8(g)(1).

[22] The classes of regulatory capital instruments are common equity tier 1, additional tier 1, and tier 2 capital instruments, as defined in 12 CFR 217.2. Firms are not required to provide prior notice and seek approval for distributions included in their capital plans that are scheduled payments on additional tier 1 or tier 2 capital. In addition, firms are not required to provide prior notice and seek approval where the shortfall in capital issuance (net of distributions) is due to employee-directed capital issuances related to an employee stock ownership plan, a planned merger or acquisition that is no longer expected to be consummated or for which the consideration paid was lower than the projected price in the capital plan, or if aggregate excess net distributions are less than 0.25 percent of the firm's tier 1 capital. See 12 CFR 225.8(g)(3)(iii).

as a directive to reduce capital distributions, or take other supervisory or public enforcement actions, including actions to address such unsafe and unsound practices or other conditions or violations of law.

Resubmissions

If a firm's capital plan was objected to, it may resubmit its plan in advance of the next CCAR exercise, but it is not required to do so.[23] The Federal Reserve can require a firm to resubmit its capital plan following CCAR for a number of reasons, including if there has been or will likely be a material change in the firm's risk profile, financial condition, or corporate structure; the firm's stress scenarios are no longer appropriate for the firm's business models or portfolios; or changes in the macroeconomic outlook that could materially affect the firm's risk profile and financial condition require the use of updated scenarios.[24] As detailed in the capital plan rule, a firm must update and resubmit its capital plan if it determines there has been or will be a material change in the firm's risk profile (including a material change in its business strategy or any material risk exposures), financial condition, or corporate structure since the firm adopted the capital plan.[25]

[23] See 12 CFR 225.8(e)(4)(ii).

[24] See 12 CFR 225.8(e)(4)(i)(B).

[25] See 12 CFR 225.8(e)(4)(i)(A).

Appendix A: Disclosure Tables

These tables provide projections that represent hypothetical estimates involving an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and, where applicable, reflect any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections. The minimum capital ratios are for the period from the first quarter of 2019 to the first quarter of 2021 and do not necessarily occur in the same quarter.

Table 1.A. Bank of America Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.6	5.6	
Tier 1 capital ratio	13.2	7.1	
Total capital ratio	15.4	9.4	
Tier 1 leverage ratio	8.4	4.5	
Supplementary leverage ratio	6.8	3.7	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 1.B. Bank of America Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.6	7.9	
Tier 1 capital ratio	13.2	9.3	
Total capital ratio	15.4	11.3	
Tier 1 leverage ratio	8.4	5.9	
Supplementary leverage ratio	6.8	4.8	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 2.A. The Bank of New York Mellon Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.7	8.2	
Tier 1 capital ratio	14.1	10.5	
Total capital ratio	15.1	11.6	
Tier 1 leverage ratio	6.6	4.9	
Supplementary leverage ratio	6.0	4.5	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 2.B. The Bank of New York Mellon Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.7	9.1	
Tier 1 capital ratio	14.1	11.3	
Total capital ratio	15.1	12.3	
Tier 1 leverage ratio	6.6	5.3	
Supplementary leverage ratio	6.0	4.8	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 3.A. Barclays US LLC

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	14.5	11.1	
Tier 1 capital ratio	17.6	14.0	
Total capital ratio	21.0	16.1	
Tier 1 leverage ratio	8.9	7.2	
Supplementary leverage ratio	7.3	5.9	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 3.B. Barclays US LLC

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	14.5	13.0	
Tier 1 capital ratio	17.6	15.9	
Total capital ratio	21.0	18.3	
Tier 1 leverage ratio	8.9	8.2	
Supplementary leverage ratio	7.3	6.7	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 4.A. Capital One Financial Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.2	3.9	4.6
Tier 1 capital ratio	12.7	5.5	6.2
Total capital ratio	15.1	7.7	8.4
Tier 1 leverage ratio	10.7	4.8	5.4
Supplementary leverage ratio	9.0	4.0	4.6

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 4.B. Capital One Financial Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.2	8.5	9.1
Tier 1 capital ratio	12.7	10.0	10.6
Total capital ratio	15.1	12.1	12.8
Tier 1 leverage ratio	10.7	8.8	9.3
Supplementary leverage ratio	9.0	7.4	7.9

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 5.A. Citigroup Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.9	6.9	
Tier 1 capital ratio	13.5	8.4	
Total capital ratio	16.6	11.2	
Tier 1 leverage ratio	8.3	5.2	
Supplementary leverage ratio	6.4	4.0	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 5.B. Citigroup Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.9	9.5	
Tier 1 capital ratio	13.5	11.1	
Total capital ratio	16.6	13.5	
Tier 1 leverage ratio	8.3	6.9	
Supplementary leverage ratio	6.4	5.3	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 6.A. Credit Suisse Holdings (USA), Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	25.8	16.2	
Tier 1 capital ratio	26.5	17.0	
Total capital ratio	26.6	17.1	
Tier 1 leverage ratio	12.9	7.5	
Supplementary leverage ratio	11.3	6.5	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 6.B. Credit Suisse Holdings (USA), Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	25.8	19.1	
Tier 1 capital ratio	26.5	19.9	
Total capital ratio	26.6	20.0	
Tier 1 leverage ratio	12.9	8.9	
Supplementary leverage ratio	11.3	7.8	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 7.A. DB USA Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	22.9	14.8	
Tier 1 capital ratio	34.4	26.2	
Total capital ratio	34.4	26.6	
Tier 1 leverage ratio	9.2	6.9	
Supplementary leverage ratio	8.4	6.3	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 7.B. DB USA Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	22.9	17.6	
Tier 1 capital ratio	34.4	28.6	
Total capital ratio	34.4	28.8	
Tier 1 leverage ratio	9.2	7.7	
Supplementary leverage ratio	8.4	7.1	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 8.A. The Goldman Sachs Group, Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	13.3	6.7	
Tier 1 capital ratio	15.3	8.6	
Total capital ratio	18.0	11.5	
Tier 1 leverage ratio	8.9	5.0	
Supplementary leverage ratio	6.2	3.5	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 8.B. The Goldman Sachs Group, Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	13.3	10.5	
Tier 1 capital ratio	15.3	12.4	
Total capital ratio	18.0	14.8	
Tier 1 leverage ratio	8.9	7.2	
Supplementary leverage ratio	6.2	5.0	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 9.A. HSBC North America Holdings Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	12.6	6.8	
Tier 1 capital ratio	14.2	8.4	
Total capital ratio	18.0	11.7	
Tier 1 leverage ratio	7.5	4.3	
Supplementary leverage ratio	5.6	3.2	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 9.B. HSBC North America Holdings Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	12.6	9.3	
Tier 1 capital ratio	14.2	10.8	
Total capital ratio	18.0	13.7	
Tier 1 leverage ratio	7.5	5.6	
Supplementary leverage ratio	5.6	4.1	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 10.A. JPMorgan Chase & Co.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	12.0	4.4	4.6
Tier 1 capital ratio	13.7	6.3	6.8
Total capital ratio	15.5	8.3	8.7
Tier 1 leverage ratio	8.1	3.8	4.0
Supplementary leverage ratio	6.4	3.0	3.2

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 10.B. JPMorgan Chase & Co.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	12.0	7.2	7.3
Tier 1 capital ratio	13.7	9.1	9.5
Total capital ratio	15.5	10.6	11.1
Tier 1 leverage ratio	8.1	5.4	5.7
Supplementary leverage ratio	6.4	4.3	4.5

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 11.A. Morgan Stanley

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	16.9	7.7	
Tier 1 capital ratio	19.2	10.0	
Total capital ratio	21.8	12.5	
Tier 1 leverage ratio	8.4	4.4	
Supplementary leverage ratio	6.5	3.4	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 11.B. Morgan Stanley

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	16.9	11.2	
Tier 1 capital ratio	19.2	13.9	
Total capital ratio	21.8	15.9	
Tier 1 leverage ratio	8.4	6.0	
Supplementary leverage ratio	6.5	4.6	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 12.A. Northern Trust Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	12.9	9.0	
Tier 1 capital ratio	14.1	10.3	
Total capital ratio	16.1	12.3	
Tier 1 leverage ratio	8.0	5.8	
Supplementary leverage ratio	7.0	5.1	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 12.B. Northern Trust Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	12.9	9.5	
Tier 1 capital ratio	14.1	10.7	
Total capital ratio	16.1	12.6	
Tier 1 leverage ratio	8.0	6.1	
Supplementary leverage ratio	7.0	5.3	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 13.A. The PNC Financial Services Group, Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	9.6	5.8	
Tier 1 capital ratio	10.8	7.3	
Total capital ratio	13.0	9.6	
Tier 1 leverage ratio	9.4	6.3	
Supplementary leverage ratio	7.8	5.3	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 13.B. The PNC Financial Services Group, Inc.

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	9.6	7.6	
Tier 1 capital ratio	10.8	9.1	
Total capital ratio	13.0	11.0	
Tier 1 leverage ratio	9.4	7.9	
Supplementary leverage ratio	7.8	6.6	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 14.A. State Street Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.7	8.2	
Tier 1 capital ratio	15.5	11.8	
Total capital ratio	16.3	12.5	
Tier 1 leverage ratio	7.2	5.5	
Supplementary leverage ratio	6.3	4.8	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve’s stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board’s revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 14.B. State Street Corporation

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.7	8.9	
Tier 1 capital ratio	15.5	12.5	
Total capital ratio	16.3	13.1	
Tier 1 leverage ratio	7.2	5.8	
Supplementary leverage ratio	6.3	5.1	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 15.A. TD Group US Holdings LLC

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	16.3	12.4	
Tier 1 capital ratio	16.3	12.4	
Total capital ratio	17.3	13.6	
Tier 1 leverage ratio	9.2	7.1	
Supplementary leverage ratio	8.3	6.4	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 15.B. TD Group US Holdings LLC

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	16.3	14.4	
Tier 1 capital ratio	16.3	14.4	
Total capital ratio	17.3	15.5	
Tier 1 leverage ratio	9.2	8.3	
Supplementary leverage ratio	8.3	7.4	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 16.A. UBS Americas Holding LLC

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	21.7	11.0	
Tier 1 capital ratio	25.7	16.6	
Total capital ratio	27.0	18.6	
Tier 1 leverage ratio	11.3	7.2	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms not subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013.

Table 16.B. UBS Americas Holding LLC

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	21.7	14.3	
Tier 1 capital ratio	25.7	19.8	
Total capital ratio	27.0	21.5	
Tier 1 leverage ratio	11.3	8.7	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms not subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013.

Table 17.A. U.S. Bancorp

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	9.1	6.5	
Tier 1 capital ratio	10.7	8.2	
Total capital ratio	12.6	10.4	
Tier 1 leverage ratio	9.0	7.0	
Supplementary leverage ratio	7.2	5.6	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 17.B. U.S. Bancorp

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	9.1	8.3	
Tier 1 capital ratio	10.7	10.0	
Total capital ratio	12.6	11.9	
Tier 1 leverage ratio	9.0	8.5	
Supplementary leverage ratio	7.2	6.8	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 18.A. Wells Fargo & Company

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Severely adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.7	7.0	
Tier 1 capital ratio	13.5	8.6	
Total capital ratio	16.6	11.7	
Tier 1 leverage ratio	9.1	5.8	
Supplementary leverage ratio	7.7	4.9	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

Table 18.B. Wells Fargo & Company

Actual and minimum projected regulatory capital ratios, actual 2018:Q4 and projected 2019:Q1–2021:Q1

Federal Reserve estimates: Adverse scenario

Actual 2018:Q4 and projected capital ratios through 2021:Q1
Percent

Regulatory ratio	Actual 2018:Q4	Minimum stressed ratios	
		Original planned capital actions	Adjusted planned capital actions
Common equity tier 1 capital ratio	11.7	9.4	
Tier 1 capital ratio	13.5	11.0	
Total capital ratio	16.6	13.7	
Tier 1 leverage ratio	9.1	7.5	
Supplementary leverage ratio	7.7	6.3	

Note: These projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts of capital ratios. The tables include the minimum ratios assuming the capital actions originally submitted in April 2019 by the firms in their annual capital plans and the minimum ratios incorporating any adjustments to capital distributions made by firms after reviewing the Federal Reserve's stress test projections and original planned capital distributions for those firms that did not make adjustments. The minimum capital ratios are for the period 2019:Q1 to 2021:Q1 and do not necessarily occur in the same quarter.

Required minimum capital ratios for firms subject to the advanced approaches capital framework in CCAR 2019
Percent

Regulatory ratio	Minimum ratio
Common equity tier 1 capital ratio	4.5
Tier 1 risk-based capital ratio	6.0
Total risk-based capital ratio	8.0
Tier 1 leverage ratio	4.0
Supplementary leverage ratio	3.0

Note: All ratios are calculated in accordance with the transition arrangements provided in the Board's revised capital framework, issued in July 2013. Per amendments to the stress test and capital plan rules, the use of the advanced approaches risk-weighted asset calculations is indefinitely delayed.

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