2018 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule

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Introduction

The Dodd-Frank Wall Street Reform and Consumer Protection Act requires the Board of Governors of the Federal Reserve System (Board) to conduct an annual supervisory stress test of bank holding companies (BHCs) and U.S. intermediate holding companies of foreign banking organizations (IHCs) (collectively, firms) with $50 billion or greater in total consolidated assets, and to require firms and state member banks with total consolidated assets of more than $10 billion to conduct company-run stress tests at least once a year.[1] This publication describes the three supervisory scenarios—baseline, adverse, and severely adverse—that the Board will use in its supervisory stress test this year; that a firm or state member bank must use in conducting its annual company-run stress test; and that a firm must use to estimate projected revenues, losses, reserves, and pro forma capital levels as part of its 2018 capital plan submission.[2] The publication also details additional components that the largest and most complex firms will be required to incorporate into the supervisory scenarios—the global market shock component and the counterparty default component—and the additional scenario components to which certain IHCs will be subject (market risk components).

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[1] 12 U.S.C. 5365(i).

[2] See 12 CFR 252.14(b), 12 CFR 252.54(b), and 12 CFR 225.8.

Supervisory Scenarios

The adverse and severely adverse scenarios describe hypothetical sets of conditions designed to assess the strength of banking organizations and their resilience to adverse economic environments. The baseline scenario follows a profile similar to the average projections from a survey of economic forecasters. The scenarios are not forecasts of the Federal Reserve.[3]

The scenarios start in the first quarter of 2018 and extend through the first quarter of 2021. Each scenario includes 28 variables; this set of variables is the same as the set provided in last year's supervisory scenarios. The variables describing economic developments within the United States include:

- **Six measures of economic activity and prices:** percent changes (at an annual rate) in real and nominal gross domestic product (GDP); the unemployment rate of the civilian non-institutional population aged 16 years and over; percent changes (at an annual rate) in real and nominal disposable personal income; and the percent change (at an annual rate) in the consumer price index (CPI);

- **Four aggregate measures of asset prices or financial conditions:** indexes of house prices, commercial real estate prices, equity prices, and U.S. stock market volatility; and

- **Six measures of interest rates:** the rate on the 3-month Treasury bill; the yield on the 5-year Treasury bond; the yield on the 10-year Treasury bond; the yield on a 10-year BBB corporate security; the interest rate associated with a conforming, conventional, 30-year fixed-rate mortgage; and the prime rate.

The variables describing international economic conditions in each scenario include three variables in four countries or country blocks:

- **The three variables for each country or country block:** the percent change (at an annual rate) in real

GDP, the percent change (at an annual rate) in the CPI or local equivalent, and the level of the U.S. dollar exchange rate.

- **The four countries or country blocks included:** the euro area (the 19 European Union member states that have adopted the euro as their common currency), the United Kingdom, developing Asia (the nominal GDP-weighted aggregate of China, India, South Korea, Hong Kong Special Administrative Region, and Taiwan), and Japan.

Baseline, Adverse, and Severely Adverse Scenarios

The following sections describe the baseline, adverse, and severely adverse scenarios. The variables included in these scenarios are provided in tables at the end of this document. They can also be downloaded (together with the historical time series of the variables) from the Board's website, at www.federalreserve.gov/bankinforeg/dfa-stress-tests.htm. Historical data for the domestic and the international variables are reported in Tables 1.A and 1.B, respectively.

Baseline Scenario

The baseline outlook for U.S. real activity, inflation, and interest rates (see Table 2.A) is similar to the January 2018 consensus projections from *Blue Chip Economic Indicators*.[4] This scenario does not represent the forecast of the Federal Reserve.

The baseline scenario for the United States is a moderate economic expansion through the projection period. Real GDP grows on average between 2 and 2½ percent over the scenario period, with slightly stronger growth during 2018. The unemployment rate falls below 4 percent in the second half of 2018,

remains below 4 percent through the first half of 2020, and rises to a little above 4 percent thereafter. CPI inflation averages 2 percent in 2018 and 2¼ percent through the end of the scenario period.

Accompanying the moderate economic expansion, Treasury yields are assumed to rise modestly across the maturity spectrum for most of the scenario period before leveling off. Short-term Treasury rates increase from about 1½ percent at the beginning of 2018 to about 2½ percent by the second half of 2019, while yields on 10-year Treasury securities rise from 2½ percent to about 3½ percent by the beginning of 2020. The prime rate increases in line with short-term Treasury rates and mortgage rates rise in line with long-term Treasury yields. Reflecting steady growth and stable economic conditions, spreads between yields on investment-grade corporate bonds and yields on long-term Treasury securities widen only slightly over the scenario period. Equity prices rise about 5 percent on average each year over the scenario period. Equity market volatility rises modestly. Nominal house prices rise about 2½ percent in 2018 and 2019, and an average of about 3 percent per year thereafter. Commercial real estate prices rise about 5 percent in 2018 and 2019, and an average of about 3 percent per year through the end of the scenario period.

The baseline scenario for international variables (see Table 2.B) is similar to that reported in the January 2018 *Blue Chip Economic Indicators* and the International Monetary Fund's October 2017 *World Economic Outlook*.[5] It features an expansion in international economic activity, albeit one that proceeds at different rates in the four countries or country blocks under consideration. Real GDP growth in developing Asia averages about 6 percent in 2018, slowing slightly to about 5¾ percent per year through the end of the scenario period; similarly, real GDP growth in Japan averages about 1¼ percent in 2018 and slows to slightly less than 1 percent by the end of 2019; real GDP growth in the euro area averages slightly above 2 percent in 2018 and slows gradually to 1½ percent at the end of the scenario period. Finally, growth in the United Kingdom averages about 1½ percent per year through the scenario period.

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[5]   See International Monetary Fund (2017), "World Economic Outlook," www.imf.org/en/Publications/WEO/Issues/2017/09/ 19/world-economic-outlook-october-2017.

Adverse Scenario

The adverse scenario is characterized by weakening economic activity across all of the economies included in the scenario. This economic downturn is accompanied by rapid declines in long-term rates and flattening yield curves in the United States and the four countries/country blocks in the scenario. It is important to note that this is a hypothetical scenario designed to assess the strength of banking organizations and their resilience to adverse economic conditions. This scenario does not represent a forecast of the Federal Reserve.

In the adverse scenario, the U.S. economy experiences a moderate recession that begins in the first quarter of 2018 (see Table 3.A). Real GDP falls slightly more than 2¼ percent from the pre-recession peak in the fourth quarter of 2017 to the recession trough in the first quarter of 2019, while the unemployment rate rises steadily, peaking at 7 percent in the third quarter of 2019. The U.S. recession is accompanied by an initial fall in inflation in the first two quarters of 2018. The rate of increase in consumer prices then rises steadily before leveling off at around 2 percent by the second half of 2019.

Reflecting weak economic conditions, short-term interest rates in the United States decline to nearly zero, where they remain for the rest of the scenario period. Yields on 10-year Treasury securities drop to around ¾ of a percent in the first quarter of 2018 as the yield curve flattens, and then gradually rise to slightly less than 2 percent by the end of the scenario. Financial conditions tighten for corporations and households during the recession. Spreads between investment-grade corporate bond yields and 10-year Treasury yields gradually rise to about 3¾ percentage points by early 2019, while spreads between mortgage rates and 10-year Treasury yields widen to about 2¾ percentage points over the same period.

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

Following the recession, U.S. real activity picks up slowly at first and then gains momentum; growth in U.S. real GDP increases from ¾ of a percent in

2019 to about 3 percent in 2020. The unemployment rate declines modestly, to about 6¼ percent by the end of the scenario period. Consumer price inflation remains at roughly 2 percent through the end of the scenario period. Yields on 10-year Treasury securities continue to rise gradually to slightly less than 2 percent by the end of the scenario period.

Outside of the United States, the adverse scenario features moderate recessions in the euro area and the United Kingdom, a pronounced and protracted recession in Japan, as well as below-trend growth in developing Asia (see Table 3.B). Weakness in global demand results in slowing inflation in all of the foreign economies under consideration and the onset of deflationary episodes in Japan and—more modestly—developing Asia. Reflecting flight-to-safety capital flows, the U.S. dollar appreciates against the euro, the pound sterling, and the currencies of developing Asia. The dollar depreciates modestly against the yen, also in line with flight-to-safety capital flows.

Comparison of the 2018 Adverse Scenario and the 2017 Adverse Scenario

The main difference relative to the 2017 adverse scenario is that this year's adverse scenario features lower long-term interest rates and a flatter yield curve across all of the economies included in the scenario. This different profile of interest rates is associated with a less pronounced decline in the U.S. equity price index in this year's scenario.

Additional Key Features of the Adverse Scenario

As in last year's adverse scenario, the slowdown in euro area economic activity reflects a broad-based contraction in euro area demand, not a contraction that is concentrated in a few specific economies. Similarly, the slowdown in developing Asia reflects a weakening in economic conditions across emerging market economies, not merely a weakening in Asia-specific conditions. Declines in aggregate U.S. residential real estate prices and commercial real estate prices should be assumed to be concentrated in regions that have experienced rapid price gains over the past two years. Declines in prices of U.S. housing and commercial real estate should also be assumed to be representative of risks to house prices and commercial real estate prices in foreign regions and economies that have experienced rapid price gains over the past two years.

Severely Adverse Scenario

The severely adverse scenario is characterized by a severe global recession that is accompanied by a global aversion to long-term fixed-income assets. As a result, long-term rates do not fall and yield curves steepen in the United States and the four countries/country blocks in the scenario. In turn, these developments lead to a broad-based and deep correction in asset prices—including in the corporate bond and real estate markets. It is important to note that this is a hypothetical scenario designed to assess the strength of banking organizations and their resilience to unfavorable economic conditions. This scenario does not represent a forecast of the Federal Reserve.

In this scenario, the level of U.S. real GDP begins to decline in the first quarter of 2018 and reaches a trough in the third quarter of 2019 that is 7½ percent below the pre-recession peak (see Table 4.A). The unemployment rate increases almost 6 percentage points, to 10 percent, by the third quarter of 2019. Headline consumer price inflation falls below 1 percent at an annual rate in the second quarter of 2018 and rises to about 1½ percent at an annual rate by the end of the scenario.

As a result of the severe decline in real activity, short-term Treasury rates fall and remain near zero through the end of the scenario period. However, investor aversion to long-term fixed-income assets keeps 10-year Treasury yields unchanged through the scenario period. Financial conditions in corporate and real estate lending markets are stressed severely. The spread between yields on investment-grade corporate bonds and yields on long-term Treasury securities widens to 5¾ percentage points by the start of 2019, while the spread between mortgage rates and 10-year Treasury yields widens to about 3½ percentage points over the same time period.

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

The international component of this scenario features a sharp global downturn, with severe recessions in the euro area, the United Kingdom, and Japan

and a shallow and brief recession in developing Asia (see Table 4.B). As a result of the sharp contraction in economic activity, all foreign economies included in the scenario experience a decline in consumer prices, with Japan experiencing a more significant deflation that persists through the end of the scenario period. As in this year's adverse scenario, the U.S. dollar appreciates against the euro, the pound sterling, and the currencies of developing Asia but depreciates modestly against the yen because of flight-to-safety capital flows.

Comparison of the 2018 Severely Adverse Scenario and the 2017 Severely Adverse Scenario

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

Additional Key Features of the Severely Adverse Scenario

As in the adverse scenario, the weakness in euro area economic conditions reflects a broad-based contraction in euro area demand, although this contraction should be assumed to be more protracted in countries with less room for fiscal policy stabilization. The sharp slowdown in developing Asia is distributed unevenly across countries, with more pronounced decelerations in the larger economies. Economic conditions in developing Asia should be assumed to be representative of conditions across emerging market economies.

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[6] See 12 CFR 252, Appendix A.

As in the adverse scenario, declines in aggregate U.S. residential real estate prices and commercial real estate prices should be assumed to be concentrated in regions that have experienced rapid price gains over the past two years. Declines in prices of U.S. housing and commercial real estate should also be assumed to be representative of risks to house prices and commercial real estate prices in foreign regions and economies that have experienced rapid price gains over the past two years.

Global Market Shock Component for Supervisory Adverse and Severely Adverse Scenarios

The global market shock is a set of instantaneous, hypothetical shocks to a large set of risk factors. Generally, these shocks involve large and sudden changes in asset prices, interest rates, and spreads, reflecting general market distress and heightened uncertainty.[7] Firms with significant trading activity will be required to include the global market shock as part of their supervisory adverse and severely adverse scenarios.[8] In addition, as discussed below, certain large and highly interconnected firms must apply the same global market shock to their counterparty exposures to project losses under the counterparty default scenario component. The as-of date for the global market shock is December 4, 2017.[9]

2018 Adverse Scenario

The global market shock component for the adverse scenario simulates a marked decline in the economic outlook for developing Asian markets. As a result, sovereign credit spreads widen and currencies generally depreciate significantly in these markets. This shock spreads to other global markets, which results

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[7] The global market shock component consists of shocks to a large number of risk factors that include a wide range of financial market variables that affect asset prices, such as a credit spread or the yield on a bond, and also include, in some cases, shocks to the value of the position itself (for example, the market value of private-equity positions).

[8] For this cycle, six BHCs are subject to the global market shock component: Bank of America Corporation; Citigroup Inc.; The Goldman Sachs Group, Inc.; JPMorgan Chase & Co.; Morgan Stanley; and Wells Fargo & Company. See 12 CFR 252.54(b)(2)(i).

[9] A firm may use data as of the date that corresponds to its weekly internal risk reporting cycle as long as it falls during the business week of the as-of date for the global market shock (i.e., December 4-8, 2017). Losses from the global market shock will be assumed to occur in the first quarter of the planning horizon.

in increases in general risk premiums and credit risk. U.S. interest rates move lower across the term structure. Due to a sharp reduction in demand from developing Asia, most global commodity prices and currencies of commodity exporters decline significantly. Equity markets decline broadly.

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

2018 Severely Adverse Scenario

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

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

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

Counterparty Default Component for Supervisory Adverse and Severely Adverse Scenarios

The eight BHCs with substantial trading or custodial operations will be required to incorporate a counter-

party default scenario component into their supervisory adverse and severely adverse stress scenarios for CCAR 2018.[10] The counterparty default scenario component involves the instantaneous and unexpected default of the BHC's largest counterparty.[11]

In connection with the counterparty default scenario component, these BHCs will be required to estimate and report the potential losses and related effects on capital associated with the instantaneous and unexpected default of the counterparty that would generate the largest losses across their derivatives and securities financing activities, including securities lending and repurchase or reverse repurchase agreement activities. The counterparty default scenario component is an add-on to the macroeconomic conditions and financial market environment specified in the Federal Reserve's adverse and severely adverse stress scenarios.

Each BHC's largest counterparty will be determined by net stressed losses; estimated by applying the global market shock to revalue non-cash securities financing activity assets (securities or collateral) posted or received; and for derivatives, to the value of the trade position and non-cash collateral exchanged. The as-of date for the counterparty default scenario component is December 4, 2017—the same date as the global market shock.[12]

Market Risk Components for Supervisory Adverse and Severely Adverse Scenarios for IHCs

Beginning in CCAR 2019, an additional six firms with significant trading activity will be subject to the global market shock component in their adverse and

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[10] The eight LISCC BHCs subject to the counterparty default component are as follows: Bank of America Corporation; The Bank of New York Mellon Corp.; Citigroup Inc.; The Goldman Sachs Group, Inc.; JPMorgan Chase & Co.; Morgan Stanley; State Street Corp.; and Wells Fargo & Company. See 12 CFR 252.54(b)(2)(ii).

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

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

severely adverse scenarios.[13] For 2018, these firms will be subject to interim market risk components in the supervisory adverse and severely adverse scenarios used in the annual company-run stress test (company-run market risk component) and the supervisory stress test (supervisory market risk component) to assess the potential losses and capital impact in connection with each firm's trading and counterparty activity.[14]

For the company-run stress test, each firm must reflect trading and counterparty losses in the adverse and severely adverse scenarios using a company-run market risk component described in the individual notices to these firms that is tailored to the firms' risks.

For the supervisory stress test, the Federal Reserve will apply a supervisory market risk component, which is a simplified version of the global market shock and large counterparty default scenario component. As described in the letters to the IHCs, the Federal Reserve will apply specific loss rates to certain exposures, based on the losses used in the global market shock and large counterparty default components in 2014-2017. Specifically, the following loss rates will be applied to the applicable measure of exposures as of December 31, 2017:

- **Securitized products losses:** 22.1% loss rate in the adverse scenario and 46.4% loss rate in the severely adverse scenario to certain loans and credits held for trading.[15]

- **Trading mark-to-market and trading incremental default risk losses:** 1.4% loss rate in the adverse scenario and 1.8% loss rate in the severely adverse scenario to market risk-weighted assets.[16]

- **Credit valuation adjustments:** 1.3% loss rate in the adverse scenario and 2.8% loss rate in the severely adverse scenario to over-the-counter derivatives risk-weighted assets.[17]

- **Large counterparty default losses:** 1.0% loss rate in the adverse scenario and 1.5% loss rate in the severely adverse scenario to repo-style transactions and over-the-counter derivatives risk-weighted assets.[18]

Losses on the supervisory market risk component will be treated as an add-on to any losses associated with the macroeconomic scenarios and will be assumed to occur in the first quarter of the planning horizon. The Board will apply the same methodology to all U.S. IHCs subject to the supervisory market risk component in 2018.

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

[14] See 12 CFR 252.44(b); 12 CFR 252.54(b)(2)(ii).

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

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

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

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

Variables for the Supervisory Scenarios

Table 1.A. Historical data: Domestic variables, Q1:2000–Q4:2017
Percent, unless otherwise indicated.

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q1 2000	1.2	4.3	8.1	11.8	4.0	4.0	5.5	6.6	6.7	8.2	8.3	8.7	14,296	102	127	27.0
Q2 2000	7.8	10.2	4.2	6.1	3.9	3.2	5.7	6.5	6.4	8.5	8.3	9.2	13,619	105	125	33.5
Q3 2000	0.5	3.1	4.8	7.4	4.0	3.7	6.0	6.1	6.1	8.1	8.0	9.5	13,613	107	139	21.9
Q4 2000	2.3	4.5	1.4	3.6	3.9	2.9	6.0	5.6	5.8	7.9	7.6	9.5	12,176	110	144	31.7
Q1 2001	-1.1	1.4	3.5	6.3	4.2	3.9	4.8	4.9	5.3	7.4	7.0	8.6	10,646	112	143	32.8
Q2 2001	2.1	5.1	-0.3	1.6	4.4	2.8	3.7	4.9	5.5	7.5	7.1	7.3	11,407	114	142	34.7
Q3 2001	-1.3	0.0	9.8	10.1	4.8	1.1	3.2	4.6	5.3	7.3	7.0	6.6	9,563	116	143	43.7
Q4 2001	1.1	2.3	-4.9	-4.6	5.5	-0.3	1.9	4.2	5.1	7.2	6.8	5.2	10,708	118	139	35.3
Q1 2002	3.7	5.1	10.1	10.9	5.7	1.3	1.7	4.5	5.4	7.6	7.0	4.8	10,776	120	140	26.1
Q2 2002	2.2	3.8	2.0	5.2	5.8	3.2	1.7	4.5	5.4	7.6	6.8	4.8	9,384	123	140	28.4
Q3 2002	2.0	3.8	-0.5	1.5	5.7	2.2	1.6	3.4	4.5	7.3	6.3	4.8	7,774	127	142	45.1
Q4 2002	0.3	2.4	1.9	3.8	5.9	2.4	1.3	3.1	4.3	7.0	6.1	4.5	8,343	129	144	42.6
Q1 2003	2.1	4.6	1.1	4.0	5.9	4.2	1.2	2.9	4.2	6.5	5.8	4.3	8,052	132	151	34.7
Q2 2003	3.8	5.1	5.9	6.3	6.1	-0.7	1.0	2.6	3.8	5.7	5.5	4.2	9,342	135	151	29.1
Q3 2003	6.9	9.3	6.7	9.3	6.1	3.0	0.9	3.1	4.4	6.0	6.0	4.0	9,650	139	149	22.7
Q4 2003	4.8	6.8	1.6	3.3	5.8	1.5	0.9	3.2	4.4	5.8	5.9	4.0	10,800	143	147	21.1
Q1 2004	2.3	5.9	2.9	6.1	5.7	3.4	0.9	3.0	4.1	5.5	5.6	4.0	11,039	148	153	21.6
Q2 2004	3.0	6.6	4.0	7.0	5.6	3.2	1.1	3.7	4.7	6.1	6.1	4.0	11,145	154	164	20.0
Q3 2004	3.7	6.3	2.1	4.5	5.4	2.6	1.5	3.5	4.4	5.8	5.9	4.4	10,894	159	175	19.3
Q4 2004	3.5	6.4	5.1	8.5	5.4	4.4	2.0	3.5	4.3	5.4	5.7	4.9	11,951	165	178	16.6
Q1 2005	4.3	8.3	-3.8	-1.8	5.3	2.0	2.5	3.9	4.4	5.4	5.8	5.4	11,637	172	179	14.7
Q2 2005	2.1	5.1	3.2	6.0	5.1	2.7	2.9	3.9	4.2	5.5	5.7	5.9	11,857	179	185	17.7
Q3 2005	3.4	7.3	2.1	6.6	5.0	6.2	3.4	4.0	4.3	5.5	5.8	6.4	12,283	185	190	14.2
Q4 2005	2.3	5.4	3.4	6.6	5.0	3.8	3.8	4.4	4.6	5.9	6.2	7.0	12,497	191	199	16.5
Q1 2006	4.9	8.2	9.5	11.5	4.7	2.1	4.4	4.6	4.7	6.0	6.2	7.4	13,122	194	204	14.6
Q2 2006	1.2	4.5	0.6	3.7	4.6	3.7	4.7	5.0	5.2	6.5	6.6	7.9	12,809	193	213	23.8
Q3 2006	0.4	3.2	1.2	4.1	4.6	3.8	4.9	4.8	5.0	6.4	6.6	8.3	13,322	192	220	18.6
Q4 2006	3.2	4.6	5.3	4.6	4.4	-1.6	4.9	4.6	4.7	6.1	6.2	8.3	14,216	191	222	12.7
Q1 2007	0.2	4.8	2.6	6.5	4.5	4.0	5.0	4.6	4.8	6.1	6.2	8.3	14,354	189	230	19.6
Q2 2007	3.1	5.4	0.8	4.0	4.5	4.6	4.7	4.7	4.9	6.3	6.4	8.3	15,163	184	239	18.9
Q3 2007	2.7	4.2	1.1	3.4	4.7	2.6	4.3	4.5	4.8	6.5	6.6	8.2	15,318	178	247	30.8
Q4 2007	1.4	3.2	0.3	4.4	4.8	5.0	3.4	3.8	4.4	6.4	6.2	7.5	14,754	172	249	31.1
Q1 2008	-2.7	-0.5	2.9	6.5	5.0	4.4	2.1	2.8	3.9	6.5	5.9	6.2	13,284	165	236	32.2
Q2 2008	2.0	4.0	8.7	13.3	5.3	5.3	1.6	3.2	4.1	6.8	6.1	5.1	13,016	157	224	24.1
Q3 2008	-1.9	0.8	-8.9	-5.1	6.0	6.3	1.5	3.1	4.1	7.2	6.3	5.0	11,826	150	231	46.7
Q4 2008	-8.2	-7.7	2.6	-3.2	6.9	-8.9	0.3	2.2	3.7	9.4	5.9	4.1	9,057	142	219	80.9
Q1 2009	-5.4	-4.5	-0.8	-3.0	8.3	-2.7	0.2	1.9	3.2	9.0	5.1	3.3	8,044	138	208	56.7
Q2 2009	-0.5	-1.2	2.9	4.7	9.3	2.1	0.2	2.3	3.7	8.2	5.0	3.3	9,343	138	180	42.3

Table 1.A.—*continued*

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q3 2009	1.3	1.2	-4.3	-1.9	9.6	3.5	0.2	2.5	3.8	6.8	5.2	3.3	10,813	138	160	31.3
Q4 2009	3.9	5.2	-0.5	2.2	9.9	3.2	0.1	2.3	3.7	6.1	4.9	3.3	11,385	139	160	30.7
Q1 2010	1.7	3.2	0.4	1.8	9.8	0.6	0.1	2.4	3.9	5.8	5.0	3.3	12,032	139	152	27.3
Q2 2010	3.9	5.8	5.3	5.8	9.6	-0.1	0.1	2.3	3.6	5.6	4.9	3.3	10,646	138	165	45.8
Q3 2010	2.7	4.6	2.0	3.2	9.5	1.2	0.2	1.6	2.9	5.1	4.4	3.3	11,814	135	165	32.9
Q4 2010	2.5	4.7	2.8	5.0	9.5	3.3	0.1	1.5	3.0	5.0	4.4	3.3	13,131	134	167	23.5
Q1 2011	-1.5	0.2	5.0	8.2	9.0	4.3	0.1	2.1	3.5	5.4	4.8	3.3	13,909	133	172	29.4
Q2 2011	2.9	6.0	-0.6	3.5	9.1	4.6	0.0	1.8	3.3	5.1	4.7	3.3	13,843	132	173	22.7
Q3 2011	0.8	3.3	2.1	4.3	9.0	2.6	0.0	1.1	2.5	4.9	4.3	3.3	11,677	133	172	48.0
Q4 2011	4.6	5.2	0.2	1.6	8.6	1.8	0.0	1.0	2.1	5.0	4.0	3.3	13,019	133	178	45.5
Q1 2012	2.7	4.9	6.7	9.2	8.3	2.3	0.1	0.9	2.1	4.7	3.9	3.3	14,627	134	180	23.0
Q2 2012	1.9	3.8	3.1	4.4	8.2	0.8	0.1	0.8	1.8	4.5	3.8	3.3	14,100	138	181	26.7
Q3 2012	0.5	2.7	-0.2	1.1	8.0	1.8	0.1	0.7	1.6	4.2	3.6	3.3	14,895	140	187	20.5
Q4 2012	0.1	1.7	10.9	13.3	7.8	2.7	0.1	0.7	1.7	3.9	3.4	3.3	14,835	143	187	22.7
Q1 2013	2.8	4.4	-15.7	-14.5	7.7	1.6	0.1	0.8	1.9	4.0	3.5	3.3	16,396	147	190	19.0
Q2 2013	0.8	1.6	2.4	2.5	7.5	-0.5	0.1	0.9	2.0	4.1	3.7	3.3	16,771	151	199	20.5
Q3 2013	3.1	5.1	2.4	3.9	7.2	2.2	0.0	1.5	2.7	4.9	4.4	3.3	17,718	155	208	17.0
Q4 2013	4.0	6.1	0.9	2.6	6.9	1.6	0.1	1.4	2.8	4.8	4.3	3.3	19,413	158	212	20.3
Q1 2014	-0.9	0.7	4.3	6.5	6.7	2.6	0.0	1.6	2.8	4.6	4.4	3.3	19,711	160	211	21.4
Q2 2014	4.6	7.0	5.3	7.1	6.2	1.9	0.0	1.7	2.7	4.3	4.2	3.3	20,569	161	220	17.0
Q3 2014	5.2	7.1	4.2	5.5	6.1	1.0	0.0	1.7	2.5	4.2	4.1	3.3	20,459	163	223	17.0
Q4 2014	2.0	2.6	5.9	5.7	5.7	-0.7	0.0	1.6	2.3	4.2	4.0	3.3	21,425	166	234	26.3
Q1 2015	3.2	3.2	4.3	2.6	5.6	-2.5	0.0	1.5	2.0	4.0	3.7	3.3	21,708	168	249	22.4
Q2 2015	2.7	5.0	3.8	5.6	5.4	2.4	0.0	1.5	2.2	4.2	3.8	3.3	21,631	170	251	18.9
Q3 2015	1.6	3.0	1.8	3.2	5.1	1.5	0.0	1.6	2.3	4.5	4.0	3.3	19,959	172	257	40.7
Q4 2015	0.5	1.3	2.9	3.1	5.0	0.4	0.1	1.6	2.2	4.6	3.9	3.3	21,101	175	254	24.4
Q1 2016	0.6	0.8	0.2	0.9	4.9	0.1	0.3	1.4	2.0	4.6	3.7	3.5	21,179	177	245	28.1
Q2 2016	2.2	4.7	1.9	4.0	4.9	2.3	0.3	1.3	1.8	4.1	3.6	3.5	21,621	179	248	25.8
Q3 2016	2.8	4.2	0.7	2.5	4.9	1.8	0.3	1.2	1.6	3.7	3.4	3.5	22,469	182	266	18.1
Q4 2016	1.8	3.8	-1.8	0.1	4.7	3.0	0.4	1.7	2.2	4.1	3.8	3.5	23,277	184	269	22.5
Q1 2017	1.2	3.3	2.9	5.2	4.7	3.1	0.6	2.0	2.5	4.2	4.2	3.8	24,508	187	262	13.1
Q2 2017	3.1	4.1	2.7	3.0	4.3	-0.3	0.9	1.8	2.3	4.0	4.0	4.0	25,125	190	272	16.0
Q3 2017	3.2	5.3	0.5	2.1	4.3	2.0	1.0	1.8	2.3	3.9	3.9	4.3	26,149	193	275	16.0
Q4 2017	2.7	5.0	1.9	5.6	4.1	3.7	1.2	2.1	2.4	4.0	3.9	4.3	27,673	194	279	13.1

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

Table 1.B. Historical data: International variables, Q1:2000–Q4:2017
Percent, unless otherwise indicated.

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q1 2000	4.6	2.6	0.957	7.0	1.5	100.0	8.0	-0.5	102.7	3.8	0.3	1.592
Q2 2000	3.6	0.9	0.955	7.1	-0.3	100.7	0.9	-1.1	106.1	2.9	0.5	1.513
Q3 2000	2.2	3.4	0.884	8.1	2.2	101.5	0.3	-0.3	107.9	1.2	1.0	1.479
Q4 2000	3.1	2.8	0.939	3.0	2.4	105.1	3.8	-1.1	114.4	0.8	1.9	1.496
Q1 2001	3.4	1.2	0.879	4.9	1.7	106.0	2.3	0.7	125.5	4.1	-0.1	1.419
Q2 2001	0.6	4.0	0.847	5.5	2.1	106.1	-1.9	-2.3	124.7	3.4	3.2	1.408
Q3 2001	0.3	1.4	0.910	4.7	1.3	106.4	-4.4	-0.5	119.2	2.6	1.0	1.469
Q4 2001	0.9	1.7	0.890	8.5	0.0	106.9	-1.0	-1.9	131.0	1.3	-0.1	1.454
Q1 2002	0.5	3.1	0.872	7.7	0.5	107.3	0.4	-1.1	132.7	1.9	2.0	1.425
Q2 2002	1.9	2.0	0.986	8.1	1.1	104.8	3.2	0.1	119.9	2.9	0.9	1.525
Q3 2002	1.6	1.6	0.988	7.2	1.5	105.5	1.6	-0.4	121.7	3.3	1.3	1.570
Q4 2002	0.6	2.3	1.049	6.5	0.7	104.5	1.1	-0.8	118.8	3.8	1.9	1.610
Q1 2003	-1.0	3.3	1.090	6.7	3.6	105.5	-0.5	0.0	118.1	2.5	1.7	1.579
Q2 2003	0.2	0.5	1.150	2.1	1.1	104.0	3.3	0.3	119.9	3.7	0.2	1.653
Q3 2003	2.1	2.1	1.165	14.3	0.1	102.6	1.6	-0.5	111.4	4.0	1.7	1.662
Q4 2003	3.1	2.3	1.260	13.0	5.5	103.4	4.5	-1.0	107.1	3.1	1.7	1.784
Q1 2004	2.3	2.2	1.229	5.6	4.0	101.4	3.1	0.8	104.2	2.1	1.4	1.840
Q2 2004	2.1	2.6	1.218	6.9	4.1	102.8	-0.1	-0.4	109.4	1.7	0.8	1.813
Q3 2004	1.2	2.0	1.242	8.2	4.1	102.7	2.1	-0.1	110.2	0.9	1.1	1.809
Q4 2004	1.5	2.4	1.354	6.4	0.8	98.9	-1.1	1.9	102.7	1.5	2.4	1.916
Q1 2005	0.7	1.4	1.297	10.6	2.9	98.6	1.9	-1.2	107.2	3.4	2.6	1.889
Q2 2005	2.7	2.2	1.210	8.6	1.5	98.9	3.2	-1.0	110.9	4.4	1.8	1.793
Q3 2005	3.0	3.1	1.206	9.3	2.4	98.6	3.9	-1.0	113.3	4.3	2.8	1.770
Q4 2005	2.4	2.4	1.184	11.7	1.6	98.1	0.8	0.1	117.9	6.0	1.4	1.719
Q1 2006	3.7	1.7	1.214	11.0	2.4	96.8	0.3	1.2	117.5	1.1	1.9	1.739
Q2 2006	4.3	2.5	1.278	7.0	3.2	96.7	1.4	0.4	114.5	0.8	3.0	1.849
Q3 2006	2.6	2.1	1.269	10.3	2.2	96.4	-0.7	0.4	118.0	0.3	3.3	1.872
Q4 2006	4.5	0.9	1.320	11.2	3.6	94.6	4.9	-0.5	119.0	1.5	2.6	1.959
Q1 2007	3.0	2.3	1.337	13.9	3.6	94.0	3.0	-0.7	117.6	3.7	2.5	1.969
Q2 2007	2.6	2.3	1.352	10.5	4.9	91.9	0.5	0.4	123.4	2.9	1.8	2.006
Q3 2007	2.0	2.1	1.422	8.7	7.6	90.6	-1.8	0.3	115.0	2.7	0.3	2.039
Q4 2007	2.1	4.8	1.460	12.8	5.9	89.4	2.0	2.2	111.7	3.3	4.0	1.984
Q1 2008	2.2	4.3	1.581	7.2	8.1	88.0	1.2	1.2	99.9	1.1	3.4	1.986
Q2 2008	-1.5	3.2	1.575	6.0	6.3	88.7	-2.0	1.8	106.2	-2.7	5.8	1.991
Q3 2008	-2.3	3.2	1.408	3.1	2.9	91.5	-5.0	3.4	105.9	-6.3	5.9	1.780
Q4 2008	-6.7	-1.4	1.392	0.3	-1.1	92.2	-8.8	-2.1	90.8	-8.4	0.4	1.462
Q1 2009	-11.2	-1.1	1.326	4.4	-1.4	94.2	-18.2	-3.6	99.2	-6.2	-0.2	1.430
Q2 2009	-1.1	0.0	1.402	15.1	2.3	92.2	8.7	-1.6	96.4	-0.9	2.3	1.645
Q3 2009	1.2	1.1	1.463	12.7	4.1	91.3	0.1	-1.4	89.5	0.6	3.6	1.600
Q4 2009	2.2	1.6	1.433	9.2	5.0	90.6	5.9	-1.5	93.1	1.1	2.8	1.617
Q1 2010	1.7	1.8	1.353	9.8	4.4	89.8	3.5	1.0	93.4	2.2	4.2	1.519
Q2 2010	3.8	2.0	1.229	9.7	3.4	91.0	5.1	-1.4	88.5	3.6	3.3	1.495
Q3 2010	1.8	1.6	1.360	8.8	4.2	88.4	7.5	-1.9	83.5	1.9	2.2	1.573
Q4 2010	2.4	2.6	1.327	9.2	7.5	87.4	-2.9	1.3	81.7	0.3	3.9	1.539
Q1 2011	3.4	3.7	1.418	9.8	6.2	86.4	-6.1	-0.1	82.8	2.4	7.0	1.605
Q2 2011	0.0	3.2	1.452	6.5	5.4	85.3	-1.9	-0.7	80.6	0.6	4.6	1.607
Q3 2011	0.0	1.3	1.345	5.4	5.3	87.3	10.1	0.3	77.0	1.5	3.5	1.562
Q4 2011	-1.4	3.5	1.297	6.7	3.0	87.3	-0.6	-0.6	77.0	0.8	3.4	1.554
Q1 2012	-0.6	2.8	1.333	7.4	3.2	86.2	4.6	2.2	82.4	2.6	2.3	1.599
Q2 2012	-1.4	2.3	1.267	5.9	3.9	88.0	-2.4	-1.4	79.8	-0.4	1.9	1.569

(continued)

Table 1.B.—*continued*

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q3 2012	-0.6	1.6	1.286	6.6	2.2	86.1	-1.5	-1.9	77.9	4.7	2.1	1.613
Q4 2012	-1.7	2.4	1.319	7.2	3.5	86.0	0.9	0.1	86.6	-0.6	4.2	1.626
Q1 2013	-1.3	1.2	1.282	6.5	4.3	86.2	4.5	0.7	94.2	2.6	3.0	1.519
Q2 2013	1.9	0.4	1.301	6.4	3.0	87.1	3.8	-0.1	99.2	2.2	1.5	1.521
Q3 2013	1.4	1.3	1.354	7.7	3.7	86.5	3.1	2.7	98.3	3.4	2.1	1.618
Q4 2013	1.0	0.3	1.378	6.7	4.0	85.8	0.0	2.6	105.3	2.1	1.7	1.657
Q1 2014	1.7	0.8	1.378	6.0	1.4	86.8	3.3	1.1	103.0	3.5	1.8	1.668
Q2 2014	0.5	0.0	1.369	7.4	2.6	86.6	-6.6	8.2	101.3	3.5	1.4	1.711
Q3 2014	1.7	0.3	1.263	6.7	2.3	86.9	-0.2	1.6	109.7	3.1	0.8	1.622
Q4 2014	2.0	-0.4	1.210	5.7	1.2	88.1	2.8	-0.5	119.9	3.1	-0.4	1.558
Q1 2015	3.0	-0.9	1.074	6.1	0.8	87.9	5.1	0.4	120.0	1.4	-1.3	1.485
Q2 2015	1.3	1.9	1.115	6.9	2.8	88.3	0.5	0.5	122.1	2.3	0.8	1.573
Q3 2015	1.7	-0.2	1.116	6.5	2.7	90.9	0.3	0.1	119.8	1.7	0.8	1.512
Q4 2015	1.9	-0.1	1.086	5.4	1.5	92.2	-0.9	-0.4	120.3	2.9	0.0	1.475
Q1 2016	2.0	-1.3	1.139	6.6	2.8	91.7	2.2	0.0	112.4	0.8	-0.1	1.438
Q2 2016	1.4	1.2	1.103	6.6	2.8	94.0	1.6	-1.1	102.8	1.9	0.7	1.324
Q3 2016	1.6	1.2	1.124	6.1	1.2	93.6	0.9	-0.5	101.2	2.2	2.2	1.302
Q4 2016	2.7	1.8	1.055	5.7	2.3	97.5	1.4	3.0	116.8	3.0	2.0	1.234
Q1 2017	2.5	2.8	1.070	6.7	0.6	95.2	1.5	-0.1	111.4	1.2	3.7	1.254
Q2 2017	2.9	0.2	1.141	6.0	2.0	94.5	2.9	-0.8	112.4	1.2	3.0	1.300
Q3 2017	2.9	1.0	1.181	6.6	2.4	93.5	2.5	0.4	112.6	1.6	2.4	1.340
Q4 2017	2.3	1.7	1.202	5.9	2.6	91.0	1.8	0.9	112.7	1.4	2.9	1.353

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

Table 2.A. Supervisory baseline scenario: Domestic variables, Q1:2018–Q1:2021
Percent, unless otherwise indicated.

Date	Real GDP growth	Nominal GDP growth	Real dispo-sable income growth	Nominal dispo-sable income growth	Unem-ployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Com-mercial Real Estate Price Index	Market Volatility Index
Q1 2018	2.5	4.6	4.0	6.1	4.0	2.1	1.4	2.2	2.6	4.1	4.1	4.6	28,019	196	282	15.3
Q2 2018	2.8	4.8	2.9	4.8	4.0	1.9	1.7	2.4	2.7	4.3	4.3	4.8	28,382	197	286	17.5
Q3 2018	2.6	4.7	2.9	4.9	3.9	2.1	1.9	2.5	2.8	4.4	4.4	5.0	28,747	198	289	18.7
Q4 2018	2.5	4.6	2.8	4.8	3.8	2.1	2.1	2.7	2.9	4.5	4.5	5.2	29,110	199	293	20.0
Q1 2019	2.3	4.5	2.9	5.0	3.8	2.2	2.2	2.8	3.1	4.6	4.7	5.3	29,472	201	297	20.9
Q2 2019	2.3	4.4	2.5	4.5	3.8	2.2	2.4	2.8	3.1	4.7	4.8	5.5	29,830	202	300	21.5
Q3 2019	2.1	4.3	2.4	4.4	3.8	2.2	2.5	2.9	3.2	4.8	4.9	5.6	30,187	203	304	22.1
Q4 2019	2.0	4.2	2.3	4.4	3.7	2.4	2.6	2.9	3.3	4.9	4.9	5.7	30,538	204	308	22.1
Q1 2020	2.1	4.2	2.2	4.3	3.8	2.3	2.7	3.0	3.5	5.1	5.1	5.7	30,892	206	310	23.5
Q2 2020	2.1	4.2	2.3	4.4	3.9	2.3	2.7	3.0	3.5	5.1	5.2	5.7	31,255	207	313	23.6
Q3 2020	2.1	4.2	2.3	4.4	4.0	2.3	2.7	3.1	3.5	5.2	5.2	5.7	31,623	209	315	23.8
Q4 2020	2.1	4.2	2.3	4.4	4.0	2.3	2.7	3.1	3.6	5.2	5.2	5.8	31,995	211	317	23.8
Q1 2021	2.1	4.2	2.3	4.4	4.1	2.3	2.7	3.1	3.6	5.2	5.3	5.8	32,371	212	320	23.9

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

Table 2.B. Supervisory baseline scenario: International variables, Q1:2018–Q1:2021
Percent, unless otherwise indicated.

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q1 2018	2.1	1.5	1.201	6.0	2.5	91.5	1.5	0.9	112.7	1.4	2.6	1.350
Q2 2018	2.1	1.5	1.199	6.0	2.5	92.0	1.4	1.0	112.8	1.4	2.5	1.347
Q3 2018	2.0	1.6	1.198	6.0	2.5	92.5	1.2	1.0	112.8	1.4	2.4	1.344
Q4 2018	2.0	1.6	1.197	5.9	2.6	93.0	1.1	1.1	112.8	1.4	2.3	1.341
Q1 2019	1.9	1.6	1.202	5.8	2.7	93.2	1.1	1.2	112.6	1.4	2.2	1.344
Q2 2019	1.9	1.6	1.208	5.8	2.8	93.5	1.0	1.2	112.3	1.4	2.1	1.347
Q3 2019	1.8	1.7	1.213	5.7	2.9	93.7	1.0	1.3	112.0	1.4	2.1	1.351
Q4 2019	1.8	1.7	1.219	5.8	2.8	94.0	0.9	1.4	111.8	1.4	2.0	1.354
Q1 2020	1.8	1.8	1.219	5.8	2.8	94.0	0.8	1.4	111.8	1.5	2.0	1.354
Q2 2020	1.7	1.8	1.219	5.9	2.7	94.0	0.8	1.5	111.8	1.5	1.9	1.354
Q3 2020	1.7	1.9	1.219	5.9	2.7	94.0	0.8	1.5	111.8	1.5	1.9	1.354
Q4 2020	1.7	1.9	1.219	5.8	2.7	94.0	0.8	1.6	111.8	1.5	1.9	1.354
Q1 2021	1.6	1.9	1.219	5.7	2.8	94.0	0.8	1.6	111.8	1.6	1.9	1.354

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

Table 3.A. Supervisory adverse scenario: Domestic variables, Q1:2018–Q1:2021
Percent, unless otherwise indicated.

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q1 2018	-1.3	1.2	2.4	4.2	4.5	1.7	0.6	0.0	0.7	3.8	3.2	3.8	24,589	191	272	28.0
Q2 2018	-3.5	-1.4	-1.2	0.2	5.3	1.3	0.1	0.1	0.8	4.2	3.4	3.3	22,884	185	262	33.1
Q3 2018	-2.4	-0.4	-1.8	-0.2	5.8	1.6	0.1	0.2	0.9	4.4	3.6	3.3	21,104	180	254	33.7
Q4 2018	-1.3	0.6	-1.1	0.6	6.3	1.7	0.1	0.3	1.0	4.6	3.7	3.3	20,858	177	247	32.8
Q1 2019	-0.7	1.3	-0.3	1.5	6.6	1.8	0.1	0.4	1.1	4.8	3.9	3.2	19,718	174	242	31.7
Q2 2019	0.4	2.3	-0.1	1.6	6.9	1.9	0.1	0.5	1.2	4.8	3.9	3.2	19,998	172	239	28.8
Q3 2019	1.0	2.9	0.5	2.2	7.0	1.9	0.1	0.6	1.3	4.7	3.9	3.2	20,580	171	237	25.7
Q4 2019	2.5	4.3	1.0	2.9	7.0	2.1	0.1	0.6	1.4	4.6	3.9	3.2	21,350	171	237	23.1
Q1 2020	2.8	4.5	2.3	4.2	6.9	2.1	0.1	0.7	1.6	4.6	4.0	3.2	22,145	171	237	21.3
Q2 2020	3.0	4.7	2.4	4.2	6.8	2.0	0.1	0.7	1.7	4.4	4.0	3.2	23,213	172	238	20.1
Q3 2020	3.2	4.8	2.6	4.4	6.6	2.0	0.1	0.8	1.8	4.3	4.0	3.2	24,259	172	239	19.3
Q4 2020	3.3	4.9	2.8	4.5	6.5	2.0	0.1	0.9	1.8	4.2	3.9	3.2	25,405	173	240	18.7
Q1 2021	3.3	4.8	2.9	4.6	6.3	1.9	0.1	0.9	1.9	4.0	3.9	3.2	26,625	174	242	18.3

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

Table 3.B. Supervisory adverse scenario: International variables, Q1:2018–Q1:2021
Percent, unless otherwise indicated.

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q1 2018	-2.6	0.8	1.133	2.1	1.3	97.0	-1.7	-1.3	110.7	-2.8	1.3	1.319
Q2 2018	-3.4	0.3	1.113	2.5	0.5	99.8	-4.0	-1.9	109.6	-3.9	0.6	1.304
Q3 2018	-2.6	-0.1	1.115	3.7	0.1	101.1	-4.9	-2.2	109.6	-3.4	0.3	1.296
Q4 2018	-1.9	-0.4	1.118	4.4	-0.1	102.1	-5.1	-2.4	109.1	-2.8	0.2	1.287
Q1 2019	-0.9	-0.6	1.146	5.4	0.1	101.4	-4.0	-1.9	108.6	-1.6	0.4	1.295
Q2 2019	-0.1	-0.2	1.155	5.9	0.3	100.8	-2.7	-1.5	108.1	-0.4	0.6	1.301
Q3 2019	0.7	0.1	1.163	6.1	0.6	100.2	-1.6	-1.1	107.7	0.5	0.8	1.307
Q4 2019	1.3	0.4	1.171	6.1	0.8	99.6	-0.8	-0.7	107.3	1.1	1.0	1.312
Q1 2020	1.7	0.7	1.174	6.2	0.9	98.9	-0.1	-0.3	107.3	1.7	1.1	1.313
Q2 2020	2.0	0.9	1.178	6.2	1.1	98.2	0.4	0.0	107.4	2.0	1.2	1.313
Q3 2020	2.1	1.1	1.181	6.3	1.3	97.7	0.8	0.3	107.5	2.2	1.3	1.314
Q4 2020	2.1	1.2	1.185	6.3	1.5	97.2	1.0	0.5	107.7	2.3	1.4	1.314
Q1 2021	2.0	1.3	1.188	6.3	1.7	96.9	1.2	0.7	107.8	2.3	1.5	1.315

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

Table 4.A. Supervisory severely adverse scenario: Domestic variables, Q1:2018–Q1:2021
Percent, unless otherwise indicated.

Date	Real GDP growth	Nominal GDP growth	Real dispo-sable income growth	Nominal dispo-sable income growth	Unem-ployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Com-mercial Real Estate Price Index	Market Volatility Index
Q1 2018	-4.7	-2.3	1.4	3.0	5.0	1.4	0.1	1.9	2.4	7.1	5.3	3.3	13,466	186	262	50.7
Q2 2018	-8.9	-7.1	-4.2	-3.1	6.5	0.9	0.1	1.9	2.4	7.7	5.7	3.3	11,631	171	234	62.4
Q3 2018	-6.8	-5.1	-5.1	-3.8	7.6	1.2	0.1	1.9	2.4	7.9	5.8	3.3	10,575	159	212	59.5
Q4 2018	-4.7	-3.0	-3.9	-2.5	8.5	1.3	0.1	1.9	2.4	8.0	5.9	3.3	10,306	151	195	52.8
Q1 2019	-3.6	-1.8	-2.9	-1.5	9.3	1.5	0.1	1.9	2.4	8.1	6.0	3.2	9,689	143	181	47.4
Q2 2019	-1.3	0.3	-2.4	-1.0	9.7	1.5	0.1	1.9	2.4	7.9	6.0	3.2	10,100	139	173	37.9
Q3 2019	-0.2	1.4	-1.4	-0.1	10.0	1.5	0.1	1.9	2.4	7.5	5.8	3.2	10,949	136	167	29.7
Q4 2019	2.8	4.3	-0.1	1.5	9.9	1.8	0.1	1.9	2.4	7.1	5.7	3.2	12,031	136	167	23.5
Q1 2020	3.5	4.8	1.9	3.4	9.7	1.8	0.1	1.9	2.4	6.7	5.5	3.2	13,234	136	167	19.8
Q2 2020	4.0	5.2	2.3	3.7	9.5	1.7	0.1	1.9	2.4	6.3	5.3	3.2	14,713	137	170	17.5
Q3 2020	4.2	5.3	2.7	4.1	9.2	1.6	0.1	1.9	2.4	5.9	5.1	3.2	16,323	139	172	16.0
Q4 2020	4.5	5.5	3.1	4.3	8.9	1.6	0.1	1.9	2.4	5.5	4.9	3.2	18,143	141	176	15.0
Q1 2021	4.5	5.4	3.3	4.5	8.6	1.5	0.1	1.9	2.4	5.0	4.7	3.2	20,168	143	180	14.4

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

Table 4.B. Supervisory severely adverse scenario: International variables, Q1:2018–Q1:2021
Percent, unless otherwise indicated.

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index)	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q1 2018	-4.0	0.1	1.123	-1.5	0.3	99.5	-3.8	-2.6	108.6	-3.5	0.6	1.316
Q2 2018	-5.2	-0.7	1.097	-0.8	-1.0	103.5	-7.4	-3.7	106.4	-5.1	-0.2	1.296
Q3 2018	-4.3	-1.1	1.084	1.5	-1.7	105.9	-9.9	-5.0	103.4	-4.8	-0.7	1.284
Q4 2018	-3.3	-1.2	1.071	2.9	-2.2	107.5	-11.4	-5.8	100.9	-4.1	-0.9	1.271
Q1 2019	-1.6	-0.8	1.081	4.9	-2.1	106.3	-9.8	-5.2	100.5	-2.8	-0.6	1.278
Q2 2019	-0.1	-0.5	1.091	5.9	-1.8	105.0	-7.3	-4.5	100.0	-1.4	-0.3	1.284
Q3 2019	1.0	-0.1	1.101	6.2	-1.4	103.7	-5.0	-3.7	99.6	-0.2	0.1	1.290
Q4 2019	1.7	0.3	1.111	6.2	-1.0	102.5	-3.2	-3.0	99.3	0.8	0.4	1.295
Q1 2020	2.1	0.6	1.116	6.3	-0.6	101.1	-1.7	-2.3	99.3	1.5	0.7	1.295
Q2 2020	2.4	0.8	1.121	6.4	-0.3	100.0	-0.5	-1.7	99.4	2.1	1.0	1.294
Q3 2020	2.4	1.0	1.127	6.5	0.0	98.9	0.3	-1.2	99.6	2.4	1.2	1.294
Q4 2020	2.4	1.1	1.132	6.5	0.4	98.1	0.9	-0.7	99.9	2.6	1.3	1.293
Q1 2021	2.3	1.2	1.136	6.6	0.8	97.4	1.3	-0.3	100.1	2.6	1.4	1.293

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

Notes Regarding Scenario Variables

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

*U.S. real GDP growth: Percent change in real gross domestic product, chained (2009) dollars, expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 1.1.6, line 1).

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

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

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

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

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

U.S. 3-month Treasury rate: Quarterly average of 3-month Treasury bill secondary market rate on a discount basis, H.15 Release, Selected Interest Rates, Federal Reserve Board (series RIFSGFSM03_N.B).

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

U.S. 10-year Treasury yield: Quarterly average of the yield on 10-year U.S. Treasury bonds, constructed for the FRB/U.S. model by Federal Reserve staff based on the Svensson smoothed term structure model; see id.

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

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

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

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

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

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

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

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

Euro area inflation: Percent change in the quarterly average of the harmonized index of consumer prices at an annualized rate, staff calculations based on Statistical Office of the European Communities via Haver.

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

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

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

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

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

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

Exchange rates: End-of-quarter exchange rates, H.10 Release (Foreign Exchange Rates), Federal Reserve Board.