



# 2021 Stress Test Scenarios

February 2021





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# Introduction

The Federal Reserve Board’s (Board) stress tests help ensure that large banks are able to lend to households and businesses even in a severe recession. The stress tests evaluate the resilience of large banks by estimating their losses, revenues, expenses and resulting capital levels—which provide a cushion against losses—under hypothetical recession scenarios into the future.<sup>1</sup>

Last year, the Board ran two separate stress tests to assess the strength of large banks. The Board found that large banks were generally well capitalized under a range of hypothetical events. But due to continuing uncertainty from the COVID event, the Board

placed restrictions on bank payouts to preserve the strength of the banking sector.

The hypothetical scenarios that banks are tested against are described in detail in this publication.<sup>2</sup> See the box “Recent Updates to Capital Planning Requirements” on the Board’s recent regulatory actions on stress test requirements.

<sup>1</sup> U.S. bank holding companies (BHCs) and intermediate holding companies of foreign banking organizations (IHCs) with \$100 billion or more in assets are subject to the Board’s supervisory stress test rule (12 CFR 252, subpart E) and the capital plan rule (12 CFR 225.8). In addition, certain U.S. BHCs and IHCs, savings and loan holding companies, and state member banks must comply with the Board’s company-run stress test rules (12 CFR 238, subpart P; and 12 CFR 252, subparts B and F).

<sup>2</sup> The following 19 firms are required to participate in Dodd-Frank Act Stress Test (DFAST) 2021: 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; Truist Financial Corporation; UBS Americas Holding LLC; U.S. Bancorp; Wells Fargo & Company. In addition to DB USA Corporation, DWS USA Corporation, a second U.S. intermediate holding company subsidiary of Deutsche Bank AG, is subject to DFAST 2021.

## Box 1. Recent Updates to Capital Planning Requirements

In 2019, the Board finalized a framework that sorts large banking organizations into one of four categories of prudential standards based on their risk profiles (the “tailoring rule”).<sup>1</sup> The most stringent prudential standards apply under Category I, and the least stringent prudential standards apply under Category IV.

In January 2021, the Board finalized a rule to update capital planning requirements for large banks to be consistent with the tailoring rule.<sup>2</sup> The Board’s capital planning requirements for large banks help ensure they plan for and determine their capital needs under a range of different scenarios.

The rule removes the company-run stress test requirement for banking organizations subject to Category IV standards. Therefore, banking organizations subject to Category IV standards are not required to calculate forward-looking projections of capital under scenarios provided by the Board.

The rule also aligns the frequency of the calculation of the stress capital buffer requirement with the frequency of the supervisory stress test (that is, both would occur every other year for banking organizations subject to Category IV standards). The rule allows a banking organization subject to Category IV standards to elect to participate in the supervisory stress test in a year in which the banking organization would not otherwise be subject to the supervisory stress test, and to receive an updated stress capital buffer requirement in that year. This year banking organizations subject to Category IV standards are not subject to a supervisory stress test, but they may elect, by April 5, 2021, to participate in the Federal Reserve’s 2021 supervisory stress test.

Finally, the rule changes certain assumptions about material business plan changes in company-run stress tests and applies capital planning and stress capital buffer requirements to certain savings and loan holding companies.

<sup>1</sup> See 84 FR 59032 (Nov. 1, 2019).

<sup>2</sup> See 86 FR 7927 (Feb. 3, 2021).





# Supervisory Scenarios

The severely adverse scenario describes a hypothetical set of conditions designed to assess the strength and resilience of banking organizations to an adverse economic environment. The baseline scenario follows a profile similar to average projections from a survey of economic forecasters. These scenarios are not Federal Reserve forecasts.<sup>3</sup>

**Scenario timing and variables:** The scenarios start in the first quarter of 2021 and extend through the first quarter of 2024. 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:** quarterly percent changes (at an annual rate) in real and nominal gross domestic product (GDP), real and nominal disposable personal income, the Consumer Price Index for all urban consumers (CPI), and the level of the unemployment rate of the civilian non-institutional population aged 16 years and over;
- **Four aggregate measures of asset prices or financial conditions:** indexes of house prices, commercial real estate prices, equity prices, and stock market volatility; and
- **Six measures of interest rates:** the rate on 3-month Treasury securities; the yield for 5-year Treasury securities; the yield for 10-year Treasury securities; the yield for 10-year BBB corporate securities; the interest rate associated with conforming, conventional, 30-year fixed-rate mortgages; and the prime rate.

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

- **The three variables for each country or country bloc:** quarterly percent changes (at an annual rate) in real GDP and in consumer price indexes or local equivalent, and the level of the U.S. dollar exchange rate.
- **Four countries or country blocs:** 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 and Severely Adverse Scenarios

The following sections describe the baseline and severely adverse scenarios. The variables included in these scenarios are provided in tables at the end of this document.<sup>4</sup> Historical data for the domestic and the international variables are reported in [table 1.A](#) and [table 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 October 2020 and January 2021 consensus projections from *Blue Chip Economic Indicators* and *Blue Chip Financial Forecasts*.<sup>5</sup> This scenario does not represent a forecast of the Federal Reserve.

The baseline scenario for the United States is an economic expansion over the 13-quarter scenario period. Quarterly real GDP growth averages 4 per-

<sup>3</sup> For more information about the Federal Reserve's framework for designing stress test scenarios, see "Policy Statement on the Scenario Design Framework for Stress Testing" (12 CFR 252, appendix A).

<sup>4</sup> The scenarios can also be downloaded (together with the historical time series of the variables) from the Board's website, at <https://www.federalreserve.gov/supervisionreg/dfa-stress-tests.htm>.

<sup>5</sup> The near-term forecast is similar to the January 2021 release, while the long-range forecast is similar to the October 2020 release. See Wolters Kluwer Legal and Regulatory Solutions, *Blue Chip Economic Indicators* and *Blue Chip Financial Forecasts*.

cent (annual rate) in 2021, slows to 2½ percent by the end of 2022, and slows further to about 2¼ percent at the end of the scenario period. The unemployment rate declines gradually from 6¾ percent at the end of 2020 to 4½ percent at the end of the scenario period. Quarterly CPI inflation is relatively steady over the 13-quarter period, ranging from 1¾ to 2¼ percent at an annual rate.

Accompanying the economic expansion, short-term Treasury rates are assumed to gradually rise from 0 percent to ¾ percent by the end of the scenario period. Longer-dated Treasury yields also are assumed to rise modestly over time, consistent with some steepening of the yield curve over most of the scenario period. Yields on 10-year Treasury securities rise from 1 percent in early 2021 to almost 1½ percent in early 2022, and continue rising gradually to reach almost 2 percent by the end of the scenario period. The prime rate moves in line with short-term Treasury rates, while both corporate bond yields and mortgage rates rise in line with long-term Treasury yields. Equity prices rise 3¾ percent in 2021 and about 3½ percent per year thereafter. Equity market volatility, as measured by the VIX, falls gradually from 32¾ in early 2021 to 26½ by the end of the scenario period. Nominal house prices rise 3½ percent in 2021, 3¾ percent in 2022, and 4 percent in 2023. Commercial real estate prices fall 4 percent from the fourth quarter of 2020 through the third quarter of 2021, and then rise 5 percent through the fourth quarter of 2022 and another 4 percent in 2023.

The baseline paths for the international variables (see [table 2.B](#)) are similar to the trajectories reported in the January 2021 *Blue Chip Economic Indicators* and the International Monetary Fund's October 2020 *World Economic Outlook*.<sup>6</sup> The baseline scenario features a relatively steady expansion in international economic activity, albeit at different rates across the four country blocs: Annualized quarterly real GDP growth in developing Asia averages about 5 percent through the scenario period, 3¾ percent in the euro area, 2 percent in Japan, and 4¼ percent in the United Kingdom.

<sup>6</sup> See International Monetary Fund, *World Economic Outlook* (October 2020), <https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020>. The January 2021 update to the *World Economic Outlook* was released after the finalization of the scenarios.

## Severely Adverse Scenario

The severely adverse scenario follows the Board's Policy Statement on the Scenario Design Framework for Stress Testing ("Scenario Design Framework") and is characterized by a severe global recession accompanied by a period of heightened stress in commercial real estate and corporate debt markets.<sup>7</sup> This is a hypothetical scenario designed to assess the strength and resilience of banking organizations and does not represent a forecast of the Federal Reserve.

Consistent with the Scenario Design Framework, under the severely adverse scenario, the U.S. unemployment rate climbs to a peak of 10¾ percent in the third quarter of 2022 (see [table 3.A](#)), a 4 percentage point increase relative to its fourth quarter 2020 level. Real GDP falls 4 percent from the fourth quarter of 2020 to its trough in the third quarter of 2022. The decline in activity is accompanied by lower CPI inflation, which quickly falls to an annual rate of about 1 percent in the second quarter of 2021 and stays at that level for another quarter before gradually rising to 2¼ percent by the end of the scenario period.

In line with the sharp decline in real activity, the 3-month Treasury rate remains near zero throughout the scenario. The 10-year Treasury yield immediately falls to ¼ percent during the first quarter of 2021 and stays there through the first quarter of 2022, after which it gradually rises, reaching 1½ percent by the end of the scenario period. The result is a gradual steepening of the yield curve over much of the scenario period.

Conditions in corporate and real estate lending markets deteriorate markedly. The spread between yields on investment-grade corporate bonds and yields on 10-year Treasury securities widens to almost 5¾ percentage points by the third quarter of 2021, an increase of 4¼ percentage points relative to the fourth quarter of 2020. The spread between mortgage rates and 10-year Treasury yields widens to 3½ percentage points over the same period.

Asset prices drop sharply in this scenario. Equity prices fall 55 percent through the third quarter of 2021, accompanied by a rise in the VIX, which reaches a peak of 70. House prices and commercial real estate prices also experience large overall declines. House prices decline 23½ percent through

<sup>7</sup> See 12 CFR 252, appendix A.

the end of 2022, while commercial real estate prices fall 40 percent through the first quarter of 2023.

The international component of this scenario features severe recessions in the euro area, the United Kingdom, and Japan, and a significant deceleration of activity (though still with positive growth for most of the scenario period) in developing Asia. The U.S. dollar appreciates against the euro, the pound sterling, and the currencies of developing Asia, but depreciates modestly against the yen, reflecting flight-to-safety capital flows.

### **Additional Key Features of the Severely Adverse Scenario**

Stresses in the corporate loan market should be assumed to be more intense for lower-rated nonfinancial firms. Declines in aggregate U.S. house prices should be assumed to be concentrated in regions that have experienced rapid price gains over the past two years. Declines in commercial real estate prices should be assumed to be representative of risks to certain industries and property types that are being significantly affected by adjustments related to the COVID-19 event in the United States. Declines in U.S. house prices and U.S. commercial real estate prices should also be assumed to be representative of risks to house prices and commercial real estate prices in foreign regions and economies that experienced rapid price gains before the COVID-19 event and were significantly affected by the event. Moreover, although the weakness in euro area economic conditions reflects a broad-based contraction in euro area demand, this contraction should be assumed to be more protracted in countries with less ability to use fiscal policy to lean against the slowdown in economic activity. Conditions across Latin American economies should be assumed to be comparable to the sharp slowdown in the United States. The growth slowdown in developing Asia should be assumed to be representative of conditions across many emerging market economies.

### **Comparison of the Current Severely Adverse Scenario and the September 2020 Severely Adverse Scenario**

In light of the heightened uncertainty associated with the COVID-19 event, the Board released the results of the updated stress test in December 2020, based on an updated severely adverse scenario and

an alternative downside scenario released in September 2020.<sup>8</sup> The current severely adverse scenario features a slightly greater increase in the unemployment rate in the United States compared with the September 2020 severely adverse scenario, but a lower peak unemployment rate. This difference reflects the Scenario Design Framework, which calls for a more pronounced economic downturn when current conditions are stronger. Given a lower unemployment rate at the beginning of the current scenario compared with the initial rate in the September 2020 scenario, the framework calls for a correspondingly larger increase in the unemployment rate. The path of interest rates in the current scenario is largely unchanged from the path in the September 2020 severely adverse scenario. The decline in house prices is somewhat smaller than the decline in the September 2020 severely adverse scenario, while the decline in equity prices is larger to account for the increases seen since September. The decline in commercial real estate prices is also larger, which is in line with the scenario's emphasis on heightened risks in this sector.

### **Global Market Shock Component for Supervisory Severely Adverse Scenario**

The global market shock is a set of hypothetical shocks to a large set of risk factors reflecting general market distress and heightened uncertainty. Firms with significant trading activity must consider the global market shock as part of their supervisory severely adverse scenario and recognize associated losses in the first quarter of the projection horizon.<sup>9</sup> In addition, certain large and highly interconnected firms must apply the same global market shock to project losses under the counterparty default scenario component. The global market shock is applied to positions held by the firms on a given as-of date, October 9, 2020. These shocks do not represent a forecast of the Federal Reserve.

<sup>8</sup> The stress test results released in December 2020 are available from the Board's website at <https://www.federalreserve.gov/publications/files/2020-dec-stress-test-results-20201218.pdf>.

<sup>9</sup> The global market shock component applies to a firm that is subject to the supervisory stress test and that has aggregate trading assets and liabilities of \$50 billion or more, or aggregate trading assets and liabilities equal to 10 percent or more of total consolidated assets, and is not a Category IV firm under the Board's capital plan rule. See 12 CFR 252.54(b)(2)(i).

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

The design and specification of the global market shock differs from that of the macroeconomic scenarios for several reasons. First, profits and losses from trading and counterparty credit are measured in mark-to-market terms, while revenues and losses from traditional banking are generally measured using the accrual method. Another key difference is the timing of loss recognition. The global market shock affects the mark-to-market value of trading positions and counterparty credit losses in the first quarter of the projection horizon. This timing is based on an observation that market dislocations can happen rapidly and unpredictably at any time under stressed conditions. Applying the global market shock in the first quarter ensures that potential losses from trading and counterparty exposures are incorporated into trading companies' capital ratios at all points over the projection horizon.

The global market shock is specified by a large set of risk factors that include, but are not limited to:

- Equity prices of key developed economies and developing and emerging market economies along with selected points along term structures of implied volatilities;
- Foreign exchange rates of most major and some minor currencies, along with selected points along term structures of option-implied volatilities;
- Selected-maturity government yields (e.g., for 10-year U.S. Treasuries), swap rates, and other important interest rates for key developed economies and developing and emerging market economies;
- Selected maturities and expiries of implied volatilities that are key inputs to the pricing of interest rate derivatives;
- Selected expiries of futures prices for energy products including crude oil (differentiated by country of origin), natural gas, and power;
- Selected expiries of futures prices for metals and agricultural commodities; and
- Credit spreads or prices for selected credit-sensitive products, including corporate bonds, credit default swaps, and loans; non-agency residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS); sovereign debt; and municipal bonds.

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business week of the as-of date for the global market shock (i.e., October 5–9, 2020).

The Board considers emerging and ongoing areas of financial market vulnerability in the development of the global market shock. This assessment of potential vulnerabilities is informed by financial stability reports, supervisory information, and internal and external assessments of potential sources of distress such as geopolitical, economic, and financial market events.

The global market shock includes a standardized set of risk factor shocks to financial market variables that apply to all firms with significant trading activity. Depending on the type of financial market vulnerability that the global market shock is intended to assess, the market shocks could be based on a single historical episode, multiple historical periods, hypothetical events that are based on salient risks, or a hybrid approach comprising some combination of historical episodes and hypothetical events. A market shock based on hypothetical events may result in changes in risk factors that were not previously observed.

Risk factor shocks are calibrated based on assumed time horizons. The calibration horizons reflect a number of considerations related to the scenario being modeled. One important consideration is the liquidity characteristics of different risk factors. These characteristics will vary depending on the specified market shock narrative. More specifically, the calibration horizons reflect the variation in the speed at which trading companies could reasonably close out, or effectively hedge, risk exposures in the event of market stress. The calibration horizons are generally longer than the typical times needed to liquidate exposures under normal conditions because they are designed to capture the unpredictable liquidity conditions that prevail in times of stress. In addition, shocks to risk factors in more-liquid markets, such as those for government securities, foreign exchange, or public equities, are calibrated to shorter horizons (such as three months), while shocks to risk factors in less-liquid markets, such as those for non-agency securitized products or private

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For example, prior to 2020 a hypothetical scenario based on a global pandemic might have included various unprecedented risk factor shocks. Indeed, such unprecedented shocks were realized during the market events of March and April 2020, such as those to municipal credit spreads and equity volatility.

The liquidity of previously well-functioning financial markets can undergo abrupt changes in times of financial stress. For example, prior to the Global Financial Crisis, AAA-rated private-label RMBS would likely have been considered highly liquid, but their liquidity deteriorated drastically during the crisis period.

equities, have longer calibration horizons (such as 12 months).

### 2021 Severely Adverse Scenario

The 2021 global market shock component for the severely adverse scenario is characterized by a sharp curtailment in global economic activity as financial conditions tighten. In particular, with ratings agencies downgrading large swaths of outstanding debt, corporate bond spreads widen sharply as ratings-sensitive investors sell assets. The effect on investment-grade debt is somewhat mitigated by safe-haven flows, but non-investment-grade debt experiences high default rates and record low recovery rates. Price declines in the leveraged loan market are exacerbated by selling from open-end mutual funds and exchange-traded funds.

With fiscal conditions that are already stretched, U.S. state and local governments face additional stress. Revenue declines, combined with significant spending increases, lead to a widening in municipal bond spreads and increased risk of defaults. Mutual funds holding municipal debt face redemptions and outflows exceeding historical experience.

Commercial real estate prices—particularly for the retail and hospitality sectors—fall sharply in this scenario. Rapid selling of CMBS by nonbank commercial real estate lenders to meet margin calls puts considerable downward pressure on CMBS prices. Private-equity asset values experience sizable declines as leveraged firms face lower earnings and a weak economic outlook.

Short-term Treasury rates decrease only slightly given the current low level of short-term interest rates. Longer-term Treasury yields fall modestly, consistent with lower expected short-term rates and flight-to-safety considerations. Short-term U.S. interbank lending rates rise sharply, reflecting a pullback in overnight lending. At the same time, longer-term swap rates fall in line with the decreases in long-term Treasury yields.

Flight-to-safety considerations result in U.S. public equity price declines that are relatively mild compared to other developed markets, and cause the U.S. dollar to appreciate somewhat against the currencies of most developed economies. The yen appreciates against the U.S. dollar as investors unwind positions. Safe-haven considerations cause precious metal prices to increase, while prices for non-precious met-

als and oil decline, as a result of the broader economic weakness.

### Comparison of the Current Severely Adverse Scenario and the September 2020 Severely Adverse Scenario

In light of the heightened uncertainty associated with the COVID-19 event, the Board released the results of the updated stress test in December 2020, based on an updated severely adverse scenario and an alternative downside scenario released in September 2020. The global market shock for the current severely adverse scenario is generally similar to the global market shock for the September 2020 severely adverse scenario. Corporate credit still experiences a great deal of stress, but to a slightly lesser degree than in the earlier scenario. Stress in the municipal bond market is slightly greater, while U.S. public equity shocks are milder. In addition, the shocks to interest rates and sovereign credit spreads in the euro area periphery are larger, in general.

### Counterparty Default Component for Supervisory Severely Adverse Scenario

Firms with substantial trading or custodial operations will be required to incorporate a counterparty default scenario component into their supervisory severely adverse stress scenario for 2021 and recognize associated losses in the first quarter of the projection horizon.<sup>13</sup> This component involves the unexpected default of the firm's largest counterparty.<sup>14, 15</sup>

<sup>13</sup> The Board may require a covered company to include one or more additional components in its severely adverse scenario in the annual stress test based on the company's financial condition, size, complexity, risk profile, scope of operations, or activities, or based on risks to the U.S. economy. See 12 CFR 252.54(b)(2)(ii).

<sup>14</sup> In selecting its largest counterparty, a firm subject to the counterparty default component will not consider certain sovereign entities (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States) or qualifying central counterparties (QCCPs). See definition of a QCCP at 12 CFR 217.2.

<sup>15</sup> U.S. IHCs are not required to include any affiliate as a counterparty. As in the U.S. final rule pursuant to the Dodd-Frank Act for Single Counterparty Credit Limits, an affiliate of the company includes a parent company of the counterparty, as well as any other firm that is consolidated with the counterparty under applicable accounting standards, including U.S. generally accepted accounting principles or International Financial Reporting Standards.

In connection with the counterparty default scenario component, these firms will be required to estimate and report the potential losses and related effects on capital associated with the 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 Federal Reserve's severely adverse scenario.

The largest counterparty of each firm will be determined by net stressed losses. Net stressed losses are estimated by applying the global market shock to

revalue securities financing transactions and derivatives, including collateral posted or received. The as-of date for the counterparty default scenario component is October 9, 2020—the same as-of date for the global market shock.<sup>16</sup>

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<sup>16</sup> As with the global market shock, a firm subject to the counterparty default component may use data as of the date that corresponds to its weekly internal risk reporting cycle as long as it falls during the business week of the as-of date for the counterparty default scenario component (i.e., October 5–9, 2020). Losses will be assumed to occur in the first quarter of the projection horizon.

# Variables for the Supervisory Scenarios

**Table 1.A. Historical data: Domestic variables, Q1:2000–Q4:2020**

Percent, unless otherwise indicated.

Date	Real GDP growth	Nominal GDP growth	Real disposable income growth	Nominal disposable income growth	Unemployment rate	CPI inflation rate	3-month Treasury rate	5-year Treasury yield	10-year Treasury yield	BBB corporate yield	Mortgage rate	Prime rate	Level			
													Dow Jones Total Stock Market Index	House Price Index	Commercial Real Estate Price Index	Market Volatility Index
Q1 2000	1.5	4.2	7.9	11.5	4.0	4.0	5.5	6.6	6.7	8.3	8.3	8.7	14,296	102	127	27.0
Q2 2000	7.5	10.2	4.5	6.4	3.9	3.2	5.7	6.5	6.4	8.6	8.3	9.2	13,619	105	126	33.5
Q3 2000	0.5	2.8	4.7	7.3	4.0	3.7	6.0	6.1	6.1	8.2	8.0	9.5	13,613	107	139	21.9
Q4 2000	2.5	4.7	1.4	3.7	3.9	2.9	6.0	5.6	5.8	8.0	7.6	9.5	12,176	110	144	31.7
Q1 2001	-1.1	1.3	3.7	6.5	4.2	3.9	4.8	4.9	5.3	7.5	7.0	8.6	10,646	112	143	32.8
Q2 2001	2.4	4.9	-0.7	1.2	4.4	2.8	3.7	4.9	5.5	7.5	7.1	7.3	11,407	114	142	34.7
Q3 2001	-1.6	-0.1	9.6	9.8	4.8	1.1	3.2	4.6	5.3	7.2	7.0	6.6	9,563	116	144	43.7
Q4 2001	1.1	2.4	-5.0	-4.7	5.5	-0.3	1.9	4.2	5.1	7.1	6.8	5.2	10,708	118	139	35.3
Q1 2002	3.5	4.9	9.3	10.1	5.7	1.3	1.7	4.5	5.4	7.4	7.0	4.8	10,776	120	139	26.1
Q2 2002	2.4	3.9	2.7	5.9	5.8	3.2	1.7	4.5	5.4	7.5	6.8	4.8	9,384	124	140	28.4
Q3 2002	1.8	3.7	-0.3	1.6	5.7	2.2	1.6	3.4	4.5	7.2	6.3	4.8	7,774	127	141	45.1
Q4 2002	0.6	2.9	2.4	4.3	5.9	2.4	1.3	3.1	4.3	6.9	6.1	4.5	8,343	129	145	42.6
Q1 2003	2.2	4.1	0.9	3.8	5.9	4.2	1.2	2.9	4.2	6.2	5.8	4.3	8,052	132	153	34.7
Q2 2003	3.5	4.7	5.0	5.1	6.1	-0.7	1.0	2.6	3.8	5.3	5.5	4.2	9,342	135	151	29.1
Q3 2003	7.0	9.3	6.9	9.6	6.1	3.0	0.9	3.1	4.4	5.6	6.0	4.0	9,650	139	150	22.7
Q4 2003	4.7	7.2	1.1	2.9	5.8	1.5	0.9	3.2	4.4	5.4	5.9	4.0	10,800	143	148	21.1
Q1 2004	2.2	5.2	1.9	5.3	5.7	3.4	0.9	3.0	4.1	5.0	5.6	4.0	11,039	148	154	21.6
Q2 2004	3.1	6.5	4.7	7.6	5.6	3.2	1.1	3.7	4.7	5.7	6.1	4.0	11,145	154	164	20.0
Q3 2004	3.8	6.6	2.6	4.7	5.4	2.6	1.5	3.5	4.4	5.4	5.9	4.4	10,894	159	175	19.3
Q4 2004	4.1	7.3	5.1	8.8	5.4	4.4	2.0	3.5	4.3	5.1	5.7	4.9	11,952	165	179	16.6
Q1 2005	4.5	7.9	-4.6	-2.4	5.3	2.0	2.5	3.9	4.4	5.2	5.8	5.4	11,637	172	180	14.7
Q2 2005	1.9	4.7	3.9	6.4	5.1	2.7	2.9	3.9	4.2	5.4	5.7	5.9	11,857	179	185	17.7
Q3 2005	3.6	7.4	1.2	5.6	5.0	6.2	3.4	4.0	4.3	5.4	5.8	6.4	12,283	185	191	14.2
Q4 2005	2.5	5.9	5.2	8.6	5.0	3.8	3.8	4.4	4.6	5.8	6.2	7.0	12,497	190	199	16.5
Q1 2006	5.4	8.4	8.0	10.2	4.7	2.1	4.4	4.6	4.7	5.8	6.2	7.4	13,122	193	204	14.6
Q2 2006	0.9	4.4	1.0	4.3	4.6	3.7	4.7	5.0	5.2	6.3	6.6	7.9	12,809	193	213	23.8
Q3 2006	0.6	3.5	1.0	4.0	4.6	3.8	4.9	4.8	5.0	6.3	6.6	8.3	13,323	191	221	18.6
Q4 2006	3.5	5.0	5.4	4.7	4.4	-1.6	4.9	4.6	4.7	6.0	6.2	8.3	14,216	191	223	12.7
Q1 2007	0.9	5.0	3.4	7.4	4.5	4.0	5.0	4.6	4.8	6.0	6.2	8.3	14,354	189	231	19.6
Q2 2007	2.3	5.0	1.0	4.3	4.5	4.6	4.7	4.7	4.9	6.2	6.4	8.3	15,163	183	240	18.9
Q3 2007	2.2	4.3	0.4	2.6	4.7	2.6	4.3	4.5	4.8	6.5	6.6	8.2	15,318	178	248	30.8
Q4 2007	2.5	4.1	0.3	4.3	4.8	5.0	3.4	3.8	4.4	6.3	6.2	7.5	14,754	172	247	31.1
Q1 2008	-2.3	-0.8	1.1	4.6	5.0	4.4	2.1	2.8	3.9	6.4	5.9	6.2	13,284	165	235	32.2
Q2 2008	2.1	4.3	7.5	12.0	5.3	5.3	1.6	3.2	4.1	6.7	6.1	5.1	13,016	158	224	24.1
Q3 2008	-2.1	0.8	-8.1	-4.3	6.0	6.3	1.5	3.1	4.1	7.1	6.3	5.0	11,826	150	230	46.7
Q4 2008	-8.4	-7.2	3.5	-2.5	6.9	-8.9	0.3	2.2	3.7	9.7	5.8	4.1	9,057	143	220	80.9
Q1 2009	-4.4	-4.5	-1.7	-4.0	8.3	-2.7	0.2	1.9	3.2	9.1	5.1	3.3	8,044	139	212	56.7
Q2 2009	-0.6	-1.2	4.4	6.3	9.3	2.1	0.2	2.3	3.7	8.1	5.0	3.3	9,343	139	181	42.3

(continued)

# Federal Reserve Supervisory Scenarios

**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	1.5	1.9	-4.4	-1.8	9.6	3.5	0.2	2.5	3.8	6.5	5.2	3.3	10,813	139	162	31.3
Q4 2009	4.5	5.9	-0.1	3.0	9.9	3.2	0.1	2.3	3.7	5.8	4.9	3.3	11,385	140	158	30.7
Q1 2010	1.5	2.6	2.3	3.7	9.8	0.6	0.1	2.4	3.9	5.6	5.0	3.3	12,033	140	154	27.3
Q2 2010	3.7	5.7	6.8	7.2	9.6	-0.1	0.1	2.3	3.6	5.4	4.9	3.3	10,646	139	167	45.8
Q3 2010	3.0	4.2	2.9	3.6	9.5	1.2	0.2	1.6	2.9	4.8	4.4	3.3	11,814	136	168	32.9
Q4 2010	2.0	4.3	2.3	4.8	9.5	3.3	0.1	1.5	3.0	4.7	4.4	3.3	13,132	135	168	23.5
Q1 2011	-1.0	1.2	4.1	7.8	9.0	4.3	0.1	2.1	3.5	5.0	4.8	3.3	13,909	134	172	29.4
Q2 2011	2.9	5.6	-0.9	3.1	9.1	4.6	0.0	1.8	3.3	4.8	4.7	3.3	13,844	133	173	22.7
Q3 2011	-0.1	2.5	1.8	3.7	9.0	2.6	0.0	1.1	2.5	4.5	4.3	3.3	11,677	134	169	48.0
Q4 2011	4.7	5.4	1.2	2.6	8.6	1.8	0.0	1.0	2.1	4.8	4.0	3.3	13,019	134	177	45.5
Q1 2012	3.2	5.8	7.7	10.7	8.3	2.3	0.1	0.9	2.1	4.4	3.9	3.3	14,628	135	181	23.0
Q2 2012	1.7	3.3	3.7	4.7	8.2	0.8	0.1	0.8	1.8	4.3	3.8	3.3	14,100	138	178	26.7
Q3 2012	0.5	2.6	-2.8	-1.7	8.0	1.8	0.1	0.7	1.6	3.9	3.6	3.3	14,895	141	183	20.5
Q4 2012	0.5	2.5	11.5	14.1	7.8	2.7	0.1	0.7	1.7	3.6	3.4	3.3	14,835	144	184	22.7
Q1 2013	3.6	5.3	-15.1	-13.9	7.7	1.6	0.1	0.8	1.9	3.7	3.5	3.3	16,396	148	188	19.0
Q2 2013	0.5	1.7	3.0	3.3	7.5	-0.4	0.1	0.9	2.0	3.8	3.7	3.3	16,771	152	197	20.5
Q3 2013	3.2	5.2	1.7	3.4	7.2	2.2	0.0	1.5	2.7	4.7	4.4	3.3	17,718	155	208	17.0
Q4 2013	3.2	5.7	1.6	3.3	6.9	1.5	0.1	1.4	2.8	4.5	4.3	3.3	19,413	159	212	20.3
Q1 2014	-1.1	0.5	5.7	7.7	6.7	2.5	0.0	1.6	2.8	4.4	4.4	3.3	19,711	161	209	21.4
Q2 2014	5.5	7.9	5.6	7.6	6.2	2.1	0.0	1.7	2.7	4.0	4.2	3.3	20,569	162	215	17.0
Q3 2014	5.0	6.8	4.8	5.9	6.1	1.0	0.0	1.7	2.5	3.9	4.1	3.3	20,459	164	218	17.0
Q4 2014	2.3	2.9	5.4	4.9	5.7	-1.0	0.0	1.6	2.3	4.0	4.0	3.3	21,425	166	226	26.3
Q1 2015	3.9	3.5	6.1	4.3	5.5	-2.6	0.0	1.5	2.0	3.9	3.7	3.3	21,708	168	239	22.4
Q2 2015	2.7	5.0	1.1	3.2	5.4	2.8	0.0	1.5	2.2	3.9	3.8	3.3	21,631	170	243	18.9
Q3 2015	1.5	2.7	2.8	3.9	5.1	1.5	0.0	1.6	2.3	4.3	4.0	3.3	19,959	173	245	40.7
Q4 2015	0.6	0.7	2.3	2.0	5.0	0.0	0.1	1.6	2.2	4.4	3.9	3.3	21,101	175	246	24.4
Q1 2016	2.3	2.0	3.1	3.4	4.9	-0.1	0.3	1.4	2.0	4.5	3.7	3.5	21,179	177	238	28.1
Q2 2016	1.3	4.1	-0.3	2.1	4.9	2.9	0.3	1.3	1.8	3.9	3.6	3.5	21,622	179	242	25.8
Q3 2016	2.2	3.6	1.9	3.6	4.9	1.9	0.3	1.2	1.6	3.5	3.4	3.5	22,469	182	253	18.1
Q4 2016	2.5	4.6	2.5	4.4	4.8	2.6	0.4	1.7	2.2	3.9	3.8	3.5	23,277	185	257	22.5
Q1 2017	2.3	4.4	4.3	6.6	4.6	2.8	0.6	2.0	2.5	4.0	4.2	3.8	24,508	187	255	13.1
Q2 2017	1.7	3.0	4.4	5.3	4.4	0.4	0.9	1.8	2.3	3.8	4.0	4.0	25,125	190	263	16.0
Q3 2017	2.9	5.0	2.7	4.4	4.3	2.2	1.0	1.8	2.3	3.7	3.9	4.3	26,149	193	267	16.0
Q4 2017	3.9	6.7	2.3	5.0	4.1	3.1	1.2	2.1	2.4	3.7	3.9	4.3	27,673	196	276	13.1
Q1 2018	3.8	6.2	5.2	8.0	4.0	3.2	1.6	2.5	2.8	4.1	4.3	4.5	27,383	199	272	37.3
Q2 2018	2.7	6.3	3.6	5.9	3.9	2.2	1.8	2.8	2.9	4.5	4.5	4.8	28,314	201	286	23.6
Q3 2018	2.1	3.8	3.3	4.9	3.8	2.1	2.0	2.8	2.9	4.5	4.6	5.0	30,190	203	278	16.1
Q4 2018	1.3	3.3	2.8	4.2	3.8	1.3	2.3	2.9	3.0	4.8	4.8	5.3	25,725	205	279	36.1
Q1 2019	2.9	4.0	3.3	3.9	3.9	0.9	2.4	2.5	2.7	4.5	4.4	5.5	29,194	207	287	25.5
Q2 2019	1.5	4.1	-1.0	1.5	3.7	3.0	2.3	2.1	2.4	4.0	4.0	5.5	30,244	209	301	20.6
Q3 2019	2.6	4.0	2.1	3.5	3.6	1.8	2.0	1.7	1.8	3.4	3.7	5.3	30,442	210	309	24.6
Q4 2019	2.4	3.9	1.9	3.4	3.6	2.4	1.6	1.6	1.8	3.3	3.7	4.8	33,035	213	301	20.6
Q1 2020	-5.0	-3.4	2.6	3.9	3.8	1.2	1.1	1.2	1.4	3.4	3.5	4.4	25,985	215	302	82.7
Q2 2020	-31.4	-32.8	48.5	46.2	13.1	-3.5	0.1	0.4	0.7	3.4	3.2	3.3	31,577	218	304	57.1
Q3 2020	33.4	38.3	-16.3	-13.2	8.8	5.2	0.1	0.3	0.6	2.4	3.0	3.3	34,306	223	300	33.6
Q4 2020	3.7	5.5	-8.1	-7.5	6.8	2.2	0.1	0.4	0.9	2.3	2.8	3.3	39,220	225	297	40.3

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 1.B. Historical data: International variables, Q1:2000–Q4:2020

Percent, unless otherwise indicated.

Date	Euro area real GDP growth	Euro area inflation	Euro area bilateral dollar exchange rate (USD/euro)	Developing Asia real GDP growth	Developing Asia inflation	Developing Asia bilateral dollar exchange rate (F/USD, index) <sup>1</sup>	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	4.9	2.6	0.957	7.3	1.5	100.0	7.0	-0.5	102.7	3.3	0.5	1.592
Q2 2000	3.6	0.9	0.955	6.9	-0.3	100.7	1.9	-1.1	106.1	2.4	0.4	1.513
Q3 2000	2.2	3.4	0.884	7.8	2.2	101.4	0.1	-0.3	107.9	1.2	1.0	1.479
Q4 2000	2.8	2.8	0.939	3.6	2.5	105.2	3.9	-1.1	114.4	0.9	1.9	1.496
Q1 2001	4.1	1.2	0.879	4.8	1.7	106.1	3.0	0.7	125.5	4.7	0.1	1.419
Q2 2001	0.3	4.0	0.847	5.3	2.1	106.2	-3.0	-2.3	124.7	3.1	3.1	1.408
Q3 2001	0.5	1.5	0.910	4.9	1.3	106.5	-4.3	-0.5	119.2	3.1	1.0	1.469
Q4 2001	0.5	1.7	0.890	8.4	0.0	106.9	-1.4	-1.9	131.0	1.6	0.0	1.454
Q1 2002	0.2	3.1	0.872	7.8	0.5	107.4	0.7	-1.1	132.7	1.6	1.9	1.425
Q2 2002	2.2	2.0	0.986	8.1	1.1	104.8	3.3	0.1	119.9	2.0	0.9	1.525
Q3 2002	1.7	1.6	0.988	7.3	1.5	105.5	1.3	-0.4	121.7	2.7	1.4	1.570
Q4 2002	0.6	2.3	1.049	6.7	0.8	104.5	1.1	-0.8	118.8	3.2	1.9	1.610
Q1 2003	-1.3	3.3	1.090	6.6	3.6	105.5	0.2	0.0	118.1	3.0	1.6	1.579
Q2 2003	0.4	0.5	1.150	1.9	1.1	104.0	2.8	0.3	119.9	3.7	0.3	1.653
Q3 2003	2.3	2.1	1.165	14.6	0.1	102.6	1.2	-0.5	111.4	4.6	1.7	1.662
Q4 2003	2.9	2.3	1.260	12.8	5.5	103.4	4.4	-1.0	107.1	3.8	1.6	1.784
Q1 2004	2.0	2.2	1.229	5.8	4.0	101.4	3.0	0.8	104.2	1.4	1.3	1.840
Q2 2004	2.5	2.6	1.218	7.1	4.1	102.8	0.0	-0.4	109.4	1.5	1.0	1.813
Q3 2004	1.0	2.0	1.242	8.2	4.1	102.7	2.5	-0.1	110.2	0.7	1.1	1.809
Q4 2004	1.4	2.4	1.354	6.3	0.8	98.9	-0.8	1.9	102.7	1.0	2.4	1.916
Q1 2005	1.0	1.4	1.297	10.6	2.9	98.5	2.1	-1.2	107.2	3.2	2.5	1.889
Q2 2005	2.3	2.2	1.210	8.7	1.5	98.9	3.2	-1.0	110.9	4.8	1.9	1.793
Q3 2005	3.1	3.1	1.206	9.4	2.4	98.5	4.2	-1.0	113.3	4.3	2.7	1.770
Q4 2005	2.5	2.5	1.184	11.6	1.6	98.1	0.7	0.1	117.9	5.6	1.4	1.719
Q1 2006	3.7	1.7	1.214	10.9	2.4	96.7	0.6	1.2	117.5	1.9	1.9	1.739
Q2 2006	4.4	2.5	1.278	7.2	3.2	96.6	0.7	0.4	114.5	1.1	3.0	1.849
Q3 2006	2.3	2.0	1.269	10.1	2.2	96.2	-0.8	0.4	118.0	0.4	3.3	1.872
Q4 2006	4.8	0.9	1.320	11.4	3.6	94.5	5.4	-0.5	119.0	1.9	2.6	1.959
Q1 2007	2.6	2.3	1.337	13.9	3.6	93.9	2.6	-0.7	117.6	3.8	2.6	1.969
Q2 2007	2.8	2.3	1.352	10.6	4.9	91.8	0.2	0.4	123.4	2.3	1.7	2.006
Q3 2007	1.7	2.1	1.422	8.6	7.6	90.5	-2.1	0.3	115.0	3.1	0.2	2.039
Q4 2007	2.3	4.9	1.460	13.1	5.9	89.4	1.6	2.2	111.7	2.1	4.0	1.984
Q1 2008	1.7	4.2	1.581	7.1	8.1	88.0	1.4	1.2	99.9	2.2	3.7	1.986
Q2 2008	-1.2	3.2	1.575	6.0	6.3	88.7	-2.2	1.8	106.2	-2.2	5.7	1.991
Q3 2008	-2.1	3.2	1.408	2.9	3.0	91.6	-4.8	3.4	105.9	-6.1	5.8	1.780
Q4 2008	-6.9	-1.4	1.392	0.6	-1.1	92.3	-9.6	-2.1	90.8	-8.0	0.5	1.462
Q1 2009	-12.0	-1.0	1.326	4.2	-1.4	94.3	-17.9	-3.6	99.2	-6.6	-0.1	1.430
Q2 2009	-0.1	0.0	1.402	15.0	2.3	92.3	8.2	-1.6	96.4	-0.8	2.2	1.645
Q3 2009	1.6	1.1	1.463	12.6	4.1	91.3	-0.1	-1.4	89.5	0.5	3.5	1.600
Q4 2009	1.8	1.6	1.433	9.7	5.0	90.7	4.9	-1.5	93.1	1.4	3.0	1.617
Q1 2010	1.7	1.8	1.353	9.6	4.4	89.8	4.3	1.0	93.4	2.6	4.0	1.519
Q2 2010	3.9	1.9	1.229	9.5	3.4	91.1	5.0	-1.4	88.5	4.2	3.2	1.495
Q3 2010	1.8	1.6	1.360	8.7	4.2	88.4	7.5	-1.9	83.5	3.0	2.3	1.573
Q4 2010	2.5	2.6	1.327	9.6	7.5	87.4	-3.3	1.3	81.7	0.1	4.0	1.539
Q1 2011	3.4	3.7	1.418	9.7	6.2	86.5	-4.2	-0.1	82.8	1.5	6.7	1.605
Q2 2011	0.0	3.1	1.452	6.8	5.4	85.3	-3.3	-0.7	80.6	0.3	4.7	1.607
Q3 2011	0.5	1.3	1.345	5.6	5.3	87.4	10.1	0.3	77.0	1.4	3.7	1.562
Q4 2011	-1.5	3.5	1.297	6.5	3.0	87.3	-0.6	-0.6	77.0	0.5	3.4	1.554
Q1 2012	-0.9	2.9	1.333	7.7	3.2	86.3	5.7	2.2	82.4	2.8	2.1	1.599
Q2 2012	-1.1	2.2	1.267	5.8	3.9	88.1	-3.6	-1.4	79.8	-0.6	2.0	1.569

(continued)

Federal Reserve Supervisory Scenarios

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) <sup>1</sup>	Japan real GDP growth	Japan inflation	Japan bilateral dollar exchange rate (yen/USD)	U.K. real GDP growth	U.K. inflation	U.K. bilateral dollar exchange rate (USD/pound)
Q3 2012	-0.5	1.5	1.286	6.6	2.2	86.3	-1.5	-1.9	77.9	5.0	2.2	1.613
Q4 2012	-1.6	2.5	1.319	7.2	3.5	86.0	-0.3	0.1	86.6	-0.9	4.0	1.626
Q1 2013	-1.5	1.3	1.282	6.8	4.6	86.3	5.6	0.6	94.2	2.1	2.9	1.519
Q2 2013	2.2	0.2	1.301	6.3	2.8	87.2	3.6	0.0	99.2	3.3	1.7	1.521
Q3 2013	1.3	1.1	1.354	7.7	3.5	86.6	3.9	2.7	98.3	3.8	2.1	1.618
Q4 2013	1.0	0.5	1.378	6.8	4.0	85.8	-0.5	2.6	105.3	2.6	1.6	1.657
Q1 2014	1.7	1.0	1.378	6.2	1.4	86.9	3.3	1.0	103.0	3.1	1.9	1.668
Q2 2014	0.9	-0.3	1.369	7.4	2.6	86.7	-7.1	8.3	101.3	2.6	1.4	1.711
Q3 2014	1.8	0.1	1.263	6.5	2.4	87.0	0.4	1.8	109.7	2.3	0.7	1.622
Q4 2014	1.6	-0.1	1.210	5.7	1.1	88.1	2.0	-0.8	119.9	2.4	-0.4	1.558
Q1 2015	2.8	-0.7	1.074	6.4	0.9	88.1	6.3	0.4	120.0	2.2	-1.1	1.485
Q2 2015	1.7	2.5	1.115	6.9	2.8	88.5	0.4	0.8	122.1	3.0	0.7	1.573
Q3 2015	1.8	-0.2	1.116	6.3	2.7	91.1	0.4	0.5	119.8	1.6	0.6	1.512
Q4 2015	1.8	-0.4	1.086	5.6	1.2	92.3	-0.4	-1.1	120.3	2.7	0.1	1.475
Q1 2016	2.2	-1.4	1.139	7.2	3.0	91.8	2.9	-0.4	112.4	0.8	0.0	1.438
Q2 2016	1.0	1.5	1.103	7.0	2.9	94.3	-0.8	-0.1	102.8	1.8	0.7	1.324
Q3 2016	1.8	1.2	1.124	6.4	1.2	93.7	0.8	-0.4	101.2	1.2	2.0	1.302
Q4 2016	3.1	1.7	1.055	5.9	1.7	97.6	1.2	2.0	116.8	2.4	2.1	1.234
Q1 2017	3.0	2.7	1.070	6.4	1.2	95.2	3.0	-0.5	111.4	2.0	3.8	1.254
Q2 2017	2.8	0.5	1.141	6.4	2.3	94.8	1.0	0.7	112.4	1.2	3.1	1.300
Q3 2017	3.1	0.9	1.181	6.3	2.3	93.7	3.2	0.4	112.6	1.7	2.2	1.340
Q4 2017	3.4	1.5	1.202	6.5	2.6	91.1	1.6	1.9	112.7	1.4	3.0	1.353
Q1 2018	0.8	2.2	1.232	7.7	2.4	89.1	-0.1	2.3	106.2	0.3	2.5	1.403
Q2 2018	1.8	2.2	1.168	5.6	2.0	93.5	0.2	-1.8	110.7	1.5	2.0	1.320
Q3 2018	0.4	2.5	1.162	3.5	3.0	97.2	-2.6	2.3	113.5	2.4	2.5	1.305
Q4 2018	2.0	0.8	1.146	6.6	1.1	96.2	1.8	0.4	109.7	0.7	2.1	1.276
Q1 2019	1.9	0.3	1.123	7.6	1.0	94.7	2.3	0.1	110.7	2.2	0.9	1.303
Q2 2019	0.8	2.1	1.137	4.8	5.1	96.4	0.3	0.7	107.8	0.6	2.7	1.270
Q3 2019	0.8	0.6	1.091	1.0	3.5	99.8	0.7	0.3	108.1	2.0	1.6	1.231
Q4 2019	0.5	1.0	1.123	7.3	6.4	98.0	-7.2	0.9	108.7	0.1	0.5	1.327
Q1 2020	-14.1	0.7	1.102	-24.4	3.8	101.9	-2.1	0.3	107.5	-11.5	1.9	1.245
Q2 2020	-39.2	-1.4	1.124	34.8	-1.9	97.3	-29.2	-1.2	107.8	-56.4	-1.4	1.237
Q3 2020	59.9	-0.4	1.172	21.8	2.2	95.5	22.9	0.8	105.6	81.1	1.4	1.292
Q4 2020	-9.9	0.6	1.223	12.2	1.6	92.3	4.5	-3.1	103.2	-15.2	1.0	1.366

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

<sup>1</sup> F/USD denotes foreign currency index, relative to the U.S. dollar, obtained as a weighted average of the exchange rates of the countries in the developing Asia bloc.

**Table 2.A. Supervisory baseline scenario: Domestic variables, Q1:2021–Q1:2024**

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 2021	2.3	4.1	11.8	13.7	6.6	2.1	0.1	0.4	1.0	2.4	2.7	3.2	39,528	227	294	32.8
Q2 2021	4.4	6.4	-5.7	-4.3	6.2	1.8	0.1	0.5	1.1	2.6	2.7	3.2	39,847	229	290	29.2
Q3 2021	4.8	6.8	-0.5	1.3	5.8	2.2	0.1	0.6	1.2	2.7	2.8	3.2	40,177	231	285	27.3
Q4 2021	4.2	6.0	1.5	3.3	5.5	2.1	0.1	0.6	1.3	2.8	2.8	3.2	40,515	233	288	26.5
Q1 2022	3.3	5.3	2.2	4.0	5.3	2.1	0.1	0.7	1.4	2.9	2.9	3.2	40,861	235	291	26.3
Q2 2022	3.0	5.0	2.0	3.8	5.1	2.1	0.2	0.8	1.5	3.0	3.0	3.2	41,214	237	294	26.3
Q3 2022	2.7	4.7	2.2	4.0	4.9	2.2	0.2	0.9	1.5	3.1	3.1	3.2	41,573	240	296	26.2
Q4 2022	2.5	4.5	2.3	4.2	4.8	2.1	0.2	1.0	1.6	3.2	3.1	3.2	41,938	242	299	26.2
Q1 2023	2.3	4.4	2.3	4.2	4.8	2.2	0.5	1.1	1.6	3.3	3.1	3.5	42,308	244	302	26.4
Q2 2023	2.3	4.5	2.2	4.1	4.8	2.2	0.6	1.1	1.7	3.3	3.2	3.6	42,684	247	305	26.4
Q3 2023	2.3	4.5	2.1	4.1	4.8	2.2	0.6	1.2	1.7	3.4	3.2	3.7	43,064	249	308	26.4
Q4 2023	2.3	4.5	2.1	4.0	4.7	2.2	0.7	1.2	1.8	3.4	3.3	3.8	43,449	251	311	26.5
Q1 2024	2.2	4.4	2.0	3.9	4.6	2.2	0.8	1.3	1.9	3.6	3.4	3.8	43,837	254	314	26.5

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.**Table 2.B. Supervisory baseline scenario: International variables, Q1:2021–Q1:2024**

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) <sup>1</sup>	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 2021	13.2	1.7	1.224	0.6	2.6	92.1	4.8	0.8	103.0	21.5	2.0	1.371
Q2 2021	1.3	1.5	1.225	1.6	2.0	91.9	0.7	1.2	102.7	1.7	1.7	1.376
Q3 2021	2.5	1.3	1.226	3.2	2.3	91.7	1.5	0.8	102.5	3.5	1.7	1.382
Q4 2021	3.8	1.1	1.227	4.8	2.6	91.5	2.2	0.4	102.2	5.2	1.7	1.387
Q1 2022	5.0	1.0	1.234	6.4	2.9	91.6	2.9	0.0	102.6	6.9	1.7	1.405
Q2 2022	4.3	1.1	1.241	6.1	2.7	91.6	2.5	0.2	103.0	5.2	1.8	1.423
Q3 2022	3.5	1.2	1.248	5.8	2.5	91.7	2.1	0.4	103.3	3.5	1.9	1.442
Q4 2022	2.8	1.3	1.256	5.5	2.4	91.7	1.7	0.6	103.7	1.9	2.0	1.460
Q1 2023	2.1	1.4	1.256	5.2	2.2	91.7	1.3	0.8	103.7	0.4	2.1	1.460
Q2 2023	2.2	1.4	1.256	5.7	2.3	91.7	1.4	0.7	103.7	0.8	2.1	1.460
Q3 2023	2.3	1.4	1.256	6.2	2.4	91.7	1.5	0.6	103.7	1.3	2.2	1.460
Q4 2023	2.5	1.5	1.256	6.6	2.5	91.7	1.5	0.5	103.7	1.7	2.2	1.460
Q1 2024	2.6	1.5	1.256	7.0	2.6	91.7	1.6	0.4	103.7	2.1	2.3	1.460

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.<sup>1</sup> F/USD denotes foreign currency index, relative to the U.S. dollar, obtained as a weighted average of the exchange rates of the countries in the developing Asia bloc.

**Table 3.A. Supervisory severely adverse scenario: Domestic variables, Q1:2021–Q1:2024**

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 2021	-5.5	-4.8	2.8	3.8	7.8	1.3	0.1	0.3	0.3	4.9	3.5	3.2	23,195	223	288	70.0
Q2 2021	-4.0	-3.4	-9.9	-9.3	8.6	1.0	0.1	0.3	0.3	5.7	3.7	3.2	19,178	213	279	65.8
Q3 2021	-3.3	-2.9	-4.1	-3.4	9.3	1.0	0.1	0.3	0.3	6.0	3.8	3.2	17,650	206	267	62.0
Q4 2021	-1.0	-0.4	-0.6	0.2	9.7	1.2	0.1	0.3	0.3	6.0	3.8	3.2	17,711	198	250	57.6
Q1 2022	-1.0	-0.1	0.3	1.1	10.1	1.2	0.1	0.3	0.3	6.0	3.8	3.2	18,626	190	232	55.7
Q2 2022	-1.0	0.2	0.1	1.1	10.5	1.3	0.1	0.3	0.5	5.7	3.7	3.2	20,672	182	214	48.6
Q3 2022	-0.2	1.0	0.6	1.7	10.8	1.5	0.1	0.3	0.6	5.4	3.7	3.2	22,091	175	196	43.6
Q4 2022	6.7	8.3	5.2	6.5	10.2	1.6	0.1	0.3	0.8	5.1	3.6	3.2	24,004	172	184	39.4
Q1 2023	6.7	8.4	5.5	7.0	9.6	1.7	0.1	0.3	0.9	4.8	3.6	3.2	25,977	172	178	36.3
Q2 2023	6.7	8.5	4.9	6.4	9.1	1.8	0.1	0.4	1.1	4.5	3.5	3.2	28,166	175	178	33.3
Q3 2023	6.7	8.8	4.4	6.1	8.5	2.0	0.1	0.5	1.2	4.2	3.4	3.2	30,649	177	178	30.3
Q4 2023	6.7	8.9	3.9	5.7	8.0	2.1	0.1	0.6	1.3	3.9	3.4	3.2	33,456	180	178	28.3
Q1 2024	6.7	9.0	3.1	5.0	7.4	2.2	0.1	0.6	1.5	3.6	3.3	3.2	36,631	183	181	27.3

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 severely adverse scenario: International variables, Q1:2021–Q1:2024**

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) <sup>1</sup>	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 2021	-3.3	-0.3	1.216	-0.5	0.6	92.8	-6.6	-1.1	102.7	-2.4	0.3	1.359
Q2 2021	-2.7	0.0	1.210	-0.8	1.1	93.3	-4.3	-0.8	102.7	-2.8	0.6	1.352
Q3 2021	-1.8	0.0	1.194	1.4	0.6	94.6	-2.5	-1.3	102.2	-2.0	0.2	1.334
Q4 2021	-1.6	-0.3	1.181	3.3	0.2	95.6	-2.0	-1.0	101.7	-1.8	-0.2	1.320
Q1 2022	-1.4	-0.6	1.178	5.6	0.0	95.8	-1.6	-1.4	101.4	-1.6	-0.4	1.316
Q2 2022	-1.2	-1.0	1.175	5.9	-0.2	96.1	-1.1	-2.0	101.1	-1.4	-0.6	1.313
Q3 2022	1.0	-1.2	1.177	5.8	-0.4	96.0	1.0	-2.2	101.2	1.0	-0.7	1.314
Q4 2022	4.0	-1.1	1.178	5.7	-0.5	95.8	3.0	-2.1	101.4	4.0	-0.5	1.316
Q1 2023	5.0	-0.9	1.184	5.6	-0.5	95.3	4.0	-1.7	101.7	5.0	-0.2	1.323
Q2 2023	6.0	-0.6	1.197	6.3	-0.4	94.3	5.0	-1.2	101.9	6.0	0.2	1.337
Q3 2023	7.0	-0.3	1.204	6.7	0.0	93.8	5.5	-0.7	102.2	7.0	0.7	1.345
Q4 2023	8.0	0.1	1.210	7.3	0.5	93.3	6.0	-0.3	102.4	8.0	1.1	1.352
Q1 2024	9.0	0.5	1.216	8.1	1.1	92.8	7.0	0.1	102.7	9.0	1.5	1.359

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.<sup>1</sup> F/USD denotes foreign currency index, relative to the U.S. dollar, obtained as a weighted average of the exchange rates of the countries in the developing Asia bloc.

## Notes Regarding Scenario Variables

The following are descriptions of data through 2020:Q4 (as released through January 15, 2021). The 2020:Q4 values of variables marked with an asterisk (\*) are estimates.

**\*U.S. real GDP growth:** Quarterly percent change in real gross domestic product (chained 2012 dollars), expressed at an annualized rate, Bureau of Economic Analysis (NIPA table 1.1.6, line 1).

**\*U.S. nominal GDP growth:** Quarterly 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:** Quarterly percent change in real disposable personal income (current-dollar values 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:** Quarterly 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 unemployment rates for the civilian, non-institutional population aged 16 years and older, Bureau of Labor Statistics (series LNS14000000).

**U.S. CPI inflation:** Percent change in the quarterly average of seasonally adjusted monthly levels of the all-items CPI for all urban consumers (CPI-U), 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 notes, constructed for the FRB/US 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 notes, constructed for the FRB/US model by Federal Reserve staff based on the Svensson smoothed term structure model; (see Svensson, “Estimating Forward Interest Rates”).

**U.S. BBB corporate yield:** Quarterly average of ICE BofAML U.S. Corporate 7-10 Year Yield-to-Maturity Index, ICE Data Indices, LLC, used with permission. (C4A4 series.)

**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, Z.1 Release (Financial Accounts of the United States), Federal Reserve Board (series FL075035243.Q divided by 1000).

**\*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:** Quarterly 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 Sta-

tistical Office of the European Communities via Haver.

**\*Developing Asia real GDP growth:** Quarterly 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; Statistics Korea (KOSTAT) 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:** Quarterly 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:** Quarterly 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.



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