



2020 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule

February 2020



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Introduction

The Federal Reserve Board conducts supervisory stress tests to help ensure that large bank holding companies operating in the United States will be able to lend to households and businesses even in a severe recession. The tests are known as the Dodd-Frank Act stress test (DFAST) and the Comprehensive Capital Analysis and Review (CCAR).¹

DFAST is a forward-looking assessment of the capital adequacy of holding companies that uses standard assumptions across all covered firms. CCAR evaluates the capital planning practices and capital

adequacy of holding companies using capital actions, such as dividend payments and share repurchases, planned by those firms.

This publication describes the two supervisory scenarios—baseline and severely adverse—that the Board will use in its supervisory stress tests this year; that a firm must use in conducting its 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 2020 capital plan submission.² This publication also details additional components—the global market shock component and the counterparty default component—that the largest and most complex firms must incorporate into the supervisory scenarios.

¹ U.S. bank holding companies (U.S. BHCs) and U.S. intermediate holding companies of foreign banking organizations (U.S. 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, U.S. 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; 12 CFR 252, subpart B; and 12 CFR 252, subpart F).

² See 12 CFR 225.8; 12 CFR 238.143(b); 12 CFR 252.14(b); and 12 CFR 252.54(b).

Supervisory Scenarios

The severely adverse scenario describes a hypothetical set of conditions designed to assess the strength of banking organizations and their resilience 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.³

The scenarios start in the first quarter of 2020 and extend through the first quarter of 2023. 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 3-month Treasury bills; the yield for 5-year Treasury notes; the yield for 10-year Treasury notes; 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: 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 blocs 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 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. They can also be downloaded (together with the historical time series of the variables) from the Board's website, at <http://www.federalreserve.gov/bankinfo/dfa-stress-tests.htm>. 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 January 2020 consensus projections from *Blue Chip Economic Indicators*.⁴ This scenario does not represent a forecast of the Federal Reserve.

³ For more information about the Federal Reserve's framework for designing stress-test scenarios, see 12 CFR 252, Appendix A.

⁴ See Wolters Kluwer Legal and Regulatory Solutions, *Blue Chip Economic Indicators*.

The baseline scenario for the United States is a moderate economic expansion over the 13-quarter stress-test period. Real GDP growth averages $1\frac{3}{4}$ percent (annual rate) in 2020, picks up to 2 percent by the end of 2021, and remains at that level in 2022. The unemployment rate ticks up to about $3\frac{3}{4}$ percent by the end of 2020, then increases to about 4 percent in early 2022, and remains at that level for the rest of the scenario period. Quarterly CPI inflation is relatively steady over the 13-quarter period, ranging from 2 to $2\frac{1}{4}$ percent at an annual rate.

Accompanying the moderate economic expansion, short-term Treasury rates are assumed to initially decline to slightly below $1\frac{1}{2}$ percent by the end of 2020, remain around that level through the end of 2021, and then rise to $1\frac{3}{4}$ percent by the end of the stress-test period. Longer-dated Treasury yields are assumed to rise modestly over time, consistent with some steepening of the yield curve. Yields on 10-year Treasury securities rise gradually from $1\frac{3}{4}$ percent in early 2020 to $2\frac{3}{4}$ percent at 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 $4\frac{1}{2}$ percent in 2020 and about $4\frac{3}{4}$ percent per year thereafter. Equity market volatility, as captured by the VIX, rises gradually from $22\frac{3}{4}$ in early 2020 to $26\frac{1}{2}$ by the end of the scenario period. Nominal house prices rise $2\frac{1}{4}$ percent in 2020 and 2021, and about $3\frac{1}{4}$ percent in 2022. The growth rate of commercial real estate prices averages about 5 percent in 2020 and 2021, and $2\frac{3}{4}$ percent in 2022.

The baseline paths for the international variables (see [Table 2.B](#)) are similar to the trajectories reported in the January 2020 *Blue Chip Economic Indicators* and the International Monetary Fund's October 2019 *World Economic Outlook*.⁵ The baseline scenario features a relatively steady expansion in international economic activity, albeit at a different pace across the four country blocs: Real GDP growth in developing Asia averages $5\frac{3}{4}$ percent per year through the scenario period, real GDP growth in the euro area averages about $1\frac{1}{4}$ percent, and real GDP growth in Japan averages about $\frac{3}{4}$ percent. Finally, real GDP growth in the United Kingdom averages just over $1\frac{1}{4}$ percent over the scenario period.

⁵ See International Monetary Fund, *World Economic Outlook* (October 2019), <https://www.imf.org/en/Publications/WEO/Issues/2019/10/01/world-economic-outlook-october-2019>.

Severely Adverse Scenario

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

The U.S. unemployment rate climbs to a peak of 10 percent in the third quarter of 2021 (see [Table 3.A](#)). This substantial increase in the unemployment rate is consistent with the Board's Policy Statement on the Scenario Design Framework for Stress Testing.⁶ In line with the increase in the unemployment rate, real GDP falls about $8\frac{1}{2}$ percent from its pre-recession peak, reaching a trough in the third quarter of 2021. The decline in activity is accompanied by a lower headline CPI inflation rate, which falls to an annual rate of about $1\frac{1}{4}$ percent after the first quarter of 2020, before gradually rising to average $1\frac{3}{4}$ percent in 2022.

In line with the severe decline in real activity, the interest rate for 3-month Treasury bills immediately falls near zero and remains at that level through the end of the scenario. The 10-year Treasury yield immediately falls to $\frac{3}{4}$ percent during the first quarter of 2020 and rises gradually thereafter to $2\frac{1}{4}$ percent by the end of the stress-test period. The result is a gradual steepening of the yield curve over most of the stress-test 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 $5\frac{1}{2}$ percentage points by the third quarter of 2020, an increase of 4 percentage points relative to the fourth quarter of 2019. The spread between mortgage rates and 10-year Treasury yields widens to $3\frac{1}{2}$ percentage points over the same period.

Asset prices drop sharply in this scenario. Equity prices fall 50 percent through the end of 2020, 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 of about 28 percent and 35 percent, respectively, during the first nine quarters of the scenario.

⁶ See 12 CFR 252, Appendix A.

The international component of this scenario features sharp slowdowns in all country blocs, leading to severe recessions in the euro area, the United Kingdom, and Japan and a pronounced deceleration of activity in developing Asia. As a result of the sharp contraction in economic activity, three of the foreign economies included in the scenario—the euro area, Japan, and developing Asia—experience sharp declines in inflation rates. 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 2020 Severely Adverse Scenario and the 2019 Severely Adverse Scenario

This year's severely adverse scenario features a slightly greater increase in the unemployment rate in the United States compared to last year's severely adverse scenario. This difference reflects the Board's Policy Statement on the Scenario Design Framework for Stress Testing, which calls for a more pronounced economic downturn when current conditions are stronger. Given a lower unemployment rate at the beginning of this year's scenario compared to last year's, the framework calls for a correspondingly larger increase in the unemployment rate in order to reach a peak of 10 percent. In this year's scenario, interest rates do not fall as much as in last year's scenario, given their lower starting values. The declines in equity prices, house prices, and commercial real estate prices are similar to the declines in last year's severely adverse scenario.

Additional Key Features of the Severely Adverse Scenario

Although the weakness in euro area economic conditions reflects a broad-based contraction in euro area demand, this contraction is assumed to be more protracted in countries with less room for fiscal policy stabilization. The sharp slowdown in developing Asia should be assumed to be representative of conditions across emerging market economies.

Stresses in the corporate loan market should be assumed to be more intense for lower-rated firms. Declines in aggregate U.S. residential and commercial real estate prices is 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 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 planning period.⁷ 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 asset positions held by the firms on a given as-of date. The as-of date for the global market shock is October 18, 2019.⁸ These shocks do not represent a forecast of the Federal Reserve.

The design and specification of the global market shock differ 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 any time under stress conditions. Applying the global market shock in the first quarter of the projection horizon ensures that potential losses from trading and counterparty exposures are incorporated into trading companies' capital ratios at all points in the projection horizon.

⁷ The global market shock component applies to a firm that is subject to the supervisory stress test and that has aggregate trading assets and liabilities of \$50 billion or more, or aggregate trading assets and liabilities equal to 10 percent or more of total consolidated assets, and is not a large and noncomplex firm under the Board's capital plan rule (12 CFR 225.8).

⁸ 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., October 14–18, 2019).

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

- Equity prices of key developed markets and developing and emerging market nations to which trading companies may have exposure, along with selected points along term structures of implied volatilities;
- Foreign exchange rates of most advanced economy and some emerging economy currencies, along with selected points along term structures of implied volatilities;
- Selected maturity government rates (e.g., U.S. Treasuries), swap rates, and other key rates for key developed markets and for developing and emerging market nations to which trading companies may have exposure;
- 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 by risk; non-agency residential mortgage-backed securities and commercial mortgage-backed securities by risk and vintage; sovereign debt; and municipal bonds.

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 vulnerabilities the global market shock assesses, the market shocks could be based on a single historical episode, multiple historical periods, hypothetical (but plausible) 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, which vary based on the specified market shock narrative. More specifically, 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 time needed to liquidate assets under normal conditions because they are designed to capture the unpredictable liquidity conditions that prevail in times of stress, among other factors.⁹ For example, changes within more liquid markets, such as interest rates, foreign exchange, or public equities, are calibrated to shorter horizons, such as three months, while changes within less liquid markets, such as non-agency securitized products or private equities, have longer calibration horizons, such as 12 months.

2020 Severely Adverse Scenario

The 2020 global market shock component for the severely adverse scenario is designed to be generally consistent with a macroeconomic background in which the U.S. economy has entered a sharp recession, characterized by widespread defaults on a range of debt instruments by business borrowers. Under the scenario, weaker obligors struggle to maintain their financial conditions due to material declines in earnings associated with the poor economic environment while rating agencies downgrade large portions of debt outstanding. The historically high levels of nonfinancial corporate debt to GDP amplify the losses resulting from the wave of corporate sector defaults. This dynamic creates feedback effects between the economy and the corporate sector.

Spreads widen sharply for non-investment grade and low investment grade bonds as ratings-sensitive investors anticipate further downgrades and sell

⁹ Markets that are well-functioning and that appear to be very liquid can abruptly change in times of financial stress, and the timing and severity of such changes in market liquidity may diverge from historical experience. For example, prior to the 2007–2009 financial crisis, AAA-rated private-label residential mortgage-backed securities would likely have been considered highly liquid, but their liquidity changed drastically during the crisis period.

assets. Similarly, the leveraged loan market comes under considerable pressure. Open-ended mutual funds and exchange-traded funds (ETFs) that hold leveraged loans and high yield bonds face heavy redemptions. Due to liquidity mismatches, mutual fund and ETF managers sell their most liquid holdings, leading to more extensive declines in the prices of fixed income securities and other related assets. Price declines on leveraged loans flow through to the prices for collateralized loan obligations (CLOs). CLO prices suffer severe corrections associated with the devaluation of the underlying collateral and selling by concentrated holders desiring to reduce risk.

The broad selloff of corporate bonds and leveraged loans spills over to prices for other risky credit and private equity instruments. Credit spreads for emerging market corporate credit and sovereign bonds widen due to flight-to-safety considerations. Asset values for private equity experience sizable declines as leveraged firms face lower earnings and a weak economic outlook. Municipal bond spreads widen in line with lower municipal tax revenues associated with the severe weakening of the U.S. economy.

Short-term U.S. Treasury rates fall sharply reflecting an accommodative monetary policy response to the hypothetical economic downturn. Longer-term U.S. Treasury rates fall more modestly as the United States benefits from a flight-to-safety. Short-term U.S. interbank lending rates rise as firms face increased funding pressure from a pullback in overnight lending, while longer-term swap rates fall in sync with the decreases in long-term U.S. Treasury rates. This is not a forecast of how monetary policy would necessarily respond to these conditions.

Flight-to-safety considerations cause the U.S. dollar to appreciate somewhat against the currencies of most advanced economies, except the Swiss franc and the Japanese yen. The yen appreciates against the U.S. dollar as investors unwind positions and view the yen as a safe-haven currency. The Swiss franc appreciates against the U.S. dollar as investors seek an alternative safe-haven currency. Safe-haven considerations cause traditional precious metals to experience an increase in value while non-precious metals prices fall due to lower demand from the general economic weakness.

Comparison of the 2020 Severely Adverse Scenario and the 2019 Severely Adverse Scenario

This year's global market shock for the severely adverse scenario emphasizes a heightened stress to highly leveraged markets that causes CLOs and private equity investments to experience larger market value declines relative to 2019. There is a general spike in short-term interbank lending rates instead of a decline, as this year's scenario highlights a severe increase in funding pressures. European equity markets weaken at more modest levels relative to 2019, while U.S. equity markets fall more sharply. In addition, European currencies depreciate less severely against the U.S. dollar this year, reflecting the U.S.-focused nature of this year's scenario.

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 the severely adverse scenario used in their company-run stress test.¹⁰ The counterparty default scenario component involves the instantaneous and unexpected default of the firm's largest counterparty.^{11,12}

In connection with the counterparty default scenario component, these firms will be required to estimate and report the potential losses and related effects on

¹⁰ 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).

¹¹ 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 (QCCP). See definition of QCCP at 12 CFR 217.2.

¹² U.S. intermediate holding companies (IHC) are not required to include any affiliate of the U.S. IHC as a counterparty. 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 US GAAP or IFRS.

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 severely adverse stress 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 non-cash securities financing transactions (securities or collateral) posted or received and, for derivatives, the trade position and non-cash collateral exchanged. The as-of date for the counterparty default scenario component is October 18, 2019—the same date as the global market shock.¹³

¹³ 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 14–18, 2019). Losses will be assumed to occur in the first quarter of the planning horizon.

Variables for the Supervisory Scenarios

Table 1.A. Historical data: Domestic variables, Q1:2000–Q4:2019

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	144	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	152	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	149	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	147	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	153	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	163	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	174	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	178	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	179	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	190	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	198	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	212	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	220	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	222	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	230	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	239	18.9
Q3 2007	2.2	4.3	0.4	2.6	4.7	2.6	4.3	4.5	4.8	6.5	6.6	8.2	15,318	178	247	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	157	224	24.1
Q3 2008	-2.1	0.8	-8.1	-4.3	6.0	6.3	1.5	3.1	4.1	7.1	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	219	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	138	208	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	138	180	42.3

(continued)

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	161	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	139	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	139	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	166	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	167	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	167	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	133	171	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	174	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	176	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	180	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	184	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	187	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	207	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	158	211	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	160	210	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	161	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	219	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	227	26.3
Q1 2015	3.2	3.0	4.6	2.8	5.5	-2.6	0.0	1.5	2.0	3.9	3.7	3.3	21,708	168	241	22.4
Q2 2015	3.0	5.3	3.0	5.1	5.4	2.8	0.0	1.5	2.2	3.9	3.8	3.3	21,631	170	245	18.9
Q3 2015	1.3	2.8	3.0	4.1	5.1	1.6	0.0	1.6	2.3	4.3	4.0	3.3	19,959	173	247	40.7
Q4 2015	0.1	0.1	1.3	0.9	5.0	0.0	0.1	1.6	2.2	4.4	3.9	3.3	21,101	175	247	24.4
Q1 2016	2.0	1.6	2.7	2.9	4.9	-0.2	0.3	1.4	2.0	4.5	3.7	3.5	21,179	177	239	28.1
Q2 2016	1.9	4.7	-0.4	2.0	4.9	2.9	0.3	1.3	1.8	3.9	3.6	3.5	21,622	179	245	25.8
Q3 2016	2.2	3.7	1.8	3.5	4.9	1.9	0.3	1.2	1.6	3.5	3.4	3.5	22,469	182	257	18.1
Q4 2016	2.0	4.0	2.4	4.3	4.8	2.6	0.4	1.7	2.2	3.9	3.8	3.5	23,277	185	260	22.5
Q1 2017	2.3	4.2	4.9	7.1	4.6	2.8	0.6	2.0	2.5	4.0	4.2	3.8	24,508	187	257	13.1
Q2 2017	2.2	3.5	2.7	3.6	4.4	0.4	0.9	1.8	2.3	3.8	4.0	4.0	25,125	190	265	16.0
Q3 2017	3.2	5.4	2.3	4.1	4.3	2.2	1.0	1.8	2.3	3.7	3.9	4.3	26,149	193	270	16.0
Q4 2017	3.5	6.4	3.7	6.5	4.1	3.1	1.2	2.1	2.4	3.7	3.9	4.3	27,673	196	279	13.1
Q1 2018	2.6	5.0	6.9	9.6	4.1	3.2	1.6	2.5	2.8	4.1	4.3	4.5	27,383	199	274	37.3
Q2 2018	3.5	7.1	2.7	4.9	3.9	2.1	1.8	2.8	2.9	4.5	4.5	4.8	28,314	202	288	23.6
Q3 2018	2.9	4.8	3.3	4.9	3.8	2.0	2.0	2.8	2.9	4.5	4.6	5.0	30,190	203	279	16.1
Q4 2018	1.1	2.9	2.8	4.2	3.8	1.5	2.3	2.9	3.0	4.8	4.8	5.3	25,725	205	280	36.1
Q1 2019	3.1	3.9	4.5	4.9	3.9	0.9	2.4	2.5	2.7	4.5	4.4	5.5	29,194	206	289	25.5
Q2 2019	2.0	4.7	1.5	3.9	3.6	2.9	2.3	2.1	2.4	4.0	4.0	5.5	30,244	208	303	20.6
Q3 2019	2.1	3.8	2.9	4.5	3.6	1.8	2.0	1.7	1.8	3.4	3.7	5.3	30,442	210	311	24.6
Q4 2019	2.0	4.0	2.1	4.5	3.5	2.6	1.6	1.6	1.8	3.3	3.7	4.8	33,035	212	316	20.6

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

Table 1.B. Historical data: International variables, Q1:2000–Q4:2019

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	5.0	2.6	0.957	7.3	1.5	100.0	7.4	-0.5	102.7	3.1	0.5	1.592
Q2 2000	3.5	0.9	0.955	6.9	-0.3	100.7	1.1	-1.1	106.1	2.3	0.4	1.513
Q3 2000	2.3	3.4	0.884	7.8	2.2	101.4	0.3	-0.3	107.9	1.1	1.0	1.479
Q4 2000	2.7	2.8	0.939	3.6	2.5	105.2	4.0	-1.1	114.4	0.6	1.9	1.496
Q1 2001	4.0	1.2	0.879	4.8	1.7	106.1	2.1	0.7	125.5	5.8	0.1	1.419
Q2 2001	0.4	4.0	0.847	5.3	2.1	106.2	-1.9	-2.3	124.7	3.4	3.1	1.408
Q3 2001	0.6	1.5	0.910	4.9	1.3	106.5	-4.1	-0.5	119.2	3.2	1.0	1.469
Q4 2001	0.5	1.7	0.890	8.4	0.0	106.9	-1.2	-1.9	131.0	1.5	0.0	1.454
Q1 2002	0.2	3.1	0.872	7.8	0.5	107.4	0.7	-1.1	132.7	1.8	1.9	1.425
Q2 2002	2.3	2.0	0.986	8.1	1.1	104.8	3.0	0.1	119.9	2.0	0.9	1.525
Q3 2002	1.7	1.6	0.988	7.3	1.5	105.5	1.2	-0.4	121.7	3.1	1.4	1.570
Q4 2002	0.7	2.3	1.049	6.7	0.8	104.5	1.1	-0.8	118.8	3.5	1.9	1.610
Q1 2003	-1.4	3.3	1.090	6.6	3.6	105.5	0.3	0.0	118.1	2.7	1.6	1.579
Q2 2003	0.4	0.5	1.150	1.9	1.1	104.0	2.6	0.3	119.9	3.8	0.3	1.653
Q3 2003	2.3	2.1	1.165	14.6	0.1	102.6	1.5	-0.5	111.4	4.2	1.7	1.662
Q4 2003	3.0	2.3	1.260	12.8	5.5	103.4	4.5	-1.0	107.1	3.4	1.6	1.784
Q1 2004	2.0	2.2	1.229	5.8	4.0	101.4	2.8	0.8	104.2	2.2	1.3	1.840
Q2 2004	2.4	2.6	1.218	7.1	4.1	102.8	0.1	-0.4	109.4	1.4	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	1.5	2.4	1.354	6.3	0.8	98.9	-0.8	1.9	102.7	1.3	2.4	1.916
Q1 2005	0.9	1.4	1.297	10.6	2.9	98.5	2.0	-1.2	107.2	3.4	2.5	1.889
Q2 2005	2.5	2.2	1.210	8.7	1.5	98.9	2.7	-1.0	110.9	5.1	1.9	1.793
Q3 2005	3.0	3.1	1.206	9.4	2.4	98.5	3.9	-1.0	113.3	4.6	2.7	1.770
Q4 2005	2.5	2.5	1.184	11.6	1.6	98.1	0.7	0.1	117.9	6.1	1.4	1.719
Q1 2006	3.6	1.7	1.214	10.9	2.4	96.7	0.7	1.2	117.5	1.6	1.9	1.739
Q2 2006	4.4	2.5	1.278	7.2	3.2	96.6	1.0	0.4	114.5	1.0	3.0	1.849
Q3 2006	2.4	2.0	1.269	10.1	2.2	96.2	-0.7	0.4	118.0	0.4	3.3	1.872
Q4 2006	4.8	0.9	1.320	11.4	3.6	94.5	5.3	-0.5	119.0	2.1	2.6	1.959
Q1 2007	2.5	2.3	1.337	13.9	3.6	93.9	3.0	-0.7	117.6	3.8	2.6	1.969
Q2 2007	2.8	2.3	1.352	10.6	4.9	91.8	0.5	0.4	123.4	2.5	1.7	2.006
Q3 2007	1.8	2.1	1.422	8.6	7.6	90.5	-2.0	0.3	115.0	3.1	0.2	2.039
Q4 2007	2.3	4.9	1.460	13.1	5.9	89.4	1.9	2.2	111.7	1.9	4.0	1.984
Q1 2008	1.8	4.2	1.581	7.1	8.1	88.0	1.1	1.2	99.9	2.2	3.7	1.986
Q2 2008	-1.4	3.2	1.575	6.0	6.3	88.7	-1.5	1.8	106.2	-2.2	5.7	1.991
Q3 2008	-2.2	3.2	1.408	2.9	3.0	91.6	-5.0	3.4	105.9	-6.1	5.8	1.780
Q4 2008	-6.7	-1.4	1.392	0.6	-1.1	92.3	-9.4	-2.1	90.8	-8.0	0.5	1.462
Q1 2009	-12.0	-1.0	1.326	4.2	-1.4	94.3	-17.8	-3.6	99.2	-6.8	-0.1	1.430
Q2 2009	-0.1	0.0	1.402	15.0	2.3	92.3	8.6	-1.6	96.4	-1.0	2.2	1.645
Q3 2009	1.5	1.1	1.463	12.6	4.1	91.3	0.1	-1.4	89.5	0.3	3.5	1.600
Q4 2009	2.1	1.6	1.433	9.7	5.0	90.7	5.7	-1.5	93.1	1.2	3.0	1.617
Q1 2010	1.5	1.8	1.353	9.6	4.4	89.8	3.5	1.0	93.4	2.6	4.0	1.519
Q2 2010	4.0	1.9	1.229	9.5	3.4	91.1	5.5	-1.4	88.5	4.1	3.2	1.495
Q3 2010	1.8	1.6	1.360	8.8	4.2	88.4	7.4	-1.9	83.5	2.7	2.3	1.573
Q4 2010	2.5	2.6	1.327	9.6	7.5	87.4	-3.2	1.3	81.7	0.3	4.0	1.539
Q1 2011	3.4	3.7	1.418	9.6	6.2	86.5	-5.5	-0.1	82.8	2.5	6.7	1.605
Q2 2011	0.0	3.1	1.452	6.9	5.4	85.3	-2.6	-0.7	80.6	0.4	4.7	1.607
Q3 2011	0.4	1.3	1.345	5.5	5.3	87.4	10.3	0.3	77.0	1.2	3.7	1.562
Q4 2011	-1.4	3.5	1.297	6.6	3.0	87.3	-0.6	-0.6	77.0	0.7	3.4	1.554
Q1 2012	-0.9	2.9	1.333	7.6	3.2	86.3	4.9	2.2	82.4	2.6	2.1	1.599
Q2 2012	-1.3	2.2	1.267	5.8	3.9	88.1	-2.8	-1.4	79.8	-0.3	2.0	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	-0.4	1.5	1.286	6.6	2.2	86.3	-1.5	-1.9	77.9	5.0	2.2	1.613
Q4 2012	-1.7	2.5	1.319	7.3	3.5	86.0	1.0	0.1	86.6	-0.6	4.0	1.626
Q1 2013	-1.5	1.3	1.282	6.7	4.6	86.3	5.0	0.6	94.2	2.6	2.9	1.519
Q2 2013	2.1	0.2	1.301	6.2	2.8	87.2	3.2	0.0	99.2	2.2	1.7	1.521
Q3 2013	1.2	1.1	1.354	7.7	3.5	86.6	3.4	2.7	98.3	3.8	2.1	1.618
Q4 2013	0.9	0.5	1.378	7.0	4.0	85.8	-0.2	2.6	105.3	2.1	1.5	1.657
Q1 2014	1.9	1.0	1.378	5.8	1.4	86.9	4.0	1.0	103.0	2.7	1.9	1.668
Q2 2014	0.8	-0.4	1.369	7.3	2.6	86.6	-7.4	8.3	101.3	2.6	1.4	1.711
Q3 2014	1.9	0.1	1.263	6.6	2.4	87.0	0.4	1.8	109.7	2.3	0.8	1.622
Q4 2014	1.7	-0.1	1.210	6.1	1.1	88.1	2.0	-0.9	119.9	2.3	-0.4	1.558
Q1 2015	3.0	-0.7	1.074	5.7	0.9	88.1	5.5	0.5	120.0	2.1	-1.1	1.485
Q2 2015	1.6	2.4	1.115	6.8	2.7	88.4	0.5	0.8	122.1	2.9	0.7	1.573
Q3 2015	1.9	-0.2	1.116	6.6	2.7	91.1	-0.2	0.4	119.8	1.7	0.7	1.512
Q4 2015	1.7	-0.4	1.086	6.1	1.3	92.3	-1.6	-0.9	120.3	3.0	0.0	1.475
Q1 2016	2.4	-1.4	1.139	7.5	3.1	91.8	1.9	-0.4	112.4	0.7	0.0	1.438
Q2 2016	1.1	1.4	1.103	7.3	2.8	94.2	0.7	0.0	102.8	2.1	0.7	1.324
Q3 2016	1.8	1.2	1.124	6.4	1.1	93.7	1.1	-0.5	101.2	1.8	2.1	1.302
Q4 2016	3.1	1.7	1.055	5.9	1.9	97.6	0.9	2.0	116.8	2.6	2.0	1.234
Q1 2017	2.6	2.7	1.070	6.3	1.4	95.2	4.6	-0.3	111.4	2.3	3.8	1.254
Q2 2017	2.9	0.4	1.141	6.4	1.9	94.8	1.6	0.3	112.4	1.0	3.1	1.300
Q3 2017	3.1	1.0	1.181	7.1	2.2	93.7	2.7	0.5	112.6	1.4	2.3	1.340
Q4 2017	3.2	1.5	1.202	6.0	2.9	91.1	1.2	1.5	112.7	1.6	2.9	1.353
Q1 2018	1.1	2.2	1.232	6.7	2.8	89.1	-1.9	2.7	106.2	0.2	2.6	1.403
Q2 2018	1.4	2.1	1.168	6.2	1.3	93.5	2.1	-1.8	110.7	2.1	1.9	1.320
Q3 2018	0.8	2.6	1.162	5.5	2.9	97.2	-2.4	2.4	113.5	2.4	2.7	1.305
Q4 2018	1.4	0.8	1.146	5.6	1.6	96.2	1.0	0.3	109.7	0.9	1.9	1.276
Q1 2019	1.8	0.3	1.123	5.4	1.4	94.8	2.6	0.4	110.7	2.5	1.1	1.303
Q2 2019	0.6	2.0	1.137	5.2	4.1	96.4	2.0	0.1	107.8	-0.7	2.5	1.270
Q3 2019	1.1	0.7	1.091	4.5	3.6	99.8	1.8	0.5	108.1	1.7	1.8	1.231
Q4 2019	1.1	1.1	1.123	5.4	7.1	98.0	0.8	0.6	108.7	1.1	0.2	1.327

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, Q1:2020–Q1:2023

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 2020	1.6	3.7	2.2	4.1	3.6	2.2	1.6	1.7	1.8	3.3	3.6	4.8	33,381	213	319	22.8
Q2 2020	1.9	4.0	2.0	3.8	3.6	2.1	1.5	1.7	1.9	3.4	3.6	4.7	33,754	214	323	24.5
Q3 2020	1.8	3.9	1.9	3.6	3.6	2.0	1.5	1.7	1.9	3.5	3.6	4.7	34,123	216	327	25.3
Q4 2020	1.9	4.0	2.1	3.7	3.7	1.9	1.4	1.8	2.0	3.5	3.5	4.6	34,508	217	331	25.8
Q1 2021	1.9	4.0	2.2	4.0	3.7	2.1	1.4	1.8	2.0	3.6	3.6	4.6	34,895	218	335	25.9
Q2 2021	1.9	4.1	2.0	3.8	3.7	2.1	1.4	1.9	2.1	3.7	3.6	4.6	35,292	220	339	26.1
Q3 2021	1.9	4.1	2.0	3.8	3.8	2.1	1.5	2.0	2.1	3.8	3.7	4.6	35,694	221	344	26.3
Q4 2021	2.0	4.2	2.0	3.8	3.8	2.1	1.5	2.0	2.2	3.8	3.7	4.6	36,107	222	348	26.3
Q1 2022	2.0	4.2	2.0	3.9	3.9	2.3	1.6	2.1	2.2	3.9	3.8	4.7	36,526	224	351	26.6
Q2 2022	2.0	4.1	2.0	3.9	3.9	2.2	1.6	2.1	2.4	4.0	3.9	4.7	36,947	226	353	26.4
Q3 2022	2.0	4.1	2.0	3.9	3.9	2.2	1.7	2.1	2.5	4.2	4.0	4.8	37,373	228	356	26.4
Q4 2022	2.0	4.1	2.0	3.9	3.9	2.2	1.7	2.2	2.6	4.3	4.1	4.8	37,804	229	359	26.5
Q1 2023	2.0	4.1	2.0	3.9	3.9	2.2	1.8	2.2	2.7	4.3	4.1	4.8	38,240	231	361	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, Q1:2020–Q1:2023**

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 2020	1.1	1.3	1.127	5.3	3.0	98.3	0.8	0.6	108.5	1.1	1.7	1.330
Q2 2020	1.1	1.3	1.132	5.3	2.7	98.6	0.7	0.7	108.4	1.2	1.8	1.333
Q3 2020	1.1	1.4	1.136	5.3	2.4	98.8	0.7	0.7	108.2	1.2	1.8	1.336
Q4 2020	1.2	1.4	1.141	5.3	2.4	99.1	0.7	0.7	108.1	1.3	1.8	1.339
Q1 2021	1.3	1.4	1.149	5.4	2.5	99.0	0.7	0.7	108.0	1.3	1.8	1.346
Q2 2021	1.3	1.4	1.157	5.4	2.7	99.0	0.6	0.8	107.9	1.3	1.8	1.353
Q3 2021	1.3	1.5	1.165	5.4	2.8	98.9	0.6	0.8	107.8	1.4	1.9	1.360
Q4 2021	1.3	1.5	1.173	5.4	2.9	98.8	0.6	0.8	107.7	1.4	1.9	1.366
Q1 2022	1.3	1.6	1.173	5.4	3.0	98.8	0.6	0.8	107.7	1.4	1.9	1.366
Q2 2022	1.2	1.6	1.173	5.3	3.0	98.8	0.6	0.9	107.7	1.4	1.9	1.366
Q3 2022	1.2	1.6	1.173	5.3	3.1	98.8	0.6	0.9	107.7	1.4	1.9	1.366
Q4 2022	1.2	1.7	1.173	5.3	3.1	98.8	0.6	0.9	107.7	1.4	1.9	1.366
Q1 2023	1.2	1.7	1.173	5.3	3.1	98.8	0.6	0.9	107.7	1.4	1.9	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.

Table 3.A. Supervisory severely adverse scenario: Domestic variables, Q1:2020–Q1:2023

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 2020	-5.3	-3.8	-5.5	-4.2	4.5	1.7	0.1	0.5	0.7	5.2	3.9	3.4	22,262	205	308	69.1
Q2 2020	-9.9	-8.7	-7.3	-6.6	6.1	1.1	0.1	0.6	0.9	6.1	4.2	3.4	18,623	198	299	70.0
Q3 2020	-7.6	-6.5	-5.0	-4.4	7.4	1.0	0.1	0.6	1.0	6.5	4.4	3.3	16,910	191	288	66.0
Q4 2020	-5.3	-4.1	-3.4	-2.7	8.4	1.1	0.1	0.7	1.1	6.6	4.4	3.3	16,518	182	272	60.3
Q1 2021	-4.1	-2.9	-2.7	-1.8	9.2	1.3	0.1	0.8	1.2	6.2	4.4	3.3	17,151	174	255	51.2
Q2 2021	-1.6	-0.3	-1.5	-0.4	9.7	1.4	0.1	0.9	1.3	5.9	4.3	3.3	18,193	166	239	44.9
Q3 2021	-0.4	1.1	-0.7	0.4	10.0	1.5	0.1	1.0	1.4	5.6	4.2	3.3	19,440	158	222	40.1
Q4 2021	2.9	4.4	1.0	2.4	9.9	1.7	0.1	1.0	1.5	5.2	4.1	3.2	20,915	154	211	36.2
Q1 2022	3.7	5.2	1.7	3.2	9.7	1.8	0.1	1.1	1.6	4.9	4.0	3.2	22,662	153	205	32.7
Q2 2022	4.2	5.6	1.9	3.3	9.5	1.8	0.1	1.2	1.8	4.6	4.0	3.2	24,497	154	205	29.4
Q3 2022	4.5	5.9	2.0	3.5	9.2	1.8	0.1	1.3	1.9	4.4	3.9	3.2	26,589	156	206	26.2
Q4 2022	4.7	6.1	2.1	3.6	8.8	1.8	0.1	1.4	2.1	4.1	3.9	3.2	28,905	158	208	23.0
Q1 2023	4.7	6.1	2.1	3.5	8.5	1.7	0.1	1.5	2.2	3.7	3.8	3.2	31,454	161	211	20.0

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, Q1:2020–Q1:2023**

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 2020	-6.9	1.2	1.019	-1.5	3.7	104.1	-4.5	-0.1	107.5	-5.1	1.3	1.246
Q2 2020	-8.0	0.7	0.989	-1.2	2.4	107.9	-7.2	-0.7	106.2	-6.2	0.7	1.199
Q3 2020	-5.9	0.4	0.997	0.9	0.9	109.3	-8.3	-1.5	106.4	-5.0	0.1	1.194
Q4 2020	-4.0	-0.2	1.008	2.4	-1.6	109.7	-8.8	-2.4	105.0	-3.6	0.0	1.188
Q1 2021	-1.9	-0.6	1.020	4.7	-2.2	107.9	-3.3	-2.6	107.3	-1.7	-0.1	1.198
Q2 2021	-0.3	-0.8	1.033	5.7	-2.3	106.4	-1.5	-2.4	107.1	-0.2	-0.1	1.207
Q3 2021	0.8	-0.7	1.045	6.1	-2.0	104.9	-0.6	-2.1	107.1	0.8	0.1	1.216
Q4 2021	1.5	-0.4	1.059	6.2	-1.5	103.7	0.0	-1.5	107.2	1.6	0.4	1.224
Q1 2022	1.8	-0.1	1.065	6.1	-0.9	102.6	0.5	-1.2	107.4	2.1	0.6	1.225
Q2 2022	2.0	0.1	1.072	6.1	-0.4	101.8	0.8	-0.8	107.5	2.3	0.8	1.227
Q3 2022	2.0	0.3	1.078	6.1	0.1	101.1	1.0	-0.6	107.7	2.4	1.0	1.230
Q4 2022	1.9	0.5	1.085	6.2	0.6	100.5	1.1	-0.4	107.7	2.4	1.2	1.233
Q1 2023	1.8	0.7	1.091	6.3	0.9	100.0	1.0	-0.2	107.6	2.4	1.3	1.237

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 2019:Q4 (as released through January 18, 2020). The 2019: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 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/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 notes, 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: Quarterly average of ICE BofAML US 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, 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 expen-

diture 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.

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