



Supervisory Scenarios for the Resubmission of Capital Plans in the Fourth Quarter of 2020

September 2020



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Introduction

The Federal Reserve Board conducts supervisory stress tests to help ensure that large banks operating in the United States will be able to lend to households and businesses even in a severe recession. The stress tests evaluate the resilience of large banks by estimating losses under hypothetical recession scenarios.

Earlier this year, the Federal Reserve Board released the results of its 2020 stress tests and an additional sensitivity analysis conducted to explore vulnerabilities of banks to the coronavirus outbreak and response, referred to as the “COVID-19 event.” While that analysis indicated that all large banks were sufficiently capitalized, the Board took actions to preserve capital at banks in light of the heightened uncertainty associated with the event. Among those actions, the Board required banks to re-assess their capital needs and resubmit their capital plans. The Board further stated that it would conduct additional stress analyses later in the year to consider

incoming data from banks and evolving economic conditions.

This publication describes three supervisory scenarios—baseline, severely adverse, and alternative severe—that the Board will use to conduct its updated stress analyses and that each firm must use to estimate projected revenues, losses, reserves, and pro forma capital levels as part of its 2020 capital plan resubmission.¹ In light of the substantial uncertainty around the likely course of economic activity, the severely adverse and alternative severe scenarios serve to capture a broad set of severe but plausible risks. 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 See 12 CFR 225.8.

Supervisory Scenarios

The severely adverse and alternative severe scenarios describe 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.²

The scenarios start in the third quarter of 2020 and extend through the third quarter of 2023. Each scenario includes 28 variables; this set of variables is the same as the set provided in the February 2020 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 and are the same as

the set provided in the February 2020 supervisory scenarios:

- **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 include:** 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, all expressed in U.S. dollars); and Japan.

Baseline, Severely Adverse, and Alternative Severe Scenarios

The following sections describe the baseline, severely adverse, and alternative severe 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 <https://www.federalreserve.gov/supervisionreg/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 September 2020 consensus projections from *Blue Chip Economic Indicators* and to projections from other professional forecasters.³ This scenario is not a Federal Reserve forecast.

² For more information about the Federal Reserve's framework for designing stress test scenarios, see 12 CFR 252, Appendix A.

³ See Wolters Kluwer Legal and Regulatory Solutions, *Blue Chip Economic Indicators*.

The baseline scenario for the United States is a sharp increase in economic activity in the second half of 2020, followed by continued but more moderate improvement in economic conditions over the remainder of the 13-quarter stress test period. Real GDP growth rises sharply at an annualized rate of 14 percent in the second half of 2020, then gradually declines to about 2½ percent in 2023. The unemployment rate declines throughout the scenario period, falling to almost 8¾ percent by the end of 2020 and to about 5¼ percent in the third quarter of 2023, the end of the scenario period. Annualized quarterly headline CPI inflation is 3¾ percent in the third quarter of 2020 but drops thereafter and is relatively steady over the rest of the scenario period, ranging from 2 to 2¼ percent.

Accompanying the economic recovery, short-term Treasury rates are assumed to remain near zero through the end of 2021, and then to gradually rise to slightly above 1 percent by the end of the stress test period. Longer-dated Treasury yields are assumed to rise slightly over the scenario period, consistent with some steepening of the yield curve. Yields on 10-year Treasury securities rise from about ¾ percent in late 2020 to about 2 percent by the end of the scenario period. The prime rate moves in line with short-term Treasury rates, while corporate bond yields rise in line with long-term Treasury yields. Mortgage rates fall to 2¾ percent at the end of 2020, remain near that level through 2021, and then rise gradually and in line with long-term Treasury yields, reaching 3½ percent at the end of the scenario period.

Equity prices rise ¾ percent from the third to the fourth quarter of 2020 and about 3½ percent per year in 2021 and 2022. Equity prices are up more than 10¾ percent by the end of the scenario period. Equity market volatility, as measured by the VIX, averages 31¼ in the second half of 2020 and then remains near 26 for the remainder of the scenario period. House prices rise at an annualized rate of about 3½ percent from the third to the fourth quarter of 2020; thereafter, house price appreciation gradually increases to an annualized rate of 4 percent for the last three quarters of the scenario period. Commercial real estate prices decline 10 percent through the third quarter of 2021 and then rise 7¾ percent through the end of the scenario period.

The baseline paths for the international variables (see [Table 2.B](#)) are similar to the trajectories reported in the September 2020 *Blue Chip Economic Indicators*.

After strong growth in the third quarter of 2020, the baseline scenario features a relatively steady expansion in international economic activity, albeit at a different pace across the four country blocs: Over the entire scenario period, annualized real GDP growth averages 6 percent in developing Asia, 6¾ percent in the euro area, 4 percent in Japan, and 10½ percent in the United Kingdom.

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 decline in global economic activity accompanied by financial market distress.⁴ This hypothetical scenario is designed to assess the strength and resilience of banking organizations to unfavorable economic conditions, and is not a Federal Reserve forecast.

Consistent with the Scenario Design Framework, under the severely adverse scenario, the U.S. unemployment rate climbs to a peak of 12½ percent in the fourth quarter of 2021 (see [Table 3.A](#)), a 3 percentage point increase relative to the initial level, the level in the third quarter of 2020.⁵ In line with the increase in the unemployment rate, real GDP falls 3¼ percent from the third quarter of 2020 to its trough in the fourth quarter of 2021. The decline in activity is accompanied by a lower headline CPI inflation rate, which quickly falls to an annual rate of about 1¼ percent in the fourth quarter of 2020, and then ranges from 1¼ percent to about 2¼ percent in the remaining quarters.

In the later quarters of the scenario, the unemployment rate declines at a pace comparable with the paths of severely adverse scenarios used in previous stress testing cycles. Over the scenario period, despite the reduction in the unemployment rate, the level of real GDP does not rise above the level in the baseline scenario.

⁴ See 12 CFR 252, Appendix A.

⁵ The Scenario Design Framework suggests an increase in the unemployment rate in the range between 3 and 5 percentage points from its initial level, with the expectation that the Board will select an increase from the lower end of the range when the unemployment rate is already elevated. Given the release of the scenarios late in the third quarter of 2020, the initial level from which to compute the peak unemployment rate in the scenario is based on the forecast from *Blue Chip Economic Indicators* for the third quarter of 2020.

In line with the severe decline in real activity, the interest rate for 3-month Treasury bills remains near zero throughout the scenario period. The 10-year Treasury yield rises gradually from about $\frac{1}{4}$ percent during the fourth quarter of 2020 to about $1\frac{1}{2}$ percent by the end of the scenario period. The result is a steepening of the yield curve over the scenario period.

Financial conditions in corporate and real estate lending markets are stressed significantly. The spread between yields on investment-grade corporate bonds and yields on long-term Treasury securities widens to almost $5\frac{3}{4}$ percentage points before narrowing to about $1\frac{3}{4}$ percentage points at the end of the scenario period. The spread between mortgage rates and 10-year Treasury yields widens to about $3\frac{1}{2}$ percentage points early in 2021 before gradually falling to about $1\frac{3}{4}$ percentage points by the end of the scenario.

Asset prices drop sharply in this scenario. Equity prices decline more than 30 percent from the third to the fourth quarter of 2020, as the economy contracts sharply, and the VIX rises to a peak level of 70. Equity prices continue to fall in the first half of 2021 before gradually recovering, leaving them down about 23 percent for the year. They continue to recover but close the scenario period down about $4\frac{1}{4}$ percent from their value in the initial quarter. House prices and commercial real estate prices also experience large declines. House prices fall about $26\frac{3}{4}$ percent from the third quarter of 2020 to the third quarter of 2022; from that trough, they rise about $4\frac{1}{2}$ percent during the rest of the scenario period. Commercial real estate prices decline 30 percent from the third quarter of 2020 to the fourth quarter of 2022 and stay close to that level for the remainder of the scenario period.

The international component of this scenario features sharp slowdowns in all developed country blocs, leading to recessions in the euro area, the United Kingdom, and Japan. Developing Asia has only a mild slowdown in economic activity in the scenario. With the continued weakness in economic activity, all of the foreign economies included in the scenario experience sizable declines in their inflation rates during the scenario period. The U.S. dollar appreciates against the euro, the pound sterling, and the currencies of developing Asia, but depreciates slightly 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 firms. Declines in aggregate U.S. residential and commercial real estate prices should be assumed to be concentrated in regions that have experienced rapid price gains over the past two years. Declines in prices of U.S. housing and commercial real estate should also be assumed to be representative of risks to house prices and commercial real estate prices in foreign regions and economies that have experienced rapid price gains over the past two years. Moreover, conditions across Latin American economies should be assumed to be comparable to the sharp slowdown in the United States.

Comparison of the Current Severely Adverse Scenario and the February 2020 Severely Adverse Scenario

The severely adverse scenario features a smaller increase in the unemployment rate in the United States compared with the February 2020 severely adverse scenario. However, the current severely adverse scenario starts from a significantly higher unemployment rate, reflecting current economic conditions. The smaller increase in the unemployment rate reflects the Scenario Design Framework, which calls for a smaller increase in the unemployment rate when the unemployment rate is already elevated.

The consensus forecast from *Blue Chip Economic Indicators* has an unemployment rate of $9\frac{1}{2}$ percent in the third quarter of 2020. Given the weak initial economic conditions, the Scenario Design Framework calls for a 3 percentage point increase in the unemployment rate. Accordingly, the unemployment rate in the current scenario reaches a peak of $12\frac{1}{2}$ percent. Interest rates rise in the current scenario, given their low starting values, whereas they fell in the February 2020 scenario. Asset price declines are comparable with the declines in the February scenario.

Alternative Severe Scenario

This alternative scenario is consistent with a number of adverse events, including a series of second waves of the COVID-19 event that are not synchronized across different regions of the United States and the

rest of the world, and related structural changes in labor markets. Accordingly, the alternative severe scenario is characterized by a less-severe initial drop in global economic activity relative to the severely adverse scenario, and a subsequent recovery that is more sluggish. Financial market stress is comparable with the stress assumed in the severely adverse scenario. The alternative severe scenario is designed to assess the strength and resilience of banking organizations to an alternative set of unfavorable economic conditions and is not a Federal Reserve forecast.

Under the alternative severe scenario, the U.S. unemployment rate climbs to a peak of about 11 percent in the fourth quarter of 2020 (see [Table 4.A](#)). This 1½ percentage point increase in the unemployment rate departs from the Scenario Design Framework, which would call for the unemployment rate to rise at least 3 percentage points and to peak between the sixth and the eighth quarter of the scenario. The unemployment rate stays at its 11 percent peak through the fourth quarter of 2021. By that quarter, the unemployment rate is about 4½ percentage points higher than in the baseline scenario, but 1½ percentage points lower than in the severely adverse scenario. However, by the end of the scenario period, the relationship with the severely adverse scenario is reversed: The unemployment rate in the alternative severe scenario is 9 percent in the third quarter of 2023, about 1½ percentage points higher than in the severely adverse scenario.

In line with the increase in the unemployment rate, real GDP falls at an annualized rate of 9 percent in the fourth quarter of 2020 and then rises about 2 percent in 2021. Real GDP growth picks up over the remainder of the scenario period. The decline in activity is accompanied by a lower headline CPI inflation rate, which quickly falls to an annual rate of about 1 percent in the fourth quarter of 2020, and then is relatively steady over the rest of the 13-quarter period, ranging from 1¾ to 2¼ percent.

In line with the prolonged weakness in real activity, the interest rate for 3-month Treasury bills remains near zero throughout the scenario, which is identical to the path assumed in the severely adverse scenario. The 10-year Treasury yield rises gradually from ¼ percent during the third quarter of 2020 to 1¾ percent by the end of the scenario period. The result is a slightly greater steepening of the yield curve over the scenario period than in the severely adverse scenario.

Financial conditions in corporate and real estate lending markets are stressed significantly. The spread between yields on investment-grade corporate bonds and yields on long-term Treasury securities widens gradually to about 5¾ percentage points in the third quarter of 2021, before falling to 2¾ percentage points at the end of the scenario period, an increase of 1 percentage point relative to the third quarter of 2020 and ¾ percentage point higher than assumed in the severely adverse scenario. The spread between mortgage rates and 10-year Treasury yields widens to about 3¾ percentage points in the fourth quarter of 2020; it remains near this level through the fourth quarter of 2021 before gradually declining, and reaches 2 percentage points at the end of the scenario period. This end point is ¼ percentage point higher than in the severely adverse scenario, reflecting the persistently weaker level of activity assumed in this alternative scenario.

Asset prices drop sharply in this scenario. Equity prices remain depressed longer than in the severely adverse scenario, bottoming out at the end, rather than the middle, of 2021. They fall about 16¼ percent from the third to the fourth quarter of 2020 as the economy contracts; this decline in equity prices is accompanied by a rise in the VIX, which reaches a peak of 70. Equity prices continue to fall through 2021, and at the end of 2021 are almost 50 percent lower than in the third quarter of 2020. They recover through the rest of the scenario period and end the scenario down about 13½ percent from the third quarter of 2020. The VIX gradually decreases to 28 by the end of the scenario period. House prices and commercial real estate prices also experience large overall declines. House prices fall 27 percent through the fourth quarter of 2022 and recover 3¾ percent through the rest of the scenario period, a path of house prices similar to the path in the severely adverse scenario. Commercial real estate prices decline 30 percent through the end of 2022 and stay close to that level for the remainder of the scenario, a path that matches the one in the severely adverse scenario.

In line with domestic developments, the international component of this scenario features a less-severe initial contraction in global economic activity than in the severely adverse scenario, but a less-robust recovery thereafter. With the continued weakness in economic activity, all of the foreign economies included in the scenario experience sizable declines in their inflation rates during the scenario period. As in the

severely adverse scenario, the U.S. dollar initially appreciates against the euro, the pound sterling, and the currencies of developing Asia, but depreciates slightly against the yen, consistent with flight-to-safety capital flows.

Additional Key Features of the Alternative Severe Scenario

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 should be assumed to be concentrated in regions that have experienced rapid price gains over the past two years. Declines in prices of U.S. housing and commercial real estate should also be assumed to be representative of risks to house prices and commercial real estate prices in foreign regions and economies that have experienced rapid price gains over the past two years. Moreover, conditions across Latin American economies should be assumed to be comparable to the sharp slowdown in the United States.

Comparison of the Alternative Severe Scenario and the June 2020 Alternative Downside Scenarios

In June 2020 the Federal Reserve Board used several scenarios for additional sensitivity analysis to explore vulnerabilities of banks related to the COVID-19 event.⁶ The sources of stress considered in the alternative severe scenario are comparable to those for the W- and U-shaped scenarios for the sensitivity analysis released in June, albeit the rise in the unemployment rate envisaged in the new scenario is smaller but more persistent. These changes in the peak of the unemployment rate in the alternative severe scenario are in line with revisions to the forecasts of professional forecasters. Data released for the end of the second quarter and the first part of the third quarter of 2020 have generally led professional forecasters to revise downward the level of the unemployment rate expected to prevail during the remainder of 2020 and have significantly compressed the range of forecasts.

⁶ The scenarios in that sensitivity analysis had a more rapid and more pronounced increase in the unemployment rate than what is suggested by the Scenario Design Framework.

Comparison of the Alternative Severe Scenario and the February 2020 Severely Adverse Scenario

The February 2020 severely adverse scenario was designed and published before the onset of the COVID-19 event. The alternative severe scenario features a smaller increase in the unemployment rate in the United States compared with the February 2020 severely adverse scenario. However, the alternative severe scenario starts from a significantly higher unemployment rate, reflecting current economic conditions. The relatively smaller increase in the unemployment rate departs from the Scenario Design Framework, which would call for the unemployment rate to rise at least 3 percentage points and to peak between the sixth and the eighth quarter of the scenario. Moreover, the unemployment rate remains near its peak for a greater number of periods. On the financial side, asset price declines are broadly consistent with those in the February scenario.

Global Market Shock Component for the Supervisory Severely Adverse and Alternative Severe Scenarios

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 the supervisory severely adverse and alternative severe scenarios, 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 when projecting 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 June 30, 2020. These shocks do not represent a forecast of the Federal Reserve.

The design and specification of the global market shock differ from those for the macroeconomic scenarios for several reasons. First, profits and losses

⁷ All firms that were subject to the global market shock component for the 2020 DFAST and CCAR exercises are also subject to the global market shock component for the additional analysis in connection with the resubmission of firms' capital plans.

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 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 over the projection period.

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 major and some minor currencies, along with selected points along term structures of implied volatilities;
- Selected-maturity sovereign debt yields (e.g., Treasury yields), 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 that 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.⁸ For example, more-liquid asset classes, such as interest rates, foreign exchange, or public equities, are calibrated to shorter horizons, such as three months, while less-liquid assets, such as non-agency securitized products or private equities, have longer calibration horizons, such as 12 months.

Severely Adverse and Alternative Severe Scenarios

Both the severely adverse and alternative severe scenarios include the same global market shock component, which incorporates widespread corporate

⁸ Markets that are well-functioning and that appear to be very liquid can undergo abrupt changes in times of financial stress, and the timing and severity of 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 deteriorated drastically during the crisis period.

defaults, ratings downgrades, severe declines in equity values, and increases in equity-implied volatility resulting from a worsening recession.

Spreads widen sharply for non-investment grade and lower-rated investment grade bonds as ratings-sensitive investors anticipate further downgrades and sell assets. Similarly, the leveraged loan market comes under considerable pressure from decreased demand. 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 a fall in risk appetite and 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.

Given the current low level of short-term interest rates, short-term Treasury rates fall only slightly in this scenario. Longer-term Treasury rates fall as a result of flight-to-safety flows, but by a modest amount given the already-low interest rate environment. Short-term U.S. interbank lending rates rise as firms face increased funding pressure from a pull-back in overnight lending, while longer-term swap rates fall in line with the declines in long-term Treasury rates.

Flight-to-safety considerations cause the U.S. dollar to appreciate somewhat against the currencies of most advanced economies, with the Japanese yen a notable exception. The yen appreciates against the U.S. dollar as investors view the yen as a safe-haven currency. Flight-to-safety considerations cause precious metals to experience an increase in value while non-precious metals prices fall as a result of lower

demand that in turn results from global economic weakness.

Comparison of the Global Market Shock Components for the Current Severely Adverse and the Alternative Severe Scenarios and the February 2020 Severely Adverse Scenario

The global market shock component is broadly consistent with the February 2020 severely adverse scenario as both emphasize a heightened stress to highly leveraged markets that causes CLOs and private equity investments to experience large market value declines. Moreover, there is a general rise in short-term interbank lending rates, highlighting a severe increase in funding pressures. A key difference is a milder decline in Treasury rates, which reflects that policy rates are now closer to zero. Shocks to equity values and short-term equity implied volatility are substantially larger. Energy price declines and related volatility increases are more pronounced, in general. The Swiss franc depreciates instead of appreciates against the U.S. dollar. Finally, stresses in the municipal bond market are more severe.

Comparison of the Global Market Shock Components for the Current Severely Adverse and the Alternative Severe Scenarios and the June 2020 Alternative Downside Scenarios

The global market shock component reflects themes similar to those highlighted in the June 2020 alternative downside scenarios. Key differences include a milder decline in Treasury rates, which reflects that policy rates are now closer to zero. Sovereign credit spreads widen less severely, particularly in the European periphery. In addition, changes to agency option-adjusted spreads are more modest given the increase in spread levels since the as-of-date of the June 2020 alternative downside scenarios.

Counterparty Default Component for the Supervisory Severely Adverse and Alternative Severe Scenarios

Firms with substantial trading or custodial operations will be required to incorporate a counterparty default scenario component into their supervisory severely adverse and alternative severe stress scenarios for the resubmission of capital plans in the fourth quarter of 2020. The counterparty default scenario component involves the instantaneous and

unexpected default of the firm's largest counterparty.^{9, 10}

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 instantaneous and unexpected default of the counterparty that would generate the largest losses across their derivatives and

⁹ 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.

¹⁰ U.S. intermediate holding companies (IHCs) are not required to include any affiliate of the U.S. IHC 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.

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 environments specified in the supervisory severely adverse and alternative severe scenarios.

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 June 30, 2020—the same date as for the global market shock.¹¹

¹¹ As with the global market shock, 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–Q2:2020

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	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	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	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	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	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	234	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	209	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	159	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	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	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	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	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	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	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	180	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	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	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	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	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	161	214	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	240	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	254	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	258	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	264	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	268	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	277	13.1
Q1 2018	3.8	6.2	5.2	8.0	4.1	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	280	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	206	288	25.5
Q2 2019	1.5	4.1	-1.0	1.5	3.6	3.0	2.3	2.1	2.4	4.0	4.0	5.5	30,244	208	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	3.5	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	213	304	82.7
Q2 2020	-31.7	-33.3	47.0	44.4	13.0	-3.5	0.1	0.4	0.7	3.4	3.2	3.3	31,577	216	305	57.1

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

Table 1.B. Historical data: International variables, Q1:2000–Q2:2020

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)	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	7.4	-0.5	102.7	3.1	0.5	1.592
Q2 2000	3.6	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	4.1	1.2	0.879	4.8	1.7	106.1	2.2	0.7	125.5	5.8	0.1	1.419
Q2 2001	0.4	4.0	0.847	5.3	2.1	106.2	-2.0	-2.3	124.7	3.4	3.1	1.408
Q3 2001	0.6	1.5	0.910	4.9	1.3	106.5	-4.0	-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	2.2	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	1.3	-0.4	121.7	3.1	1.4	1.570
Q4 2002	0.7	2.3	1.049	6.7	0.8	104.5	1.0	-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	2.5	0.3	119.9	3.8	0.3	1.653
Q3 2003	2.3	2.1	1.165	14.6	0.1	102.6	1.6	-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	2.9	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	1.4	2.4	1.354	6.3	0.8	98.9	-0.8	1.9	102.7	1.3	2.4	1.916
Q1 2005	1.0	1.4	1.297	10.6	2.9	98.5	2.0	-1.2	107.2	3.4	2.5	1.889
Q2 2005	2.3	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	3.7	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	2.3	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	2.6	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	1.7	2.1	1.422	8.6	7.6	90.5	-1.9	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	1.0	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	-2.1	3.2	1.408	2.9	3.0	91.6	-4.9	3.4	105.9	-6.1	5.8	1.780
Q4 2008	-6.8	-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	0.2	-1.4	89.5	0.3	3.5	1.600
Q4 2009	1.9	1.6	1.433	9.7	5.0	90.7	5.6	-1.5	93.1	1.2	3.0	1.617
Q1 2010	1.6	1.8	1.353	9.7	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	8.7	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	9.7	6.2	86.5	-5.5	-0.1	82.8	2.5	6.7	1.605
Q2 2011	0.1	3.1	1.452	6.8	5.4	85.3	-2.6	-0.7	80.6	0.4	4.7	1.607
Q3 2011	0.4	1.3	1.345	5.6	5.3	87.4	10.3	0.3	77.0	1.2	3.7	1.562
Q4 2011	-1.5	3.5	1.297	6.5	3.0	87.3	-0.6	-0.6	77.0	0.7	3.4	1.554
Q1 2012	-0.9	2.9	1.333	7.7	3.2	86.3	4.9	2.2	82.4	2.6	2.1	1.599
Q2 2012	-1.2	2.2	1.267	5.8	3.9	88.1	-2.9	-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	-0.5	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	1.1	0.1	86.6	-0.6	4.0	1.626
Q1 2013	-1.6	1.3	1.282	6.8	4.6	86.3	5.0	0.6	94.2	2.6	2.9	1.519
Q2 2013	2.2	0.2	1.301	6.3	2.8	87.2	3.1	0.0	99.2	2.2	1.7	1.521
Q3 2013	1.3	1.1	1.354	7.7	3.5	86.6	3.4	2.7	98.3	3.8	2.1	1.618
Q4 2013	1.0	0.5	1.378	6.8	4.0	85.8	-0.1	2.6	105.3	2.1	1.6	1.657
Q1 2014	1.8	1.0	1.378	6.3	1.4	86.9	4.0	1.0	103.0	2.7	1.9	1.668
Q2 2014	0.7	-0.3	1.369	7.4	2.6	86.7	-7.5	8.3	101.3	2.6	1.4	1.711
Q3 2014	1.9	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	2.3	-0.4	1.558
Q1 2015	2.7	-0.7	1.074	6.4	0.9	88.1	5.6	0.4	120.0	2.1	-1.1	1.485
Q2 2015	1.8	2.5	1.115	6.9	2.7	88.5	0.4	0.8	122.1	2.9	0.7	1.573
Q3 2015	1.8	-0.2	1.116	6.4	2.7	91.1	-0.2	0.5	119.8	1.7	0.6	1.512
Q4 2015	1.8	-0.4	1.086	5.5	1.2	92.3	-1.5	-1.1	120.3	3.0	0.1	1.475
Q1 2016	2.3	-1.4	1.139	7.1	3.0	91.8	2.1	-0.4	112.4	0.7	0.1	1.438
Q2 2016	1.0	1.5	1.103	7.0	2.9	94.3	0.5	-0.1	102.8	2.1	0.7	1.324
Q3 2016	1.8	1.2	1.124	6.5	1.2	93.7	0.9	-0.4	101.2	1.8	2.0	1.302
Q4 2016	3.1	1.7	1.055	5.8	1.7	97.6	1.2	2.0	116.8	2.6	2.1	1.234
Q1 2017	3.0	2.7	1.070	6.3	1.2	95.2	4.8	-0.5	111.4	2.3	3.8	1.254
Q2 2017	2.7	0.5	1.141	6.5	2.2	94.8	1.2	0.7	112.4	1.0	3.1	1.300
Q3 2017	3.3	0.9	1.181	6.7	2.3	93.7	2.3	0.4	112.6	1.4	2.3	1.340
Q4 2017	3.4	1.5	1.202	6.4	2.6	91.1	1.9	1.9	112.7	1.6	3.0	1.353
Q1 2018	0.8	2.2	1.232	7.0	2.4	89.1	-1.7	2.3	106.2	0.2	2.5	1.403
Q2 2018	1.4	2.2	1.168	5.7	1.8	93.5	1.5	-1.8	110.7	2.1	1.9	1.320
Q3 2018	0.6	2.5	1.162	4.6	3.0	97.2	-3.2	2.3	113.5	2.4	2.5	1.305
Q4 2018	1.8	0.8	1.146	6.3	1.1	96.2	2.3	0.4	109.7	0.9	2.1	1.276
Q1 2019	2.1	0.2	1.123	6.3	1.1	94.7	2.8	0.1	110.7	2.7	1.0	1.303
Q2 2019	0.5	2.1	1.137	4.8	5.0	96.4	1.6	0.7	107.8	-0.2	2.6	1.270
Q3 2019	1.3	0.6	1.091	2.9	3.5	99.8	0.2	0.3	108.1	2.1	1.6	1.231
Q4 2019	0.2	1.0	1.123	6.6	6.5	98.0	-7.0	0.9	108.7	0.0	0.4	1.327
Q1 2020	-14.1	0.7	1.102	-25.7	3.8	101.9	-2.3	0.3	107.5	-8.5	2.0	1.245
Q2 2020	-39.4	-1.4	1.124	34.1	-2.1	97.3	-28.1	-1.2	107.8	-59.8	-1.5	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.

Table 2.A. Supervisory baseline scenario: Domestic variables, Q3:2020–Q3:2023

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
Q3 2020	24.0	26.7	-14.4	-12.7	9.5	3.7	0.1	0.3	0.6	2.4	3.0	3.3	34,528	218	305	33.6
Q4 2020	4.9	6.4	-3.3	-1.6	8.7	1.9	0.1	0.4	0.8	2.4	2.8	3.2	34,805	220	299	28.9
Q1 2021	4.6	6.4	-4.8	-3.0	8.1	2.1	0.1	0.4	0.9	2.5	2.7	3.2	35,090	222	293	26.9
Q2 2021	4.2	6.0	1.3	3.0	7.5	1.9	0.2	0.5	0.9	2.5	2.7	3.2	35,385	224	284	26.3
Q3 2021	4.1	5.8	2.2	4.0	7.0	2.0	0.2	0.6	1.0	2.6	2.7	3.2	35,683	226	274	26.2
Q4 2021	3.6	5.4	1.5	3.3	6.6	2.0	0.2	0.7	1.1	2.7	2.7	3.2	35,986	228	277	26.2
Q1 2022	3.3	4.4	3.4	5.6	6.3	2.3	0.4	0.8	1.2	2.8	2.8	3.4	36,295	231	279	26.3
Q2 2022	3.0	4.0	2.1	4.1	6.0	2.2	0.5	0.9	1.3	3.0	2.9	3.6	36,610	233	282	26.3
Q3 2022	2.8	4.0	2.1	4.1	5.8	2.2	0.7	1.0	1.5	3.1	3.0	3.7	36,930	235	285	26.3
Q4 2022	2.7	4.0	2.1	4.1	5.7	2.2	0.8	1.1	1.6	3.2	3.1	3.8	37,256	237	288	26.3
Q1 2023	2.5	4.0	2.1	4.1	5.5	2.2	0.9	1.2	1.7	3.4	3.2	3.9	37,588	239	290	26.4
Q2 2023	2.4	4.0	2.1	4.1	5.4	2.2	1.0	1.3	1.8	3.5	3.3	4.0	37,924	242	293	26.4
Q3 2023	2.3	4.0	2.1	4.1	5.3	2.2	1.1	1.3	1.9	3.5	3.4	4.1	38,266	244	296	26.4

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.**Table 2.B. Supervisory baseline scenario: International variables, Q3:2020–Q3:2023**

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)
Q3 2020	35.0	0.2	1.149	1.0	2.1	98.3	20.0	-1.3	107.1	80.0	-0.1	1.265
Q4 2020	18.7	1.0	1.174	1.6	2.0	99.3	4.9	-1.0	106.3	16.3	2.5	1.294
Q1 2021	3.3	1.2	1.182	6.2	3.3	99.1	2.3	0.8	106.4	6.1	1.1	1.310
Q2 2021	1.2	1.5	1.190	10.7	2.1	98.8	1.0	1.3	106.5	1.4	1.7	1.326
Q3 2021	2.5	1.3	1.198	8.8	2.5	98.6	2.1	0.9	106.6	2.8	1.8	1.343
Q4 2021	3.7	1.2	1.206	6.9	2.9	98.3	3.1	0.6	106.7	4.2	1.8	1.359
Q1 2022	5.0	1.0	1.206	4.8	3.3	98.3	4.1	0.2	106.7	5.6	1.9	1.359
Q2 2022	4.3	1.1	1.206	5.0	3.3	98.3	3.6	0.2	106.7	5.0	2.0	1.359
Q3 2022	3.7	1.1	1.206	5.2	3.3	98.3	3.2	0.2	106.7	4.4	2.0	1.359
Q4 2022	3.2	1.2	1.206	5.5	3.3	98.3	2.7	0.2	106.7	3.8	2.1	1.359
Q1 2023	2.6	1.2	1.206	5.7	3.4	98.3	2.3	0.3	106.7	3.2	2.2	1.359
Q2 2023	1.9	1.3	1.206	7.2	2.9	98.3	1.7	0.6	106.7	2.4	2.1	1.359
Q3 2023	1.3	1.4	1.206	8.9	2.5	98.3	1.1	0.9	106.7	1.6	1.9	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.

Table 3.A. Supervisory severely adverse scenario: Domestic variables, Q3:2020–Q3:2023

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
Q3 2020	24.0	26.5	-12.3	-10.6	9.5	3.6	0.1	0.2	0.3	2.1	2.7	3.3	35,961	220	305	33.6
Q4 2020	-5.9	-5.3	-14.2	-13.4	10.5	1.2	0.1	0.2	0.3	5.0	3.7	3.2	25,124	208	298	70.0
Q1 2021	-3.6	-2.6	-12.8	-11.8	11.3	1.4	0.1	0.2	0.3	5.7	3.8	3.2	19,841	198	291	68.1
Q2 2021	-2.5	-1.8	-5.6	-4.6	11.9	1.2	0.1	0.2	0.4	6.1	3.9	3.2	18,009	190	282	64.3
Q3 2021	-0.2	0.4	-3.1	-1.9	12.2	1.4	0.1	0.2	0.5	5.7	3.8	3.2	18,530	182	268	53.6
Q4 2021	-0.2	0.7	-2.4	-1.2	12.5	1.4	0.1	0.2	0.6	5.4	3.7	3.2	19,275	174	255	46.8
Q1 2022	5.7	6.2	3.5	5.5	12.0	2.1	0.1	0.3	0.7	5.1	3.6	3.2	20,479	168	241	41.8
Q2 2022	8.2	8.6	3.7	5.7	11.3	2.2	0.1	0.4	0.8	4.8	3.5	3.2	21,952	163	227	37.8
Q3 2022	10.8	11.1	5.3	7.6	10.2	2.3	0.1	0.4	1.0	4.5	3.5	3.2	23,779	161	218	34.3
Q4 2022	10.8	11.3	5.6	7.8	9.2	2.3	0.1	0.5	1.1	4.2	3.4	3.2	25,918	161	213	32.1
Q1 2023	8.2	8.9	4.2	6.2	8.4	2.1	0.1	0.6	1.2	3.9	3.3	3.2	28,338	164	213	30.4
Q2 2023	5.7	6.7	2.7	4.5	8.0	2.0	0.1	0.7	1.4	3.6	3.3	3.2	31,069	165	214	28.1
Q3 2023	5.3	6.5	2.1	3.9	7.6	2.0	0.1	0.8	1.5	3.3	3.2	3.2	34,231	168	215	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 3.B. Supervisory severely adverse scenario: International variables, Q3:2020–Q3:2023**

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)
Q3 2020	35.0	0.2	1.124	1.0	2.4	97.3	20.0	-0.3	107.8	80.0	0.3	1.237
Q4 2020	-3.6	-0.1	1.101	-1.0	0.1	98.9	-6.9	-1.3	107.2	-2.7	0.4	1.212
Q1 2021	-3.0	-0.2	1.074	3.7	-0.7	100.9	-4.5	-1.6	106.7	-3.1	-0.2	1.182
Q2 2021	-2.1	0.4	1.053	8.8	-0.5	102.5	-2.7	-1.6	106.2	-2.3	0.3	1.159
Q3 2021	-1.8	0.2	1.048	7.6	-1.1	102.9	-2.2	-1.7	105.9	-2.1	0.3	1.153
Q4 2021	-1.6	0.2	1.045	6.3	-0.7	103.1	-1.8	-1.5	105.7	-1.9	0.0	1.150
Q1 2022	1.0	-0.1	1.043	4.8	-1.0	103.4	1.0	-1.9	105.6	1.0	0.0	1.148
Q2 2022	5.0	-0.5	1.048	5.2	-0.7	102.9	3.5	-2.1	105.9	5.0	-0.1	1.153
Q3 2022	7.0	-0.8	1.058	5.7	-0.2	102.1	4.5	-2.1	106.2	7.0	-0.1	1.165
Q4 2022	8.0	-0.8	1.080	6.1	0.2	100.5	5.5	-1.8	106.4	8.0	0.1	1.188
Q1 2023	9.0	-0.5	1.090	6.3	0.8	99.7	6.0	-1.3	106.7	9.0	0.5	1.200
Q2 2023	10.0	-0.1	1.101	8.1	1.2	98.9	6.5	-0.7	107.0	10.0	1.0	1.212
Q3 2023	11.0	0.5	1.113	10.2	1.6	98.1	7.5	-0.1	107.2	11.0	1.5	1.225

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

Table 4.A. Supervisory alternative severe scenario: Domestic variables, Q3:2020–Q3:2023

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
Q3 2020	24.0	26.6	-12.3	-10.6	9.5	3.7	0.1	0.2	0.3	2.0	2.7	3.3	36,530	220	305	33.6
Q4 2020	-9.1	-8.5	-15.7	-15.0	11.0	1.1	0.1	0.2	0.3	5.0	3.7	3.2	30,566	207	298	70.0
Q1 2021	2.1	3.3	-10.4	-8.9	11.0	1.8	0.1	0.2	0.4	5.5	3.7	3.2	26,681	198	291	64.2
Q2 2021	2.1	3.3	-3.0	-1.6	11.0	1.7	0.1	0.2	0.4	5.9	3.9	3.2	23,647	192	282	62.6
Q3 2021	2.1	2.8	-1.5	0.0	11.0	1.7	0.1	0.3	0.5	6.2	4.0	3.2	20,082	185	268	60.6
Q4 2021	2.1	3.2	-1.0	0.6	11.0	1.7	0.1	0.4	0.7	6.4	4.1	3.2	18,330	177	255	57.6
Q1 2022	3.6	4.2	2.4	4.5	10.8	2.2	0.1	0.5	0.8	6.0	4.0	3.2	19,415	172	241	50.2
Q2 2022	4.2	4.7	1.4	3.4	10.5	2.2	0.1	0.6	1.0	5.8	4.0	3.2	20,703	165	227	45.1
Q3 2022	4.2	4.9	1.7	3.7	10.3	2.2	0.1	0.6	1.1	5.5	4.0	3.2	22,247	161	218	41.0
Q4 2022	4.2	5.2	1.9	3.9	10.0	2.2	0.1	0.7	1.3	5.3	4.0	3.2	24,065	160	213	37.4
Q1 2023	4.8	6.0	2.1	4.2	9.7	2.2	0.1	0.9	1.5	5.0	3.9	3.2	26,221	162	213	34.1
Q2 2023	4.8	6.1	2.0	4.1	9.3	2.2	0.1	1.0	1.6	4.7	3.9	3.2	28,725	164	214	31.0
Q3 2023	5.0	6.3	2.0	4.1	9.0	2.2	0.1	1.2	1.8	4.4	3.8	3.2	31,632	166	215	27.9

Note: Refer to [Notes Regarding Scenario Variables](#) for more information on the definitions and sources of historical observations of the variables in the table.**Table 4.B. Supervisory alternative severe scenario: International variables, Q3:2020–Q3:2023**

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)
Q3 2020	35.0	0.3	1.113	1.0	2.5	98.3	20.0	-0.3	107.6	80.0	0.3	1.225
Q4 2020	-4.4	-0.1	1.101	-1.0	0.2	99.3	-6.9	-1.3	107.3	-4.1	0.4	1.212
Q1 2021	1.0	0.0	1.069	5.2	-0.2	102.3	1.0	-1.5	106.7	1.0	-0.1	1.177
Q2 2021	1.0	0.6	1.074	9.7	0.2	101.8	1.0	-1.2	106.8	1.0	0.5	1.182
Q3 2021	1.0	0.5	1.080	7.8	-0.3	101.3	1.0	-1.0	106.9	1.0	0.6	1.188
Q4 2021	1.0	0.7	1.085	5.9	0.3	100.8	1.0	-0.5	107.0	1.0	0.6	1.194
Q1 2022	1.0	0.2	1.090	3.8	-0.4	100.3	1.0	-0.8	107.1	1.0	0.5	1.200
Q2 2022	0.6	-0.4	1.102	4.0	-0.5	100.1	0.6	-1.1	107.1	0.6	0.3	1.215
Q3 2022	0.8	-1.0	1.112	4.2	-0.5	99.9	0.7	-1.4	107.0	0.8	0.0	1.229
Q4 2022	1.0	-1.5	1.121	4.5	-0.5	99.8	0.7	-1.5	107.0	1.0	-0.3	1.241
Q1 2023	2.0	-1.6	1.129	4.7	-0.4	99.6	1.3	-1.5	107.0	2.0	-0.4	1.253
Q2 2023	2.8	-1.6	1.137	6.2	-0.4	99.5	1.5	-1.4	106.9	3.0	-0.4	1.263
Q3 2023	3.0	-1.5	1.143	7.9	-0.4	99.4	1.7	-1.1	106.9	3.5	-0.4	1.272

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 2020:Q2 (as released through September 10, 2020). The 2020:Q2 values of variables marked with an asterisk (*) are projected.

U.S. real GDP growth: 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: 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, non-institutional 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 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/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 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: 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; 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: Percent change in gross domestic product at an annualized rate from 1980 to

present and percent change in gross domestic expenditure at an annualized rate prior to 1980, Cabinet Office of Japan via Haver.

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

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

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

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

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