Prefatory Note

Class I FOMC – Restricted Controlled (FR)

Report to the FOMC on Economic Conditions and Monetary Policy

Book B

Monetary Policy Alternatives

December 5, 2019

Prepared for the Federal Open Market Committee
by the staff of the Board of Governors of the Federal Reserve System

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Monetary Policy Alternatives

In light of the Committee's recent policy actions, as well as communications indicating that an adjustment at this meeting is unlikely in the absence of a material reassessment of the economic outlook, all three of the alternative policy statements presented below maintain the target range for the federal funds rate at 1½ to 1¾ percent. However, the alternatives vary in their communications about the likely future path of monetary policy.

Alternative B expresses the Committee's judgment that, following the adjustments made at earlier meetings, "the current stance of monetary policy is appropriate to support sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective." Despite this judgment, Alternative B emphasizes that the Committee will continue to monitor the implications of incoming information for the economic outlook, "including global developments and muted inflation pressures." This latter addition signals that the downside risk factors that had been cited as reasons for the earlier policy easings still merit particular attention.

Alternative A expresses less confidence than Alternative B that the current stance is appropriate to achieve the Committee's goals by putting greater emphasis on the risk of undesirably low inflation. In particular, it downgrades the assessment of survey-based measures of longer-term inflation expectations by noting that "indicators of longer-term inflation expectations remain low." In addition, it highlights uncertainties about the outlook including "whether inflation will remain below 2 percent longer than expected."

Alternative C is written in the spirit of prudent planning for future circumstances in which the FOMC may want to signal that a rate hike is imminent. However, as data since the October meeting—when the Committee lowered the target range—have not prompted any material change in the economic outlook, a depiction of incoming data since that meeting would likely be at variance with the intended policy message of Alternative C. Consequently, the draft statement for Alternative C simply omits the first paragraph.

With regard to the specifics of the language in Alternatives A, B, and C:

- The assessment of the incoming data:
  - Alternatives A and B share the same characterizations of much of the incoming data on the labor market and economic activity. In particular, the two alternatives continue to describe economic growth as “moderate,” characterize the labor market as “strong,” and the unemployment rate as remaining “low.” Both Alternatives note that household spending “has been rising at a strong pace,” while business fixed investment and exports “remain weak.”
  - In characterizing the incoming data on inflation, Alternative B notes that core and headline inflation rates “are running” below 2 percent, while Alternative A stresses that these measures “continue to run” below 2 percent. Regarding indicators of inflation expectations, Alternative B continues to say that market-based measures of inflation compensation “remain low” and that survey-based measures of longer-term inflation expectations are “little changed,” while Alternative A strikes out the corresponding sentence and emphasizes, instead, that “indicators of longer-term inflation expectations remain low.”
- The outlook for economic activity and inflation:
  - Under all three alternatives, the outlook for economic activity and inflation is unchanged from the October statement. However, to achieve the outcomes of “sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee’s symmetric 2 percent objective,” the alternatives anticipate potentially different paths for the target range for the federal funds rate.
  - Alternatives B and C delete the language indicating that “uncertainties about this outlook remain.”
- The current policy decision and the outlook for policy:
  - All three alternatives maintain the current target range for the federal funds rate.
  - Under Alternative B, the Committee judges that “the current stance of monetary policy is appropriate to support” sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee’s symmetric 2 percent objective. This draft statement also notes that the

Committee will continue to monitor the implications of the incoming information for the economic outlook, with specific reference to "global developments and muted inflation pressures."

- Alternative A links the outlook for the policy rate predominantly to inflation. In particular, it highlights uncertainties about the outlook including "whether inflation will remain below 2 percent longer than expected."
- By contrast, Alternative C offers an illustrative formulation, applicable to circumstances in which "some reduction in the degree of monetary accommodation may soon become appropriate."

Alternatives

OCTOBER 2019 FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in September indicates that the labor market remains strong and that economic activity has been rising at a moderate rate. Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Although household spending has been rising at a strong pace, business fixed investment and exports remain weak. On a 12-month basis, overall inflation and inflation for items other than food and energy are running below 2 percent. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations are little changed.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. In light of the implications of global developments for the economic outlook as well as muted inflation pressures, the Committee decided to lower the target range for the federal funds rate to 1-1/2 to 1-3/4 percent. This action supports the Committee's view that sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective are the most likely outcomes, but uncertainties about this outlook remain. The Committee will continue to monitor the implications of incoming information for the economic outlook as it assesses the appropriate path of the target range for the federal funds rate.

3. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments.

Alternatives

ALTERNATIVE A FOR DECEMBER 2019

1. Information received since the Federal Open Market Committee met in ~~September~~ **October** indicates that the labor market remains strong and that economic activity has been rising at a moderate rate. Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Although household spending has been rising at a strong pace, business fixed investment and exports remain weak. On a 12-month basis, overall inflation and inflation for items other than food and energy ~~are running~~ **continue to run** below 2 percent. ~~Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations are little changed.~~ **Indicators of longer-term inflation expectations remain low.**

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. In ~~light of the implications of global developments for the economic outlook as well as muted inflation pressures~~ **support of these goals**, the Committee decided to ~~lower~~ **maintain** the target range for the federal funds rate ~~to~~ **at** 1-1/2 to 1-3/4 percent. ~~This action supports~~ The Committee~~'s~~ **continues to** view ~~that~~ sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective ~~are~~ **as** the most likely outcomes~~, but~~**. However,** uncertainties about this outlook remain**, including whether inflation will remain below 2 percent longer than expected**. The Committee will continue to monitor the implications of incoming information for the economic outlook as it assesses the appropriate path of the target range for the federal funds rate.

3. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments.

ALTERNATIVE B FOR DECEMBER 2019

1. Information received since the Federal Open Market Committee met in ~~September~~ **October** indicates that the labor market remains strong and that economic activity has been rising at a moderate rate. Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Although household spending has been rising at a strong pace, business fixed investment and exports remain weak. On a 12-month basis, overall inflation and inflation for items other than food and energy are running below 2 percent. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations are little changed.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. ~~In light of the implications of global developments for the economic outlook as well as muted inflation pressures,~~ The Committee decided to ~~lower~~ **maintain** the target range for the federal funds rate ~~to~~ **at** 1-1/2 to 1-3/4 percent. ~~This action supports~~ The Committee~~’s view~~ **judges** that **the current stance of monetary policy is appropriate to support** sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee’s symmetric 2 percent objective ~~are the most likely outcomes, but uncertainties about this outlook remain~~. The Committee will continue to monitor the implications of incoming information for the economic outlook**, including global developments and muted inflation pressures,** as it assesses the appropriate path of the target range for the federal funds rate.

3. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments.

ALTERNATIVE C FOR DECEMBER 2019

1. Information received since the Federal Open Market Committee met in…

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. In ~~light of the implications of global developments for the economic outlook as well as muted inflation pressures~~ **support of these goals**, the Committee decided to ~~lower~~ **maintain** the target range for the federal funds rate ~~to~~ **at** 1-1/2 to 1-3/4 percent. ~~This action supports~~ The Committee~~'s view~~ **judges** that **some reduction in the degree of monetary accommodation may soon become appropriate to** sustain~~ed~~ **the** expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective ~~are the most likely outcomes, but uncertainties about this outlook remain~~. The Committee will continue to monitor the implications of incoming information for the economic outlook as it assesses the appropriate path of the target range for the federal funds rate.

3. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments.

Economic Conditions and Outlook

- The data released during the intermeeting period continue to suggest that economic activity has been expanding at a moderate rate in the second half of this year. The staff projection for real GDP growth over the short and medium term is a touch stronger than in the October Tealbook, largely reflecting a higher projected path for equity prices.
    - Household spending rose at a strong clip through the third quarter, buoyed by solid job gains and income growth. Recent data suggest some deceleration in spending this quarter. Consumer sentiment remains positive.
    - After increasing at an annual rate of just 1.7 percent in the first half of this year, business fixed investment is projected to decline about 1.2 percent in the second half and to edge down a bit further in the first quarter of 2020.
    - Net exports are expected to be a slight drag for U.S. GDP growth in the second half of this year. After flattening out in the third quarter, exports are projected to resume their decline in this quarter.
- Available data indicate that the labor market remains strong. Although the pace of payroll growth has softened this year, it continues to exceed the pace consistent with no change in resource utilization.
    - Currently published data indicate that, after rising 223,000 per month in 2018, nonfarm payroll employment rose at an average monthly pace of nearly 167,000 this year through October. The staff estimates that the BLS benchmark revision early next year will lower total payroll employment growth by 42,000 per month from the second quarter of 2018 through the first quarter of this year, and it will reduce estimates of payroll growth by 16,000 per month through the remainder of this year.
    - The unemployment rate, which has hovered near 50-year lows for over a year, stood at 3.6 percent in October. With projected output growth a bit above potential in 2020, the staff expects the unemployment rate to tick down to 3.5 percent by the middle of next year and to remain there through the end of 2022.
    - The labor force participation rate (LFPR) moved up further, to 63.3 percent, in October and has risen 0.5 percentage point so far this year. In response to a

string of unexpectedly strong LFPR readings, the staff revised up its estimate of the trend level of participation in 2019 and over the projection period.

- After a low reading in September, growth in average hourly earnings in October was a little stronger, but its 12-month change has edged down, on net, over the course of this year.

- Inflation remains subdued, despite the sustained low levels of the unemployment rate.
    - Core PCE prices increased 1.6 percent over the 12 months ending in October. Staff projects that this measure of inflation will run close to this level through the end of the year and then move up to 1.9 percent by March 2020. Thereafter, the staff expects core PCE price inflation to remain at this level, a touch higher than in the previous forecast. Over the medium term, core inflation runs a bit higher than the staff's estimate of its underlying trend of 1.8 percent as the projected boost to inflation from tight resource utilization outweighs the downward pressure on inflation arising from the influence of the rising exchange value of the dollar on import prices.
    - The staff projects that energy prices will continue to fall through next year, and that, as a result, total PCE price inflation will run below core PCE price inflation over that period.
    - Consistent with the absence of a material tightening in the labor market over the forecast period, the staff anticipates continued moderate wage growth over the medium term.
    - The median of long-run inflation expectations from the Michigan survey rose 0.2 percentage point, to 2.5 percent, in November. The Federal Reserve Bank of New York Survey of Consumer Expectations measure of median three-year-ahead expected inflation was unchanged in October at its historical low. Market-based measures of inflation compensation moved modestly higher since the time of the October meeting.
- Sentiment in financial markets continued to fluctuate.[1]

[1] See the "Monetary Policy Expectations and Uncertainty" box, presented elsewhere in this Tealbook, as well as the "Financial Market Developments" and "Risks and Uncertainty" sections of the November Tealbook A, for additional discussion.

Monetary Policy Expectations and Uncertainty

Financial market prices and results from the Desk's December surveys suggest that investors perceive the likelihood of near-term changes to the target range for the federal funds rate to have declined over the intermeeting period. Expectations for the path of the federal funds rate over the next few years fell modestly, on net. Meanwhile, survey-based measures of the longer-run expected federal funds rate have fallen further.

Figure 1 shows that the probability distribution for the level of the federal funds rate following the December FOMC meeting, based on options quotes, narrowed notably over the intermeeting period. A straight read of the distribution suggests that investors currently attach about 90 percent probability to the target range being left unchanged, and about 10 percent probability to a 25-basis-point reduction. The corresponding average probability distribution from the December Desk surveys (not shown) also narrowed notably and suggests similarly high odds on no change in the target range at the upcoming meeting.

The option-implied distribution for the level of the federal funds rate following the January meeting (not shown) also narrowed and implies a probability of about 75 percent on the federal funds rate remaining in its current range. However, the corresponding distribution following the March meeting, shown in figure 2, was relatively little changed over the intermeeting period. The latter distribution suggests that investors currently attach about equal odds to the federal funds rate falling into either the 1.25 to 1.50 percent range or the 1.50 to 1.75 percent range.

Figure 3 shows the option-implied probabilities, unadjusted for term premiums, of the effective federal funds rate falling in the current target range of 1.50 percent to 1.75 percent following each of the FOMC meetings between now and September 2020.[1] As discussed above, the probabilities of the federal funds rate remaining in the current target range following the December and January FOMC meetings have risen notably, on net, from their levels prior to the October FOMC meeting and stand at relatively high values. However, the probabilities of the federal funds rate remaining within its current range following subsequent meetings are relatively little changed and are near or less than 1/3. Similar to the post-March distribution shown in figure 2, the option-implied distributions for subsequent meetings (not shown) place much higher odds on the federal funds rate being below the current target range rather than above it.

[1] Each bar shows the probability of no net change in the federal funds target range between today and a different future meeting. For example, the bars for December 2019 and March 2020 correspond with the modal outcomes in figure 1 and figure 2, respectively.

Alternatives

Looking further ahead, figure 4 shows the probability distribution for the level of the federal funds rate at the end of 2020, as reported by the average respondent to the December Desk surveys. The average respondent places the highest probability, of about 35 percent, on the federal funds rate falling in the current target range of 1.50 to 1.75 percent. Of note, respondents assign a much higher probability to the federal funds rate falling below the current target range (about 50 percent odds) than above it (about 10 percent odds). This is similar to the market-implied distributions for the federal funds rate, which assign increasingly larger odds to a lower target range.

The blue lines in figure 5 show the expected federal funds rate path implied by OIS quotes under the assumption of zero term premiums. Since the October FOMC meeting, end-2020, -2021, and -2022 forward rates fell by 9, 7, and 2 basis points, respectively. A straight read of these market-implied forward rates suggests that investors expect the federal funds rate to fall about 30 basis points between now and the end of 2020 and to remain little changed over the subsequent few years.

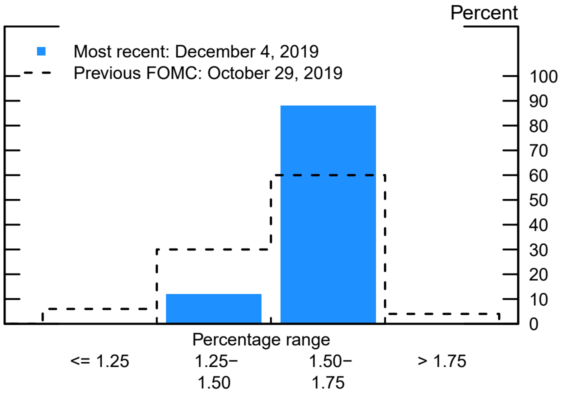
The median respondent to the Desk's December surveys (the black crosses in figure 5) reported no change in the target range as the most likely outcome through end-2022, although the mean expected paths implied by the average respondent (the brown diamonds) and the staff's macro-finance model (the green line) lie close to the current unadjusted forward rate path.[2] In contrast, the latest path from the staff term structure model that adjusts OIS forward rates for term premiums (the purple lines) suggests that the federal funds rate is expected to rise gradually.

Figure 6 shows measures of the longer-run expected federal funds rate. A straight read of forward rates implied by Treasury yields suggests that investors' current expectation for the average federal funds rate 5 to 10 years ahead (the blue line) was about unchanged over the intermeeting period, at 2.0 percent. Adjustment for term premiums using various staff models (the light-red-shaded region shows a range of four such model estimates) suggests that 5-to-10-year-ahead expectations remain above the unadjusted forward rates, at between 2.4 and 2.9 percent. The average longer-run forecast from the Blue Chip survey (the yellow diamonds) declined further, with the most recent December reading standing at 2.4 percent, about 0.7 percent point lower than in December 2018. Meanwhile, the average longer-run CPI forecast from the December Blue Chip Survey (not shown) was little changed, suggesting that longer-run expectations of the short-term real interest rate have declined. The median longer-run forecast from the Desk's December surveys (the green diamonds) also declined to about 2.4 percent, a touch lower than in the October surveys.

[2] The staff's macro-finance model is discussed in the box "A Macro-Finance Measure of Term Premiums in Federal Funds Futures Rates" in the Financial Markets section of the April 2019 Tealbook A. The survey mean path is estimated from respondents' unconditional probability distributions for the year-end federal funds rate. The difference between the mean and modal expected federal funds rate for end-2020 reflects the left-skewed distribution in figure 4.

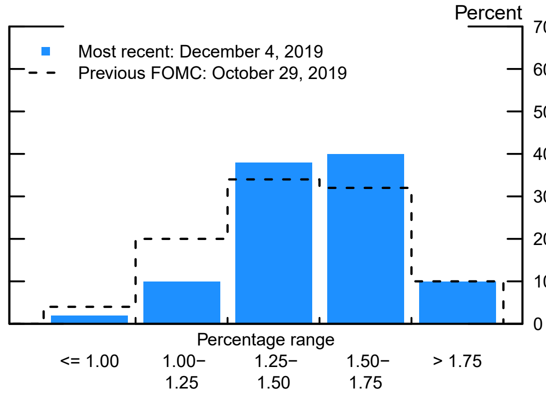
Alternatives

Figure 1: Market−Implied Probability Distribution of the Federal Funds Rate After December FOMC



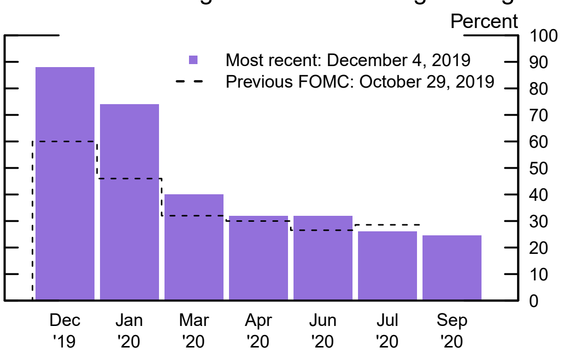
Note: Estimated from federal funds futures options, not adjusted for risk premiums. The distribution for January 2020 is used to provide a read on the distribution following the December FOMC meeting.
Source: CME Group; Board staff calculations.

Figure 2: Market−Implied Probability Distribution of the Federal Funds Rate After March FOMC



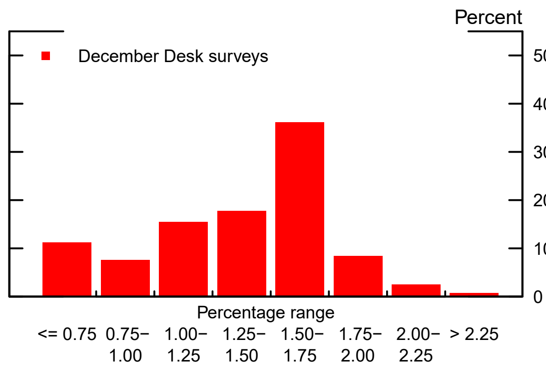
Note: Estimated from federal funds futures options, not adjusted for risk premiums. The distribution for April 2020 is used to provide a read on the distribution following the March FOMC meeting.
Source: CME Group; Board staff calculations.

Figure 3: Market−Implied Probability of the Federal Funds Rate Falling in the Current Target Range



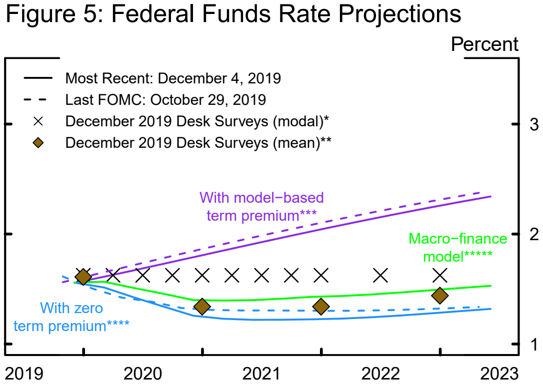
Note: Shows the probabilities of the federal funds rate falling between 1.50 percent and 1.75 percent after each FOMC meeting. Estimated from federal funds futures options, not adjusted for risk premiums.
Source: CME Group; Board staff calculations.

Figure 4: Desk Surveys Probability Distribution of the Federal Funds Rate, Year−End 2020



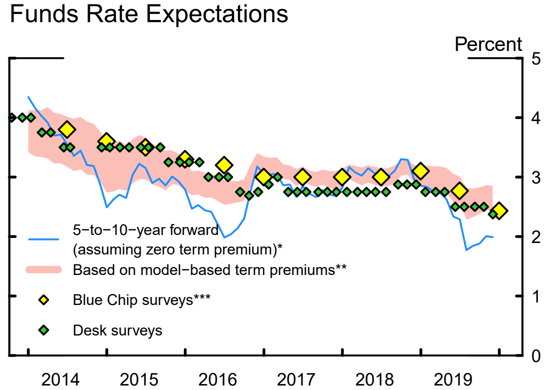
Note: Probabilities are the averages of the probabilities assigned by respondents to the Survey of Market Participants and Survey of Primary Dealers to different ranges of the federal funds rate at the end of 2020.
Source: FRBNY

Figure 5: Federal Funds Rate Projections



* Median of respondents' modal paths for the federal funds rate.
** Estimated from respondents' unconditional year−end probability distributions.
*** Adjusting for premiums using a term structure model maintained by Board staff.
**** Estimated using overnight index swap quotes with a spline approach and a term premium of zero basis points.
***** Macro−finance model path is estimated by averaging over regressions of term premiums on covariances between real and nominal variables based on Diercks and Carl (2019).
Source: Bloomberg; Federal Reserve Board staff estimates; FRBNY.

Figure 6: Measures of Longer−Run Federal Funds Rate Expectations



* Monthly average 5−to−10−year forward rate derived from prices of Treasury securities.
** Monthly average 5−to−10−year forward rate adjusted for four alternative model−based term premium estimates using Kim and Wright (2005), D'Amico, Kim, and Wei (2018), Kim and Priebsch (2019), and Meldrum (2019).
*** Most recent long−run survey value is from the December 2019 Blue Chip survey.
Note: Forward rates and term structure model estimates for December 2019 are based on values through December 4.
Source: Blue Chip; FRBNY; Federal Reserve Board staff estimates.

- Since the October FOMC meeting, Treasury yields have posted modest declines, with slightly larger movements occurring at the long end of the yield curve.
- On net, broad equity price indexes increased 2½ percent over the intermeeting period.
- Financing conditions for businesses and households remain supportive of spending and economic activity, on balance.
- Model-based measures of recession risks have fallen notably since the time of the October Tealbook. The recession-probability estimate arising from a model-averaging framework that uses a selection of both real and financial variables was 8 percent in the November Tealbook, compared with 22 percent in the October Tealbook.

• The staff projects annualized aggregate foreign growth in the second half of this year to be 1.3 percent—down from its pace in the first half, and ½ percentage point below the October forecast. The staff expects growth abroad to pick up to 2½ percent over the medium term. This projection is predicated on the assumptions that the global manufacturing slump will fade, trade and political tensions will ease somewhat, and accommodative policies will remain in place.

• The staff continues to judge that the risks to its outlook for U.S. real GDP growth are tilted to the downside over the next year, although to a lesser degree than in October. Trade policies and foreign economic developments are among the most salient risks.

THE CASE FOR ALTERNATIVE B

At the past three FOMC meetings, policymakers cited the implications of global developments for the U.S. economic outlook and muted inflation pressures as reasons for reducing the target range for the federal funds rate. Economic activity has been expanding at a moderate pace, despite weak global growth and the adverse effect of trade uncertainty on business fixed investment, exports, and manufacturing; the labor market remains strong; inflation, while continuing to run below 2 percent, has stabilized; and the downside risks to the economic outlook seem to have diminished somewhat. Policymakers may consequently assess that the recent adjustments to the target range are sufficient to support the Committee's objectives. In addition, they may view the current stance of monetary policy as well-calibrated to cushion the economy against adverse factors and risks and as likely to remain appropriate as long as incoming information about the economy remains broadly consistent with the current outlook.

Policymakers may see inflation rising to 2 percent over time and discern no unwelcome upward pressure on price inflation. They may note that with the unemployment rate projected to hover near 50-year lows, and after taking account of the lags in the effects of the accommodation provided over the course of the year, the current stance of policy is at a setting appropriate to support a sustained return of inflation to 2 percent.

When considering the risks to the outlook, policymakers may also note that the likelihood of recession in the next 12 months reported from various recession-probability models has come down significantly over this intermeeting period. Also, policymakers may observe that the inversion in the late summer of many portions of the yield curve, to which market commentary pointed as recession signal, has now ceased. They may see these developments as reinforcing their view that the stance of policy is currently appropriate—despite the asymmetric risks associated with the effective lower bound on the policy rate. However, if developments emerge that lead to a material reassessment of the economic outlook, the Committee may wish to indicate that it would respond accordingly. In particular, with the resolution of the risks weighing on certain sectors of the economy unclear, the Committee may also wish to indicate that it will continue to monitor the implications of incoming information for the economic outlook, explicitly referencing "global developments and muted inflation pressures."

If policymakers choose the policy action given in Alternative B, financial market responses to this decision would likely be relatively modest. Market prices, along with responses to the Desk's latest surveys of primary dealers and market participants indicate that investors are nearly certain that the target range for the federal funds rate will be left unchanged at the December meeting.

THE CASE FOR ALTERNATIVE A

Alternative A conveys a somewhat greater likelihood of an additional monetary policy easing in the future than Alternative B. Although Alternative A maintains the current target range for the federal funds rate, it conveys more concern about the outlook for inflation. In particular, it communicates a more downbeat interpretation of current measures of longer-term inflation expectations, and it highlights the fact that inflation continues to run below 2 percent and may remain below that level for longer than expected.

Policymakers may be particularly concerned about the ongoing weakness in inflation and inflation expectations, or view risks to the inflation outlook as significantly weighted to the downside. If so, they may deem it appropriate to state that "Indicators of longer-term inflation expectations remain low."

With inflation continuing to run persistently below the Committee's symmetric 2 percent objective, several survey-based measures of inflation expectations at or near the lower end of their historical ranges, and market-based measures of inflation compensation near multi-year lows, policymakers may be concerned that inflation expectations have already moved below levels consistent with the Committee's 2 percent objective. They may therefore see significant risks that inflation could fail to return to 2 percent on a sustained basis and so favor Alternative A, which states concern about "whether inflation will remain below 2 percent longer than expected."

Policymakers might also argue that inflation running modestly above 2 percent for a time is needed to re-center inflation expectations on the 2 percent objective. They may see accomplishing this re-centering before the next recession as particularly important: Anchoring inflation expectations more solidly at 2 percent would better enable monetary policy to provide accommodation in a future downturn. Policymakers may see the reason for this as twofold. First, keeping long-run inflation expectations at 2 percent would help prevent an inadvertent increase in the real interest rate that would otherwise occur if inflation expectations were to fall. Second, well anchored inflation expectations help keep nominal interest rates further away from the lower bound, thus preserving scope for the Committee to ease policy.

A statement such as Alternative A would likely be seen by market participants as implying a more accommodative path for the policy rate than had been anticipated. If market participants interpret Alternative A as expressing the Committee's desire to provide additional accommodation so as to raise inflation to 2 percent or above, then equity prices and inflation compensation would likely rise. However, if market participants predominantly interpreted Alternative A as amounting to a bleaker reading of the outlook for the economy than they had been expecting, equity prices would likely fall.

THE CASE FOR ALTERNATIVE C

Alternative C illustrates the approach the Committee could consider in circumstances in which the economy continues to perform well and the case for some reduction in the degree of monetary accommodation has materially strengthened. Alternative C thus signals that a rate hike is imminent.

Policymakers may note that many longer-term estimates of the real federal funds rate from time-series models and surveys currently range between 0.3 and 1.3 percent.[2] With real GDP growth continuing to run at or a bit above its potential rate, the labor market remaining strong, and inflation expected to rise to 2 percent, policymakers may wish to return policy to a more neutral stance over time.

Policymakers may judge that downside risks to the outlook are diminishing. The risk of a "no-deal" Brexit has declined considerably. While the news regarding trade negotiations has been mixed, on net, over the intermeeting period, discussions continued between the United States and China on a trade agreement and a near-term deal could reduce the associated trade uncertainty. Accordingly, to the extent that policymakers view the recent reductions in the target range for the federal funds rate as insuring against downside risks, a relatively more balanced outlook could suggest that some removal of accommodation may soon be appropriate. In addition, with the outlook for economic activity on a somewhat firmer footing, policymakers may judge that the risk of inflation remaining well below the 2 percent objective is not particularly high. They may see this

[2] For details see the exhibit titled "Estimates of the Equilibrium Real Federal Funds Rate in the Longer Run" in the "Monetary Policy Strategies" section of the November Tealbook A.

judgment as supported by the fact that the Federal Reserve Bank of Dallas' trimmed mean PCE measure of inflation has remained at 2 percent in recent months, and by readings on inflation expectations, which are little changed.

In addition, policymakers may regard persistently low interest rates as endangering continued financial stability. For example, they may stress that prices in equity and bond markets are near historical peaks, while valuation pressures in leveraged loan and commercial real estate markets remain high. As a result, they may judge that financial-stability considerations strengthen the case for removing over time the recently-added accommodation.

If policymakers see a growing likelihood of a reduction in the degree of policy accommodation, the characterization of the incoming economic data in paragraph 1 would presumably be an important means by which to signal that the economic outlook has changed. Furthermore, in such circumstances they may also assess that it is appropriate to signal that a "reduction in the degree of monetary accommodation may soon become appropriate." The Committee may judge that this kind of guidance is associated with a reduced risk of generating a policy surprise, while preserving optionality with regard to future rate hikes.

IMPLEMENTATION NOTE

Under any of the alternatives, the Committee would issue an implementation note that indicates no change in the Federal Reserve's administered rates, and a draft that so indicates appears on the following pages. As usual, struck-out text indicates language deleted from the October 30 implementation note, bold red underlined text indicates added language, and blue underlined text indicates links to websites.

Implementation Note for December 2019, All Alternatives

Release Date: December 11, 2019

Decisions Regarding Monetary Policy Implementation

The Federal Reserve has made the following decisions to implement the monetary policy stance announced by the Federal Open Market Committee in its statement on ~~October 30, 2019~~ **December 11, 2019**:

- The Board of Governors of the Federal Reserve System voted **[** unanimously **]** to ~~lower~~ **maintain** the interest rate paid on required and excess reserve balances ~~to~~ **at** 1.55 percent, effective ~~October 31, 2019~~ **December 12, 2019**.
- As part of its policy decision, the Federal Open Market Committee voted to authorize and direct the Open Market Desk at the Federal Reserve Bank of New York, until instructed otherwise, to execute transactions in the System Open Market Account in accordance with the following domestic policy directive:

  "Effective ~~October 31, 2019~~ **December 12, 2019**, the Federal Open Market Committee directs the Desk to undertake open market operations as necessary to maintain the federal funds rate in a target range of 1-1/2 to 1-3/4 percent. In light of recent and expected increases in the Federal Reserve's non-reserve liabilities, the Committee directs the Desk to ~~purchase~~ **continue purchasing** Treasury bills at least into the second quarter of ~~next year~~ **2020** to maintain over time ample reserve balances at or above the level that prevailed in early September 2019. The Committee also directs the Desk to ~~conduct~~ **continue conducting** term and overnight repurchase agreement operations at least through January of ~~next year~~ **2020** to ensure that the supply of reserves remains ample even during periods of sharp increases in non-reserve liabilities, and to mitigate the risk of money market pressures that could adversely affect policy implementation. In addition, the Committee directs the Desk to conduct overnight reverse repurchase operations (and reverse repurchase operations with maturities of more than one day when necessary to accommodate weekend, holiday, or similar trading conventions) at an offering rate of 1.45 percent, in amounts limited only by the value of Treasury securities held outright in the System Open Market Account that are available for such operations and by a per-counterparty limit of $30 billion per day.

  The Committee directs the Desk to continue rolling over at auction all principal payments from the Federal Reserve's holdings of Treasury securities and to continue reinvesting all principal payments from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities received during each calendar month. Principal payments from agency debt and agency mortgage-backed securities up to $20 billion per month will continue to be reinvested in Treasury securities to roughly match the maturity composition of Treasury securities outstanding; principal payments in excess of $20 billion per month will continue to be reinvested in agency mortgage-backed securities. Small deviations from these amounts for operational reasons are acceptable.

Alternatives

Alternatives

> The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed securities transactions."

- In a related action, the Board of Governors of the Federal Reserve System voted [unanimously] to approve ~~a 1/4 percentage point decrease in~~ **the establishment of** the primary credit rate ~~to~~ **at the existing level of** 2.25 percent~~, effective October 31, 2019~~. ~~In taking this action, the Board approved requests to establish that rate submitted by the Boards of Directors of the Federal Reserve Banks of Minneapolis and San Francisco.~~

This information will be updated as appropriate to reflect decisions of the Federal Open Market Committee or the Board of Governors regarding details of the Federal Reserve's operational tools and approach used to implement monetary policy.

More information regarding open market operations and reinvestments may be found on the Federal Reserve Bank of New York's website.

Balance Sheet and Income Projections

The staff has prepared projections of the Federal Reserve's balance sheet and the associated income statement that are consistent with the projections in Tealbook A. In comparison to the October Tealbook, the federal funds rate projection is revised down in the near term, while projections of longer-term interest rates are about unchanged.

Reserve balances. The path for reserves is largely unchanged relative to the October Tealbook. As of November 2019, the level of reserve balances stood at $1.55 trillion. Through mid-April 2020, purchases of Treasury bills and repo operations are assumed to keep reserves at or above $1.46 trillion, the average level that prevailed in early September (see the upper chart in the exhibit titled "SOMA Open Market Operations and Their Near-Term Effect on Reserve Balances").[1] From May 2020 onward, reserves are projected to grow in line with nominal GDP.[2]

Evolution of the SOMA portfolio. As of November 2019, about $3.7 trillion of securities are held in the SOMA portfolio, consisting of about $2.2 trillion of Treasury securities and $1.4 trillion of agency securities (see the exhibit titled "Federal Reserve Balance Sheet Month-end Projections—December Tealbook").[3] Consistent with the Committee's October 2019 Statement Regarding Monetary Policy Implementation, we assume that the Desk will continue to purchase Treasury bills at a pace of $60 billion per month until mid-April.[4] Thereafter, we assume that the SOMA portfolio continues to expand in order to accommodate trend increases in reserves and in other Federal Reserve

[1] Although a minimum level of $1.46 trillion of reserve balances is likely to ensure that they remain ample through mid-April 2020, the minimum level of reserves consistent with remaining in an ample-reserves regime is uncertain and will be reassessed as information accrues about banks' demand for reserve balances. These issues were discussed in the March 2019 FOMC memo, "Transitioning to an Ample Reserves Regime with Lower Reserves."

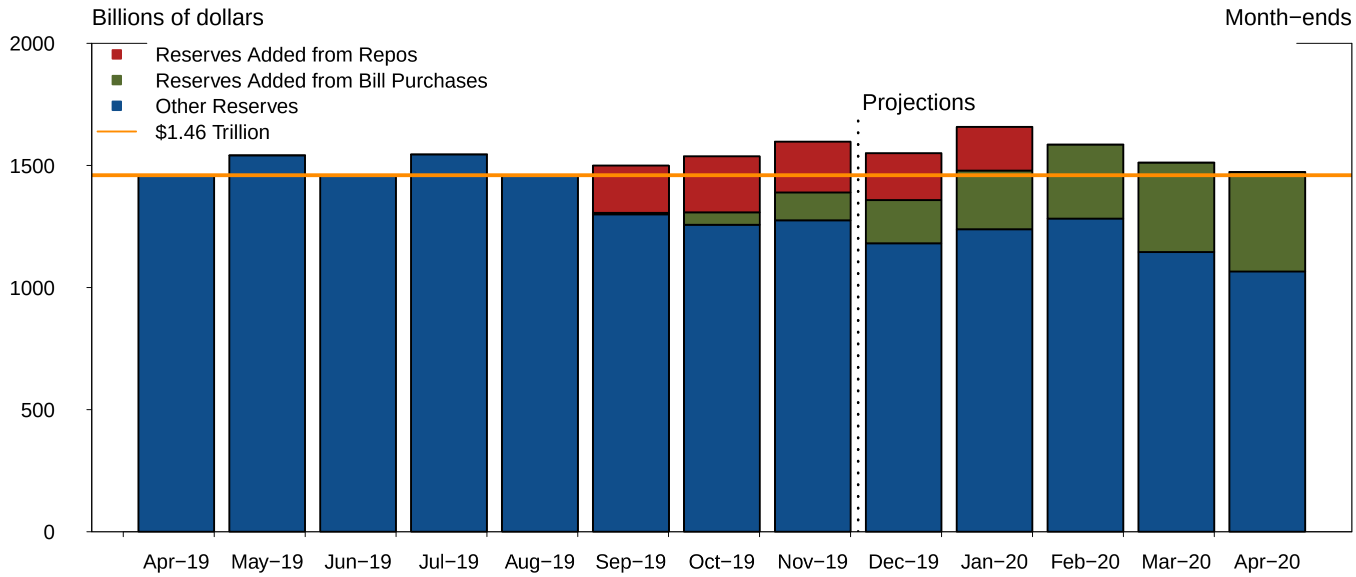
[2] We assume that liability items other than currency, reserves, and the TGA, such as the foreign repo pool and DFMU balances, grow in line with nominal GDP from the start of the projection period. The projection incorporates the staff's near-term forecast for continued repo operations through January 2020, and incorporates the staff's near-term forecast for TGA balances through April 2020. Thereafter, TGA balances are assumed to grow in line with nominal GDP.

[3] SOMA securities held outright include bills purchased for reserve management, but do not include securities held temporarily through the Desk's overnight repo operations.

[4] Median expectations from the Desk's December surveys were for bill purchases to continue at a pace of $60 billion per month through March, and then step down over the following three months to $20 billion in June.

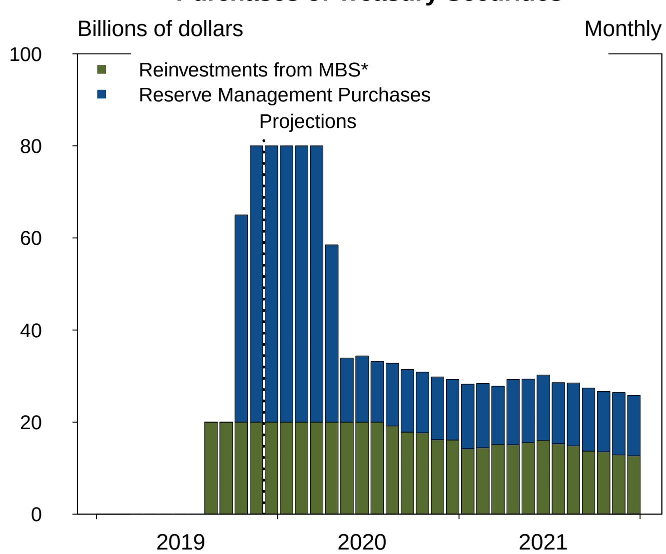
SOMA Open Market Operations and Their Near-Term Effect on Reserve Balances

Decomposing the Path of Reserve Balances

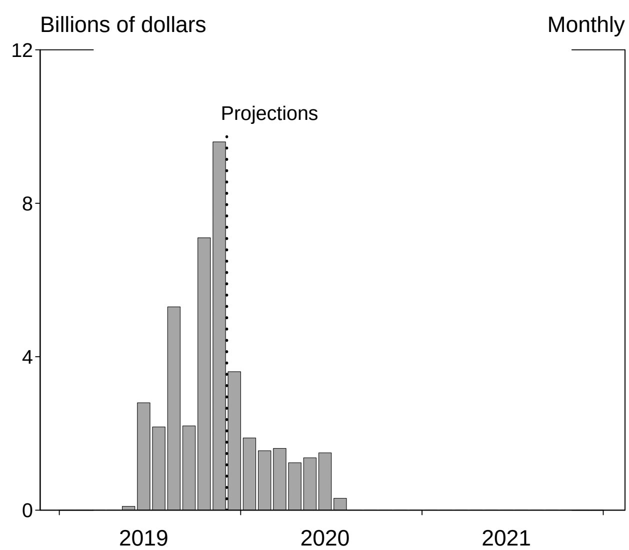


	Reserve Management Purchases of Treasury Securities		Reinvestments from Agency Securities* to Treasury Securities		Reinvestments from Agency Securities* to Agency MBS	
Date	**Period**	**Since Oct 2019**	**Period**	**Since Aug 2019**	**Period**	**Since Aug 2019**
2019: October	45.0	45.0	20.0	60.0	7.1	14.6
2019: November	60.0	105.0	20.0	80.0	9.6	24.2
2019: December	60.0	165.0	20.0	100.0	3.6	27.8
2020:Q1	180.0	345.0	60.0	160.0	5.0	32.9
2019	165.0	165.0	100.0	100.0	32.9	27.8
2020	327.2	492.2	227.0	327.0	9.5	37.3
2021	163.1	655.2	173.6	500.6	0.0	37.3
2022	164.3	819.5	142.6	643.2	0.0	37.3

Purchases of Treasury Securities



MBS Reinvestments*



* Principal payments from holdings of agency securities below $20 billion per month are reinvested into Treasury securities, while those above are reinvested into agency MBS.

Federal Reserve Balance Sheet
Month-end Projections – December Tealbook
(Billions of dollars)

	Historical*			Projections				
	Aug 2014	Sep 2017	Nov 2019	Dec 2019	Dec 2020	Dec 2022	Dec 2025	Dec 2030
Total assets	4,416	4,460	4,063	4,126	4,262	4,579	5,087	6,004
Selected assets								
Loans and other credit extensions**	2	6	0	0	0	0	0	0
Securities held outright	4,157	4,240	3,675	3,745	4,082	4,417	4,947	5,892
U.S. Treasury securities	2,437	2,465	2,249	2,339	2,896	3,548	4,403	5,663
Agency debt securities	42	7	2	2	2	2	2	2
Agency mortgage-backed securities	1,678	1,768	1,424	1,404	1,183	867	542	226
Unamortized premiums	209	162	126	125	115	96	73	44
Unamortized discounts	-19	-14	-13	-13	-11	-10	-9	-7
Total other assets	66	66	276	268	76	76	76	76
Total liabilities	4,360	4,419	4,024	4,086	4,222	4,536	5,037	5,941
Selected liabilities								
Federal Reserve notes in circulation	1,249	1,533	1,745	1,754	1,862	2,050	2,280	2,690
Reverse repurchase agreements	277	432	285	299	310	334	372	438
Deposits with Federal Reserve Banks	2,825	2,447	1,987	2,029	2,045	2,147	2,380	2,807
Reserve balances held by depository institutions	2,762	2,190	1,551	1,550	1,576	1,642	1,818	2,143
U.S. Treasury, General Account	49	176	371	413	401	432	480	566
Other deposits	15	82	65	66	69	74	82	97
Earnings remittances due to the U.S. Treasury	3	2	2	0	0	0	0	0
Total Federal Reserve Bank capital***	56	41	39	39	40	43	50	63

Source: Federal Reserve H.4.1 daily data and staff calculations.
Note: Components may not sum to totals due to rounding.
*August 2014 corresponds to the peak month-end value of reserve balances; September 2017 corresponds to the last month-end before the initiation of the normalization program; November 2019 is the most recent historical value
**Loans and other credit extensions includes discount window credit; central bank liquidity swaps; and net portfolio holdings of Maiden Lane LLC.
***Total capital includes capital paid-in and capital surplus accounts.

liabilities at a pace that is roughly in line with nominal GDP growth (see the exhibit titled "Total Assets and Selected Balance Sheet Items").[5] As a result of these assumptions, and as in the previous Tealbook, the size of the balance sheet as a share of nominal GDP remains near its current level of 19 percent through the projection horizon.

The weighted-average duration of the SOMA Treasury portfolio is currently about 6.5 years. As shown in the exhibit "Projections for the Characteristics of SOMA Treasury Securities Holdings," the path for duration is similar to that in the October projection. Duration is projected to decline to about 6 years by March 2020 as the share of bills increases to 14 percent of the SOMA Treasury portfolio. The decline in duration then decelerates, reflecting the slower pace of bill purchases.[6] All told, the SOMA Treasury portfolio attains its assumed longer-run composition, consisting of one-third Treasury bills, in 2025:Q3, the same as in the October Tealbook.

Principal payments from holdings of agency securities are projected to exceed the $20 billion cap on reinvestment into Treasury securities through the middle of 2020, and fall just under $20 billion in each month for the remainder of the year (see the table and lower charts in the exhibit titled "SOMA Open Market Operations and Their Near-Term Effect on Reserve Balances"). Accordingly, reinvestments of agency MBS into MBS are expected to continue through mid-2020. The share of agency MBS in the SOMA portfolio, which currently stands at 39 percent, is expected to decline to about 11 percent by the end of 2025. In comparison to the October Tealbook, agency MBS holdings are expected to decline at a faster rate after 2021 (see the exhibit titled "Total Assets and Selected Balance Sheet Items"), reflecting higher forecasted prepayments.[7]

[5] We assume that rollovers of maturing Treasury securities will continue to be directed to newly issued securities at Treasury auctions in proportion to the maturity distribution of Treasury debt issued at the time of rollover.

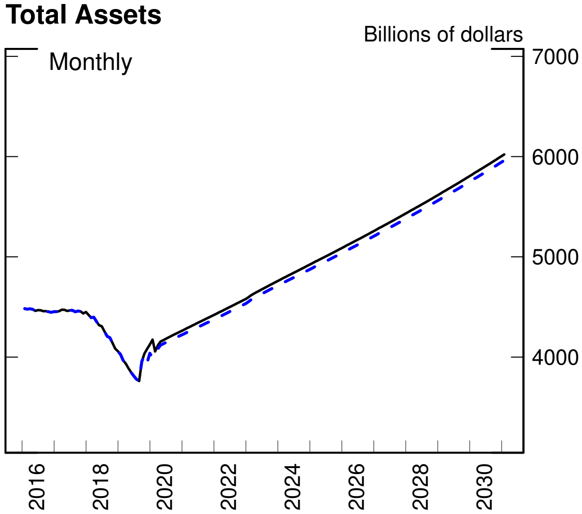
[6] We continue to assume that purchases aimed at accommodating trend growth in Federal Reserve liabilities will be directed entirely towards Treasury bills until bills constitute approximately one-third of the Federal Reserve's portfolio of Treasury securities, close to the pre-crisis composition. Once that composition is reached, further purchases aimed at accommodating growth in Federal Reserve liabilities are assumed to reflect the projected maturity distribution of Treasury securities outstanding at that time.

[7] The higher forecasted prepayments are the result of switching in this Tealbook to a new model for forecasting prepayments. The new model includes additional explanatory variables and an improved specification to better account for some of the drivers of prepayment activity such as seasonality and refinancing incentives over time. It is also estimated over a longer sample period with CUSIP-level data to better characterize recent changes in mortgage markets and longer-term trends in housing markets. The new model reduces out-of-sample forecast errors, as the previous model tended to underestimate prepayment activity.

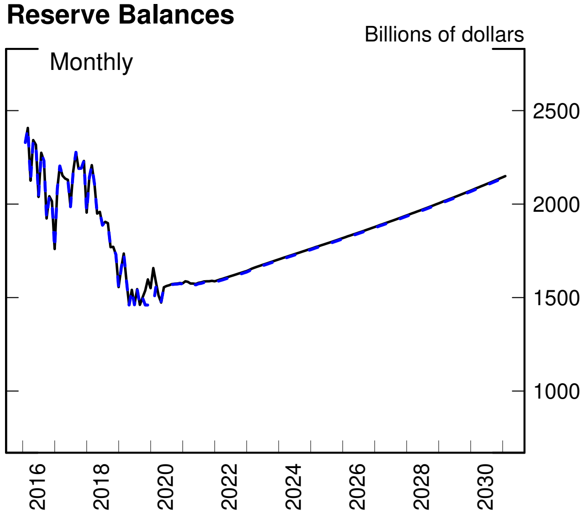
Total Assets and Selected Balance Sheet Items

December Tealbook baseline — October Tealbook baseline

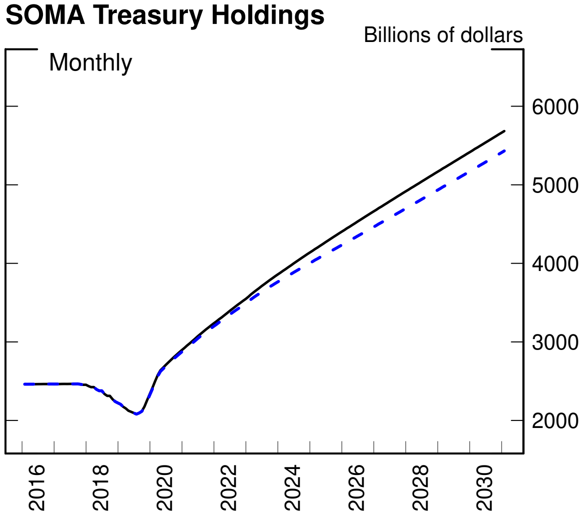
Total Assets



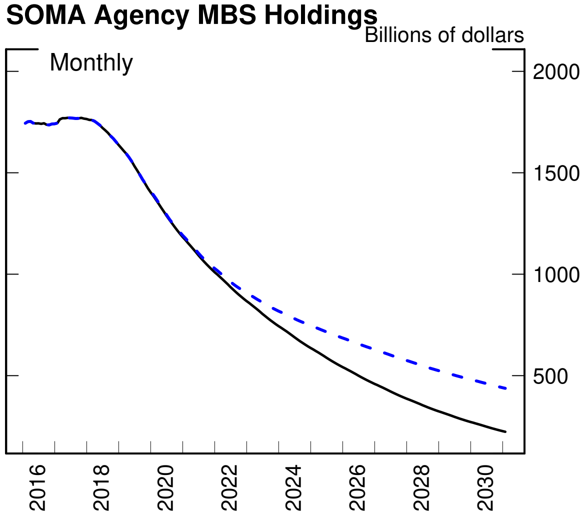
Reserve Balances



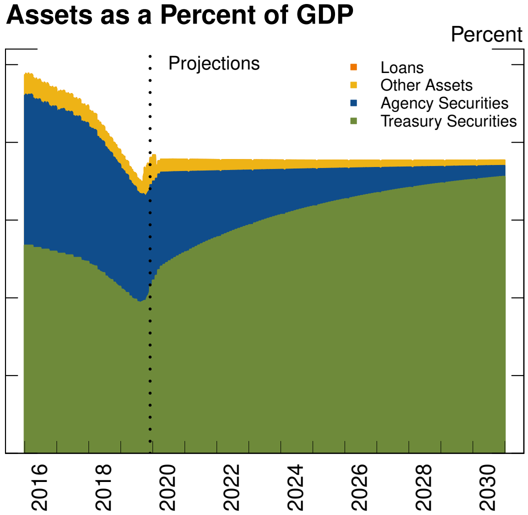
SOMA Treasury Holdings



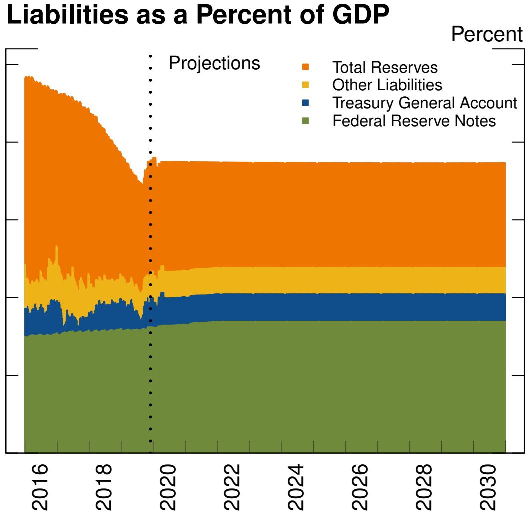
SOMA Agency MBS Holdings



Assets as a Percent of GDP



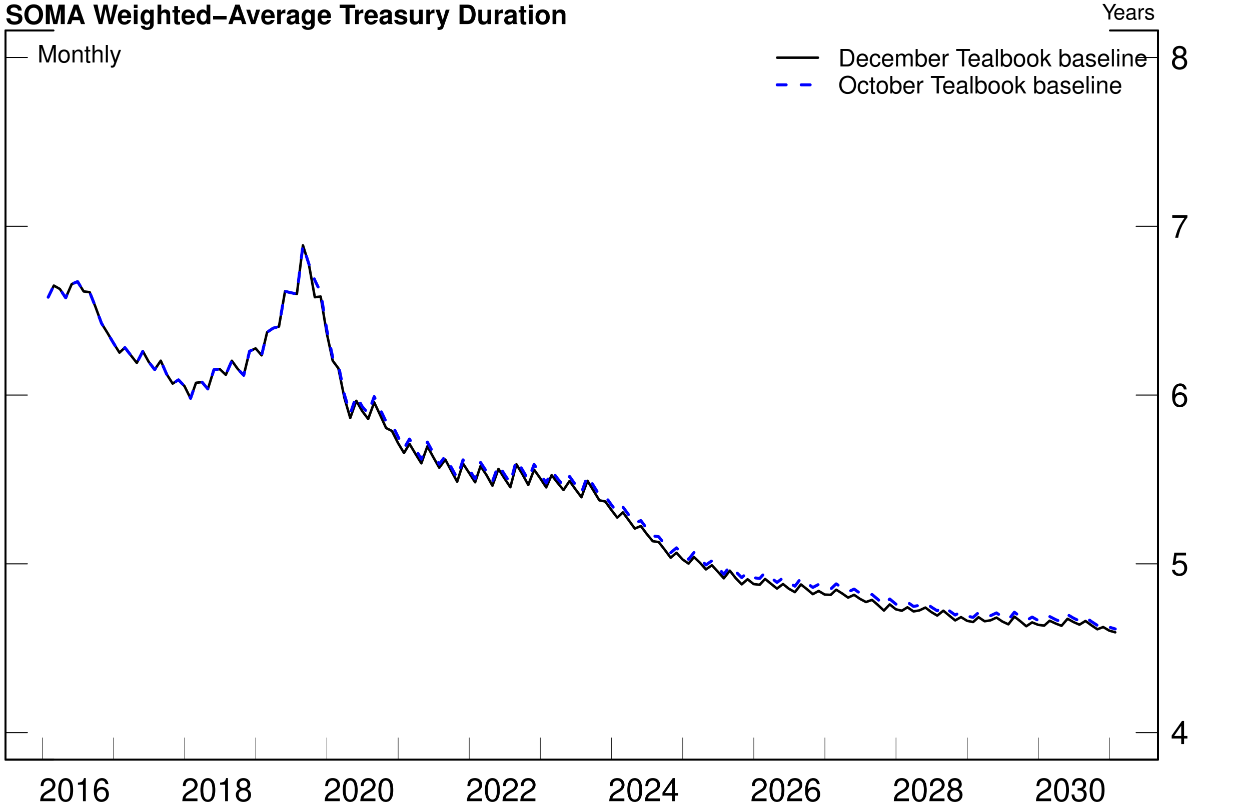
Liabilities as a Percent of GDP



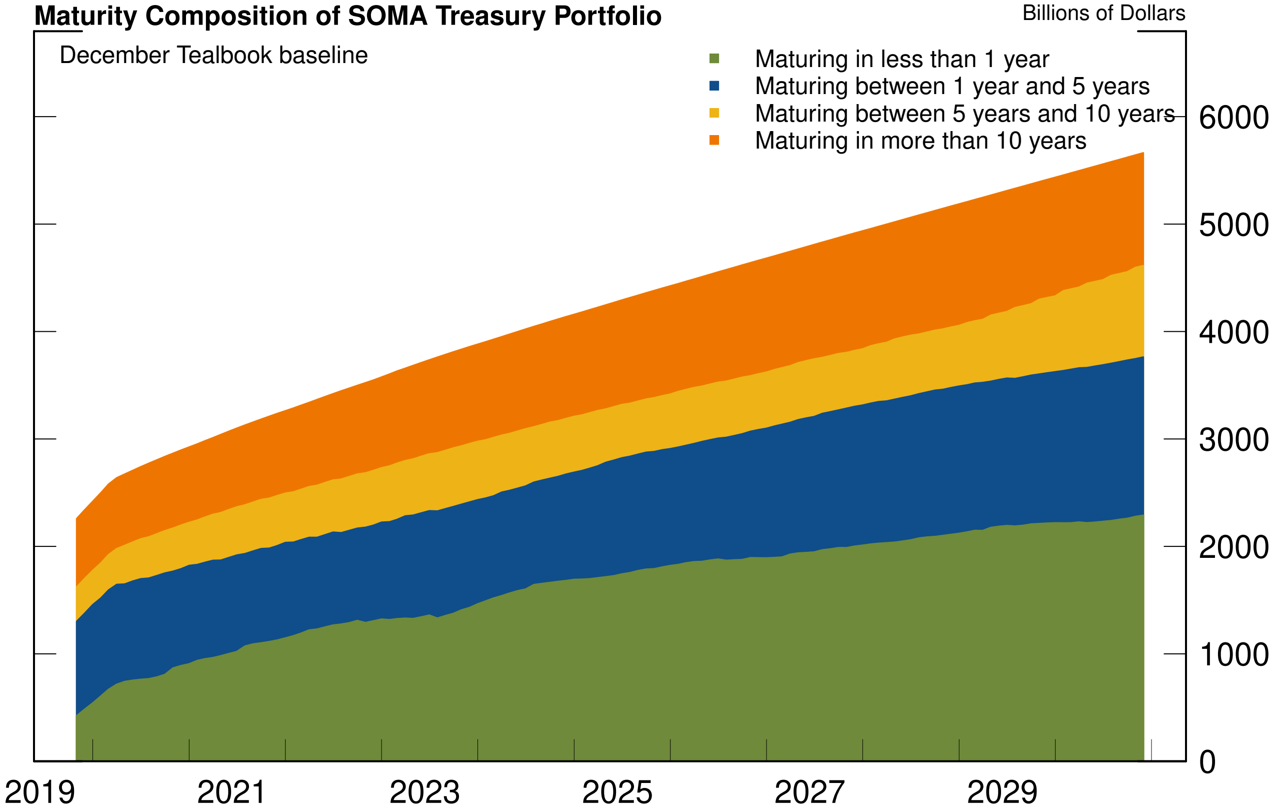
Balance Sheet & Income

Projections for the Characteristics of SOMA Treasury Securities Holdings

SOMA Weighted–Average Treasury Duration



Maturity Composition of SOMA Treasury Portfolio



Correspondingly, the path for SOMA Treasury holdings has been revised upwards as these additional principal payments from MBS holdings are reinvested into Treasury securities.[8]

Unrealized gains or losses. In comparison to the October Tealbook, the path for the unrealized position of the SOMA portfolio is largely unchanged (see the two bottom charts in the exhibit titled "Income Projections"). The SOMA portfolio was in a net unrealized gain position of about $195 billion at the end of October. With longer-term interest rates projected to rise, the unrealized gain position is expected to decline over the next few years before turning into an unrealized loss position by 2022:Q4. The position bottoms out at an unrealized loss of around $40 billion in 2025:Q4.[9]

Total Term Premium Effect. As shown in the table "Projections for the 10-Year Treasury Total Term Premium Effect (TTPE)," the securities held in the SOMA portfolio are estimated to be reducing the term premium embedded in the 10-year Treasury yield by 136 basis points in the current quarter, about the same as in the October Tealbook.[10] Over the projection horizon, the magnitude of the downward pressure exerted on the term premium in longer-term Treasury yields is estimated to diminish gradually, at an average pace of about 2.5 basis points per year. The gradual decline reflects the decrease in the duration of the Federal Reserve's securities holdings over the projection horizon. At the end of 2030, the total term premium effect of the SOMA portfolio on the 10-year Treasury yield is estimated to be about 110 basis points. Over the projection horizon, the SOMA portfolio is expected to exert slightly less downward pressure on Treasury term premiums than was projected in October.

Remittances. Remittances to the Treasury are projected to decline to $54 billion this year from $65 billion in 2018 (see the middle left chart in the exhibit titled "Income Projections"). This reduction mainly reflects lower interest income resulting from the reduction in SOMA securities holdings through September 2019. Total interest expense

[8] We assume that reinvestments of principal payments from agency securities holdings into Treasury securities continue to be spread across the maturity spectrum of outstanding Treasury securities for the entire projection period.

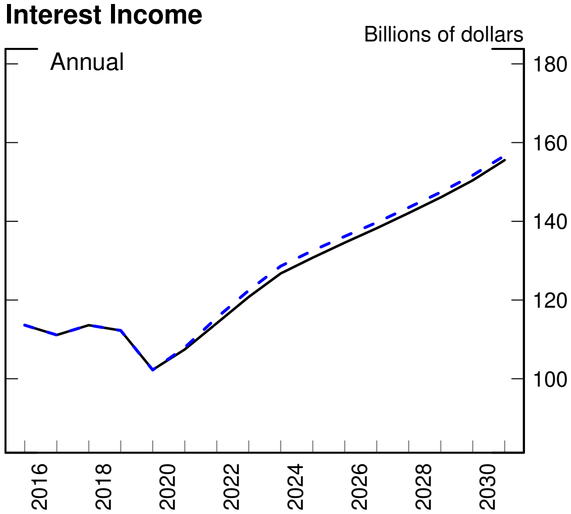
[9] See the Tealbook B box titled "What Does It Mean for the SOMA Portfolio to be in an 'Unrealized Loss' Position?" (June 2018) for an explanation of the accounting concepts underlying unrealized and realized gain and loss positions, as well as their implications for the Federal Reserve's ability to meet its obligations.

[10] The overall 10-year Treasury term premium is assumed to gradually approach its long-run value of 50 basis points.

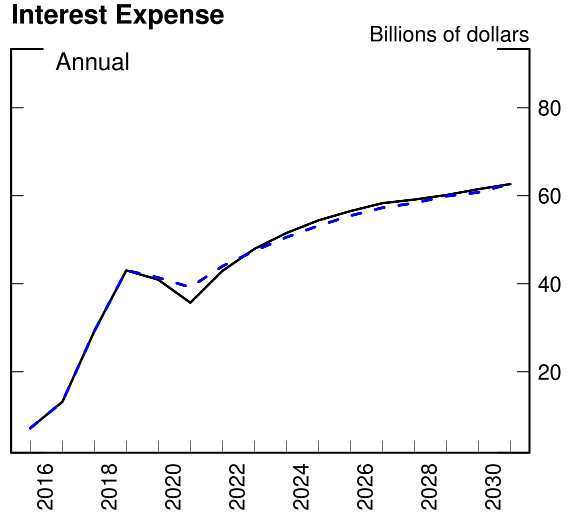
Income Projections

December Tealbook baseline — October Tealbook baseline

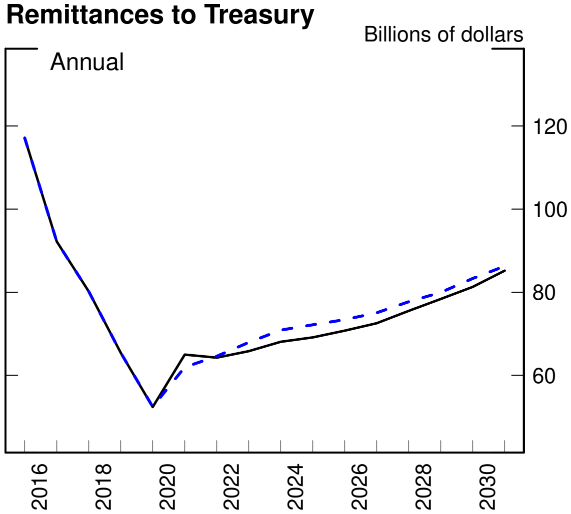
Interest Income



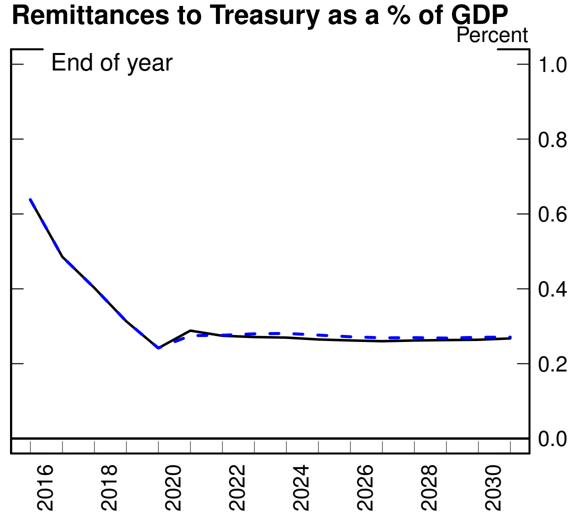
Interest Expense



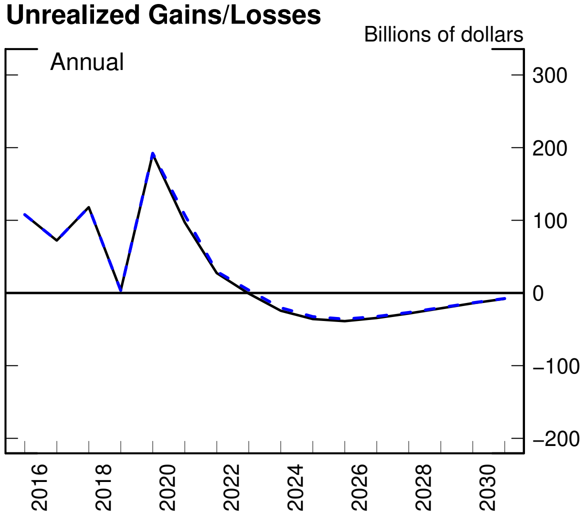
Remittances to Treasury



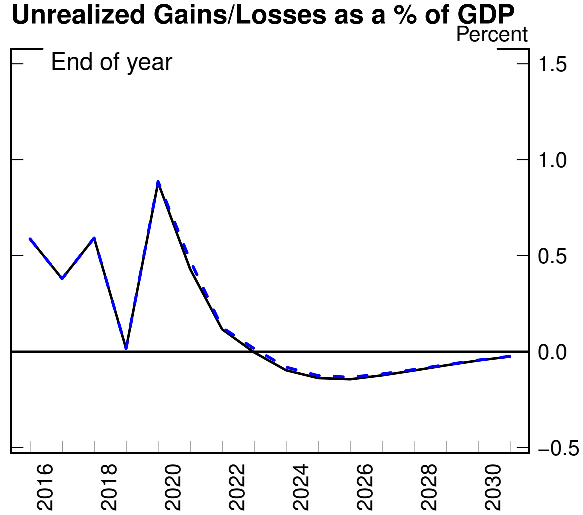
Remittances to Treasury as a % of GDP



Unrealized Gains/Losses



Unrealized Gains/Losses as a % of GDP



Balance Sheet & Income

Projections for the 10-Year Treasury Total Term Premium Effect (TTPE)
(Basis Points)

Date	December Tealbook	October Tealbook
Quarterly Averages		
2019:Q4	-136	-137
2020:Q1	-135	-136
Q2	-134	-135
Q3	-133	-135
Q4	-132	-134
2021:Q4	-129	-131
2022:Q4	-126	-128
2023:Q4	-122	-124
2024:Q4	-119	-122
2025:Q4	-117	-120
2026:Q4	-116	-118
2027:Q4	-114	-116
2028:Q4	-113	-115
2029:Q4	-111	-113
2030:Q4	-110	-111

is projected to be $41 billion this year, slightly lower than in 2018.[11] Remittances are expected to increase to $65 billion next year, and remain roughly flat through 2022. Remittances are then expected to increase for the rest of the projection period, reflecting higher net interest income associated with a growing balance sheet, as yields on longer-term securities in the SOMA portfolio exceed the rate paid on reserve balances. In comparison with the October Tealbook, the projected path for remittances is slightly higher through 2020, largely reflecting the revised path for interest expense tied to the downward revision in the federal funds rate path. Thereafter, the path for remittances is projected to be slightly lower than in the previous Tealbook.

[11] We continue to assume that the FOMC will set a 25 basis point-wide target range for the federal funds rate throughout the projection period. Consistent with the FOMC's September 2019 Implementation Note, we assume that the IOER rate will be set 20 basis points below the top of the target range, and the offering rate on overnight RRPs will be set 5 basis points below the bottom of the range for the rest of the projection period.

Abbreviations

ABS	asset-backed securities
AFE	advanced foreign economy
BEA	Bureau of Economic Analysis, Department of Commerce
BHC	bank holding company
CDS	credit default swaps
CFTC	Commodity Futures Trading Commission
C&I	commercial and industrial
CLO	collateralized loan obligation
CMBS	commercial mortgage-backed securities
CPI	consumer price index
CRE	commercial real estate
DEDO	section in Tealbook A: "Domestic Economic Developments and Outlook"
Desk	Open Market Desk
DFMU	Designated Financial Market Utilities
ECB	European Central Bank
EFFR	effective federal funds rate
ELB	effective lower bound
EME	emerging market economy
EU	European Union
FAST Act	Fixing America's Surface Transportation Act
FDIC	Federal Deposit Insurance Corporation
FOMC	Federal Open Market Committee; also, the Committee
GCF	general collateral finance
GDI	gross domestic income
GDP	gross domestic product
GSIBs	globally systemically important banking organizations
HQLA	high-quality liquid assets
IOER	interest on excess reserves

ISM	Institute for Supply Management
LIBOR	London interbank offered rate
LSAPs	large-scale asset purchases
MBS	mortgage-backed securities
MEP	Maturity Extension Program
MMFs	money market funds
NBER	National Bureau of Economic Research
NI	nominal income
NIPA	national income and product accounts
OIS	overnight index swap
ON RRP	overnight reverse repurchase agreement
PCE	personal consumption expenditures
QS	Quantitative Surveillance
repo	repurchase agreement
RMBS	residential mortgage-backed securities
RRP	reverse repurchase agreement
SCOOS	Senior Credit Officer Opinion Survey on Dealer Financing Terms
SEP	Summary of Economic Projections
SFA	Supplemental Financing Account
SLOOS	Senior Loan Officer Opinion Survey on Bank Lending Practices
SOMA	System Open Market Account
TBA	to be announced (for example, TBA market)
TCJA	Tax Cuts and Jobs Act of 2017
TGA	U.S. Treasury’s General Account
TIPS	Treasury inflation-protected securities
TTPE	Total Term Premium Effect
WAM	Weighted Average Maturity
ZLB	zero lower bound