Prefatory Note

The attached document represents the most complete and accurate version available based on original files from the FOMC Secretariat at the Board of Governors of the Federal Reserve System.

Please note that some material may have been redacted from this document if that material was received on a confidential basis. Redacted material is indicated by occasional gaps in the text or by gray boxes around non-text content. All redacted passages are exempt from disclosure under applicable provisions of the Freedom of Information Act.

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Report to the FOMC on Economic Conditions and Monetary Policy

Book B

Monetary Policy Alternatives

July 25, 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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Alternatives

Monetary Policy Alternatives

The alternative policy statements presented below offer a range of options for the stance and likely near-term path of monetary policy. Alternative B points to the implications of global developments for the economic outlook, along with muted inflation pressures, as reasons for easing the stance of monetary policy at this meeting. Under Alternative B, the Committee would lower the target range for the federal funds rate by ¼ percentage point, and would note that 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 remain the most likely outcomes. The Committee would continue to signal its intention to act as appropriate to sustain these outcomes. Finally, the Committee would announce its decision to conclude the reduction of the Federal Reserve's aggregate securities holdings in August.

Alternative A gives a similar assessment of the incoming data to that in Alternative B, but acknowledges that indicators of longer-term inflation expectations remain low. It describes the view that inflation running persistently below 2 percent, in addition to the implications of global developments for the economic outlook, call for a larger policy response in July. Specifically, under this alternative, policymakers would lower the target range for the federal funds rate by ½ percentage point and provide a strong signal that additional easing is likely. With this easing, alongside a statement of the Committee's preparedness to make further adjustments to the target range for the federal funds rate, policymakers would maintain the positive economic outlook that the Committee articulated in June. Under Alternative A, the Committee would also announce the conclusion of the reduction of the Federal Reserve's securities holdings.

Alternative C maintains the current policy stance and repeats the policy message associated with the June FOMC meeting. In particular, it continues to indicate that the Committee views sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective as the most likely outcomes with the current policy stance, while acknowledging that uncertainties about this outlook remain elevated.

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

- The assessment of the incoming data:
  - Alternatives B and C share the same characterization of the incoming data. Both alternatives continue to portray the labor market as strong, while noting that the unemployment rate remains low and that average job gains in recent months have been solid. Although both alternatives describe economic growth as "moderate" or "solid," (pending Friday's GDP release) they acknowledge recent divergent developments in household and business spending by observing that "although growth of household spending has picked up from earlier in the year, growth of business fixed investment has been soft." Both alternatives note that "overall inflation and inflation for items other than food and energy are running below 2 percent," and that "market-based measures of inflation compensation remain low," while "survey-based measures of longer-term inflation expectations are little changed."
  - Alternative A differs in its description of incoming information from Alternatives B and C by giving a more general characterization of indicators of inflation expectations. Under Alternative A, the Committee would point out that, "On balance, indicators of longer-run inflation expectations remain low."
- The outlook for economic activity and inflation:
  - Under all three alternatives, the modal outlook for economic activity and inflation is unchanged from that conveyed in the June FOMC statement. However, to support the outcomes of "sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective," the alternatives convey different paths for the federal funds rate. Alternative C also notes that the uncertainties about this outlook remain elevated.
- For the current policy decision and the outlook for policy:
  - Alternative B lowers the target range for the federal funds rate by ¼ percentage point, while Alternative A lowers the target range by ½ percentage point. Alternatives A and B also announce the Committee's decision to "conclude the reduction of its aggregate securities holdings in the

System Open Market Account in August, two months earlier than previously indicated."

- Regarding the outlook for policy, Alternatives B and C continue to state that the Committee "will act as appropriate to sustain the expansion, with a strong labor market and inflation near its symmetric 2 percent objective." In contrast, Alternative A states that the Committee is "prepared to make further adjustments in the target range for the federal funds rate" to achieve its objectives.

Alternatives

JUNE 2019 FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in May indicates that the labor market remains strong and that economic activity is rising at a moderate rate. Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Although growth of household spending appears to have picked up from earlier in the year, indicators of business fixed investment have been soft. 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 have declined; 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 support of these goals, the Committee decided to maintain the target range for the federal funds rate at 2-1/4 to 2-1/2 percent. The Committee continues to view sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective as the most likely outcomes, but uncertainties about this outlook have increased. In light of these uncertainties and muted inflation pressures, the Committee will closely monitor the implications of incoming information for the economic outlook and will act as appropriate to sustain the expansion, with a strong labor market and inflation near its symmetric 2 percent objective.

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.

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PRELIMINARY DRAFT OF ALTERNATIVE A FOR JULY 2019

1. Information received since the Federal Open Market Committee met in ~~May~~ **June** indicates that the labor market remains strong and that economic activity ~~is~~ **has been** rising at a **[** moderate **| solid]** rate. Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Although growth of household spending ~~appears to have~~ **has** picked up from earlier in the year, ~~indicators~~ **growth** of business fixed investment ~~have~~ **has** been soft. 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 have declined; survey-based measures of longer-term inflation expectations are little changed.~~ **On balance, 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 ~~support of these goals~~ **light of the implications of global developments for the economic outlook as well as inflation running persistently below 2 percent**, the Committee decided to ~~maintain~~ **lower** the target range for the federal funds rate ~~at~~ **to 1-3/4 to 2** ~~2-1/4 to 2-1/2~~ 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 ~~as~~ **remain** the most likely outcomes~~, but uncertainties about this outlook have increased~~. ~~In light of these uncertainties and muted inflation pressures,~~ The Committee will closely monitor the implications of incoming information for the economic outlook and ~~will act as appropriate~~ **is prepared to make further adjustments in the target range for the federal funds rate** to sustain the expansion, with a strong labor market and inflation near its symmetric 2 percent objective.

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.

4. **The Committee will conclude the reduction of its aggregate securities holdings in the System Open Market Account in August, two months earlier than previously indicated. The Committee decided to maintain its securities holdings while it is providing accommodation through lowering the target range for the federal funds rate.**

Alternatives

PRELIMINARY DRAFT OF ALTERNATIVE B FOR JULY 2019

1. Information received since the Federal Open Market Committee met in ~~May~~ **June** indicates that the labor market remains strong and that economic activity ~~is~~ **has been** rising at a **[** moderate **| solid]** rate. Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Although growth of household spending ~~appears to have~~ **has** picked up from earlier in the year, ~~indicators~~ **growth** of business fixed investment ~~have~~ **has** been soft. 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 ~~have declined~~ **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 ~~support of these goals~~ **light of the implications of global developments for the economic outlook as well as muted inflation pressures**, the Committee decided to ~~maintain~~ **lower** the target range for the federal funds rate ~~at~~ **to 2 to** 2-1/4 ~~to 2-1/2~~ 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 ~~as~~ **remain** the most likely outcomes~~, but uncertainties about this outlook have increased~~. ~~In light of these uncertainties and muted inflation pressures,~~ The Committee will closely monitor the implications of incoming information for the economic outlook and will act as appropriate to sustain the expansion, with a strong labor market and inflation near its symmetric 2 percent objective.

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.

4. **The Committee will conclude the reduction of its aggregate securities holdings in the System Open Market Account in August, two months earlier than previously indicated. The Committee decided to maintain its securities holdings while it is providing accommodation through lowering the target range for the federal funds rate.**

Alternatives

Preliminary Draft of Alternative C for July 2019

1. Information received since the Federal Open Market Committee met in ~~May~~ **June** indicates that the labor market remains strong and that economic activity ~~is~~ **has been** rising at a **[** moderate **| solid]** rate. Job gains have been solid, on average, in recent months, and the unemployment rate has remained low. Although growth of household spending ~~appears to have~~ **has** picked up from earlier in the year, ~~indicators~~ **growth** of business fixed investment ~~have~~ **has** been soft. 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 ~~have declined~~ **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 support of these goals, the Committee decided to maintain the target range for the federal funds rate at 2-1/4 to 2-1/2 percent. The Committee continues to view sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective as the most likely outcomes, but uncertainties about this outlook ~~have increased~~ **remain elevated**. In light of these uncertainties and muted inflation pressures, the Committee will closely monitor the implications of incoming information for the economic outlook and will act as appropriate to sustain the expansion, with a strong labor market and inflation near its symmetric 2 percent objective.

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 staff estimates that real GDP growth slowed from about 3 percent in the first quarter to 2½ percent in the second, despite a strong rebound in consumer spending. Growth of business investment has slowed notably, and forward-looking indicators of investment remain downbeat. The staff projects that real GDP growth will slow further to a 1¾ percent pace in the second half of the year as government spending growth steps down from its temporarily-high second-quarter rate and business investment remains sluggish amid ongoing concerns about trade tensions and global growth. Economic growth is projected to slow over the next several years, largely reflecting the waning effects of fiscal policy impetus. In addition, the staff anticipates that concerns about trade policy and global growth will continue to weigh on aggregate demand.
- Available data indicate that the labor market continued to tighten so far this year but at a more gradual pace than in 2018.
    - Payrolls rose 224,000 in June, and gains averaged 171,000 per month over the past three months, well above the pace that the staff estimates to be consistent with no change in resource utilization. With GDP projected to decelerate over the medium term, the staff expects payroll gains to slow.
    - The unemployment rate ticked up 0.1 percentage point to 3.7 percent in June, and staff projects that it will remain at this level through the end of 2019. The labor force participation rate edged up to 62.9 percent in June.
    - Average hourly earnings rose 3.1 percent over the 12 months ending in June, and are projected to continue to grow at a similar pace over the coming months. This rate of growth is higher than in previous years, but it has softened somewhat in recent months, even in the face of strong labor utilization.
- Despite the unemployment rate having run at or below 4 percent for well over a year, there are few signs of upward pressure on inflation. Headline inflation has continued to run below the Committee's symmetric 2 percent objective; core PCE inflation has also been below 2 percent. Inflation is expected to move up later this year, as the effects of idiosyncratic and temporary factors that have held down inflation dissipate.
    - The staff estimates that the 12-month change in core PCE prices increased from 1.5 percent in March to 1.7 percent in June. The staff projects this measure of inflation to rise to 1.9 percent in August and remain at this level

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over the forecast horizon. Total PCE price inflation is estimated at 1.5 percent in June and is forecast to move up through the second half of the year to 1.8 percent in December, reflecting both the anticipated increase in core inflation and an expected acceleration in food prices over the second half of the year. With energy prices expected to edge down over the forecast period, total PCE price inflation is projected to run just a little below the core rate.

- Survey-based measures of longer-term inflation expectations are little changed since the June FOMC meeting and generally remain near the lower end of their historical ranges. Market-based measures of inflation compensation moved up but remain below their levels earlier this year.

- Investor sentiment towards risky assets improved in recent months, largely reflecting expectations of more-accommodative monetary policy. Equity prices increased and credit spreads narrowed modestly. On net, Treasury yields were little changed over the intermeeting period but remain well below levels seen prior to May.
- Although the staff expects foreign economic growth to edge up over the second half of the year from its very subdued pace earlier this year, it is not clear that the global economy has made it out of its soft patch. In response, some foreign central banks have eased their policy stance, while others have indicated that they are poised to do so.
- The staff continues to judge that the risks to its outlook for growth are tilted to the downside over the next year, as well as further out. Uncertainties related to trade policies, Brexit negotiations, and foreign economic developments—along with the potential for adverse reactions in financial markets to these risks—could be having significant negative effects on U.S. economic activity.

THE CASE FOR ALTERNATIVE B

Although policymakers may have seen that the case for a somewhat more accommodative monetary policy had strengthened already at the time of the June meeting, they decided not to adjust the policy stance at that time, preferring instead to signal their willingness to act as appropriate while awaiting the arrival of additional information. Since then, they might have reached the judgment that global developments—including concerns about global growth and ongoing uncertainties around trade policies—are continuing to weigh on the U.S. economic outlook. At the same time, with inflation pressures still muted, and in light of continued low readings on indicators of longer-term inflation expectations, policymakers may be concerned about inflation failing to return to the Committee's symmetric 2 percent objective on a sustained basis. They may also judge that, in the face of these challenges, the economic outlook has been supported by a notable easing in financial conditions over recent months, in response to communications by the Federal Reserve and other central banks. In these circumstances, policymakers may determine that a modest easing in the stance of monetary policy is appropriate.

Under Alternative B, policymakers would communicate that, "in light of the implications of global developments for the economic outlook as well as muted inflation pressures," the Committee would lower the target range for the federal funds rate to 2 to 2-1/4 percent. Alternative B also announces that the reduction in the size of the Federal Reserve's securities holdings will end in August, two months sooner than previously indicated. Although the economic effects of ending balance sheet runoff at the beginning of August, as opposed to the end of September, are estimated to be very minor because the amount of additional reinvestments is small, policymakers may view this step as warranted to avoid being perceived as having their policy tools work in opposite directions and to bypass the associated communications challenges.

Policymakers may view recent developments and incoming data as evidence that concerns about global growth and ongoing trade uncertainty are weighing on the U.S. economic outlook. Although there has been a rebound in consumer spending growth from its lackluster pace earlier this year, the growth of business fixed investment has slowed to a standstill, while manufacturing production remains weak. The softness in business fixed investment and manufacturing, if it continues, could result in a further slowdown in economic growth. Although policymakers may see continued strong economic conditions and a gradual rise of inflation to 2 percent as the most likely outcomes, they might judge that these outcomes are predicated on a somewhat lower path for the policy rate.

Policymakers may judge that there are no discernible upward pressures on inflation despite the fact that labor market conditions remain strong—including the very low unemployment rate, solid nominal wage growth, and the fact that job gains have been solid, on average, in recent months. In the June Summary of Economic Projections, while almost all participants project the unemployment rate to remain below their estimates of its longer-run level, they generally do not expect high levels of labor utilization to be associated with notable upward pressure on inflation.

Even though the latest monthly data on consumer prices have been firmer than readings from earlier in the year, inflation has been running below the Committee's 2 percent objective. Additionally, inflation pressures are muted, and indicators of longer-term inflation expectations remain low. Policymakers may judge that the continued shortfall of inflation could result in a softening of inflation expectations and could slow the sustained return of inflation to the Committee's 2 percent objective. Therefore, a somewhat more accommodative monetary policy stance, along the lines of Alternative B, would help to support inflation expectations and promote a return of inflation to the 2 percent objective.

Policymakers may also view the risks to the outlook for economic activity and inflation as weighted to the downside. In particular, they may be concerned that trade policies, Brexit negotiations, and foreign economic developments—along with financial market reactions to these ongoing developments—could move in directions that would have significant negative effects on U.S. economic activity rather than toward a favorable resolution. In that case, policymakers may judge that the risks to the outlook warrant the provision of additional accommodation in the near term on risk-management grounds. They might also judge that, should these risks abate and economic activity and inflation turn out to be stronger than expected, the Committee would have ample tools at its disposal to manage the situation. In the opposite scenario, under which the headwinds and risks intensify, the costs to the economy and the credibility of the Committee's commitment to 2 percent inflation would likely be more significant, especially in light of the proximity of the policy rate to its effective lower bound.

While investor sentiment toward risky assets improved in recent months, this improvement importantly reflected notable shifts in expectations regarding monetary policy. Consistent with such expectations, market prices, along with responses to the Desk's latest surveys of primary dealers and market participants, currently indicate that a reduction in the target range by 25 basis points at the July meeting is widely expected, and at least one additional 25 basis point reduction later in the year is viewed as very likely. The surveys also show that many market participants expect the Committee to announce a conclusion of the reduction of the Federal Reserve's securities holdings at the July FOMC meeting, although a similar number of respondents expect a continuation of balance sheet runoff until September. On balance, a statement along the lines of Alternative B appears broadly consistent with market participants' expectations for the outcome of this meeting.

Monetary Policy Expectations and Uncertainty

Expectations for the path of the federal funds rate exhibited notable shifts over the intermeeting period in response to Federal Reserve communications and economic data releases, and they ended the period slightly lower, on net. Towards the end of the period, financial market prices suggested a high likelihood of a 25 basis point reduction in the target range for the federal funds rate at the July FOMC meeting. Respondents to the Desk's July surveys similarly attached high odds to a 25 basis point rate cut at the upcoming meeting.

Figure 1 shows the market-implied probability distribution of the federal funds rate following the July 2019 meeting, as derived from a straight read of the most recent quotes on options and not adjusted for risk premiums. After notable shifts, it ended the period with about 70 percent odds on a 25 basis point decline in the target range at the July meeting. However, some probability was also attached to a 50 basis point reduction or no change in the target range. The corresponding average probability distribution from the July Desk surveys (figure 2) showed very similar odds. Survey respondents assigned on average around 20 percent probability to a 50 basis point reduction in the target range, 70 percent probability to a 25 basis point reduction, and a 10 percent probability to no change in the target range.

The option-implied probability distribution of the federal funds rate following the September FOMC meeting shifted slightly toward lower values (not shown). The distribution continues to imply that the federal funds rate is most likely to fall in the 1.75 to 2 percent range, and it now assigns slightly higher odds to that outcome than at the time of the June FOMC meeting.[1] The option-implied distribution for the end of 2019 (figure 3) also shifted slightly lower and currently suggests that the federal funds rate is most likely to end the year in either the 1.5 to 1.75 percent range, or the 1.75 to 2 percent range. In contrast, the corresponding year-end probability distribution from the July Desk surveys (figure 4) is centered around the 1.75 to 2 percent range, with respondents placing, on average, about 40 percent probability to that outcome, while assigning about 20 and 25 percent probability to the 1.5 to 1.75 and 2 to 2.25 percent ranges, respectively. The differences between the market-implied and survey-implied distribution likely reflect negative risk premiums and liquidity premiums embedded in the option quotes.

Figure 5 compares various measures of the expected federal funds rate path over the next few years. On net over the intermeeting period, financial market measures of the expected federal funds rate over the next few years declined modestly. A straight read of forward rates derived from overnight index swaps (the blue line) suggests that investors currently expect the federal funds rate to decline 69 basis points by

[1] The probabilities of the federal funds rate falling in the 1.5 to 1.75 percent, 1.75 to 2 percent, and the 2 to 2.25 percent ranges are about 20, 45, and 30 percent, respectively.

end-2019 and a further 35 basis points by end-2020. For comparison, the latest path from a staff term structure model that adjusts for term premiums (the purple line), suggests that investors expect declines of 43 basis points by end-2019 and little change in 2020. An alternative macro-finance model of the expected federal funds rate path (in green) lies closer to the unadjusted forward rate path, suggesting a decline of about 60 basis points by end-2019 and an additional 25 basis points by end-2020. The modal path for the federal funds rate reported by the median respondent to the Desk's July surveys (the brown diamonds) continued to point to a 50 basis point decline in the target range by year-end 2019, and then a flat path thereafter.[2]

Figure 6 shows the median and interquartile range of respondents' modal federal funds rate projections from the Desk's July surveys (in blue) relative to the June surveys (in green). Whereas the median projections (the orange bars) were unchanged from the June surveys, the interquartile range for end-2019 collapsed to the median projection and narrowed for end-2020. While these changes appear to reflect considerably more agreement among survey respondents about the most likely path of monetary policy over the next two years, one should be cautious about interpreting these changes as a reduction in the uncertainty market participants associate with their projections. Figure 7 shows market-based measures of monetary policy uncertainty at horizons of 6 and 18 months ahead derived from option prices. Although these measures declined somewhat over the intermeeting period, they remain at the top of their range in recent years, suggesting ongoing uncertainty among market participants about the path of monetary policy over the next few years.[3]

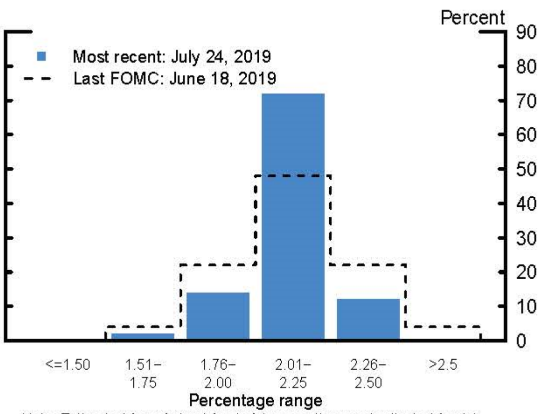
Figure 8 shows measures of the longer-run expected federal funds rate. A straight read of forward rates implied by Treasury yields suggests that investors' current expectation for the average federal funds rate 5 to 10 years ahead (the blue line) was little changed over the intermeeting period, and stands at about 2.3 percent. Adjusting for term premiums using various staff term structure models (with the light-red-shaded region showing a range of three such model estimates) continues to suggest that 5-to-10-year-ahead expectations are above the unadjusted forward rates, at between 2.9 and 3.1 percent, consistent with a negative term premium at those horizons. In contrast, the median longer-run forecast from the Desk's July surveys (the green diamonds) are closer to the unadjusted forward rates. Although the July reading was unchanged from the June surveys, these forecasts lie notably below their levels of the past few years.

[2] The most likely timing of declines in the target range during the remainder of this year are the July and September meetings, each with a 25 basis point reduction. This represents a shift from the June Desk surveys when the modal expectation was for declines at the September and December meetings.

[3] Similar-horizon measures of interest rate volatility derived from swaptions also remained elevated, despite a net decline over the intermeeting period.

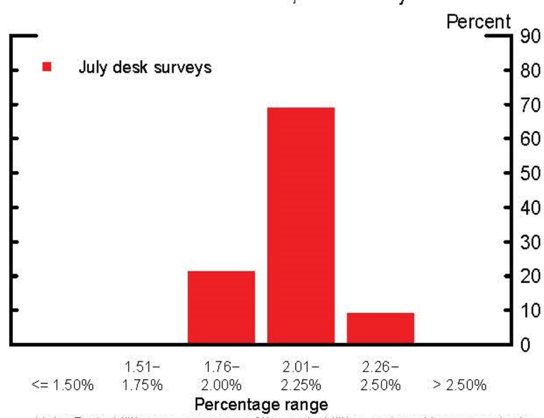
The July Desk surveys also asked respondents for their estimates of the current and future levels of the neutral real federal funds rate. The median estimate of the current neutral rate (not shown) was 0.5 percent, 0.1 percentage point lower than in the January surveys, when this question was last asked. Median estimates for the end of 2019, 2020, and 2021 all declined about 25 basis points, to 0.5, 0.54 and 0.5 percent, respectively. In comparison to the January surveys, the dispersion of views among respondents was generally little changed.

Figure 1: Market−Implied Probability Distribution of the Federal Funds Rate, Post−July FOMC



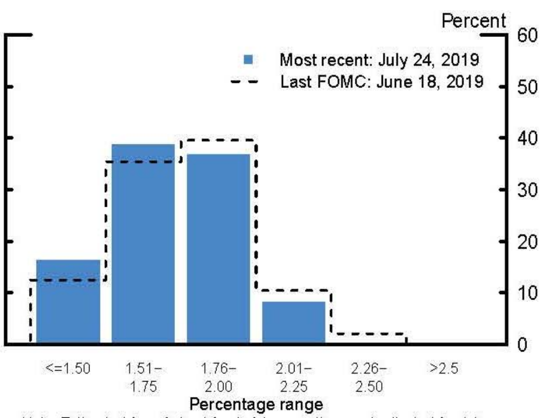
Note: Estimated from federal funds futures options, not adjusted for risk premiums. The distribution for August 2019 is used to provide a read on the distribution following the July FOMC meeting.
Source: CME Group; Federal Reserve Board staff estimates.

Figure 2: Desk Surveys Average Probability Distribution of the Federal Funds Rate, Post−July FOMC



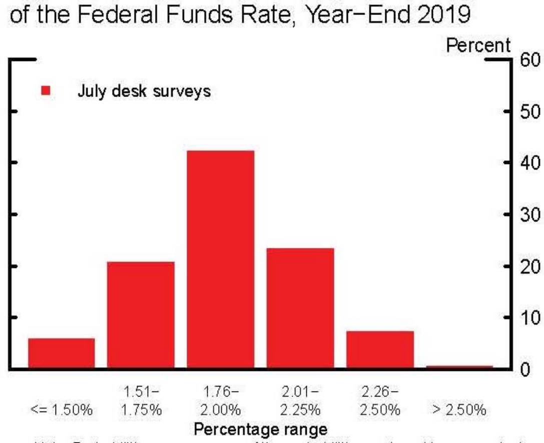
Note: Probabilities are averages of the probabilities assigned by respondents to different ranges of the federal funds rate following the July FOMC meeting.
Source: FRBNY.

Figure 3: Market−Implied Probability Distribution of the Federal Funds Rate, Year−End 2019



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 at the end of 2019.
Source: CME Group; Federal Reserve Board staff estimates.

Figure 4: Desk Surveys Average Probability Distribution of the Federal Funds Rate, Year−End 2019



Note: Probabilities are averages of the probabilities assigned by respondents to different ranges of the federal funds rate at the end of 2019.
Source: FRBNY.

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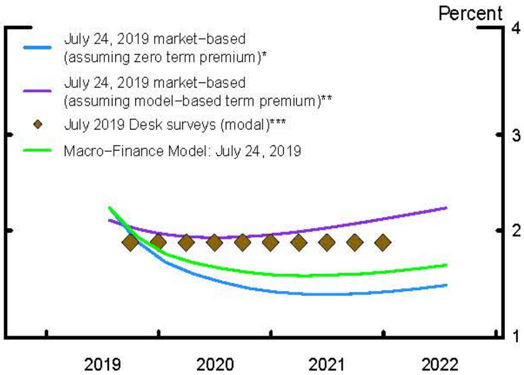
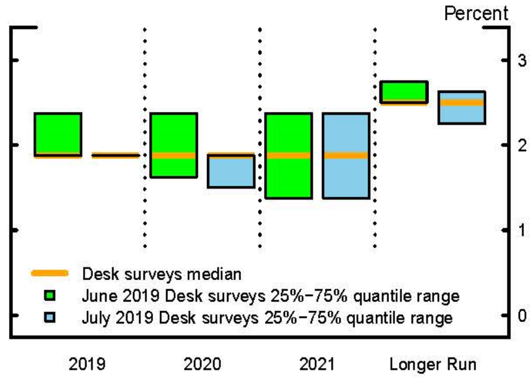
Figure 5: Federal Funds Rate Projections



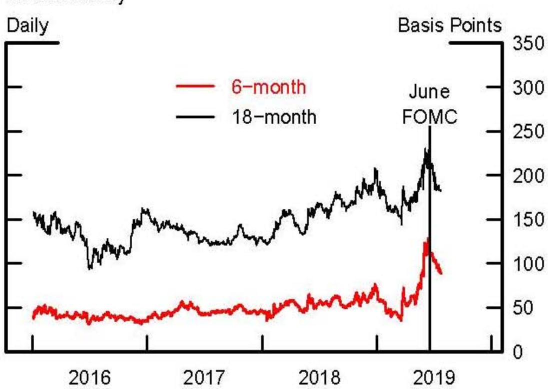
* Estimated using overnight index swap quotes with a spline approach and a term premium of zero basis points.
** Adjusting for premiums using a term structure model maintained by Board staff.
*** Median of respondents' modal paths for the federal funds rate.
Source: Bloomberg; Federal Reserve Board staff estimates; FRBNY.

Figure 6: Desk Surveys Modal Projections for the Year-End Federal Funds Rate



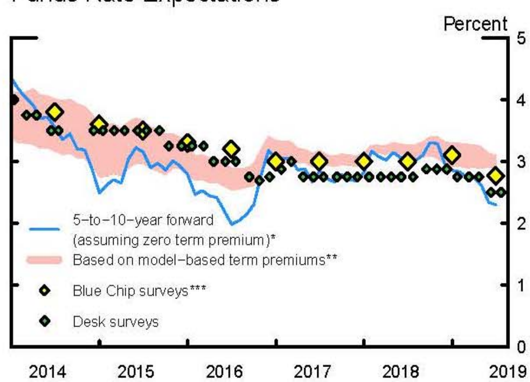
Note: Based on all responses from the June 2019 and July 2019 Desk surveys.
Source: FRBNY.

Figure 7: Measures of Monetary Policy Uncertainty



Note: Computed as the width of the 90-percent confidence interval of the market-implied federal funds rate distribution at each horizon. The distribution is estimated from Eurodollar futures options, accounting for the difference in the volatilities of LIBOR and the federal funds rate.
Source: CME; Federal Reserve Board staff estimates.

Figure 8: 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 three alternative model-based term premium estimates using Kim and Wright (2005), D'Amico, Kim, and Wei (2018), and Kim and Priebsch (2019).
*** Most recent long-run survey value is from the June 2019 Blue Chip survey.
Source: Blue Chip; FRBNY; Federal Reserve Board staff estimates.

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THE CASE FOR ALTERNATIVE C

If policymakers do not yet see significant evidence that global developments are weighing on the economic outlook, or view incoming data as suggesting a better-than-expected outlook for the economy and inflation, they may prefer to wait for more information before adjusting the stance of policy. In that case, the Committee may maintain the current target range while continuing to signal that, in light of uncertainties about the outlook and muted inflation pressures, the committee will "closely monitor the implications of incoming information for the economic outlook and will act as appropriate to sustain the expansion."

Policymakers may have anticipated a moderation in overall output growth in the second quarter, and view it as reflecting primarily the reversal of substantial boosts to first-quarter growth from net exports and inventory investment. They may see the apparent softness in business spending as transitory and, with household spending picking up markedly from earlier in the year, they may anticipate that spending growth will be near potential over the remainder of 2019. They may also view recent economic indicators, including quite upbeat readings on consumer sentiment, strong labor market conditions, and the rebound in payroll gains in June from a weak reading in May as consistent with a solid economic outlook.

Policymakers may interpret the softness in inflation as being caused largely or entirely by transitory factors and therefore be confident that, under the current monetary policy stance, inflation will rise to the Committee's 2 percent objective over the medium term. Policymakers may also be concerned that price pressures from high levels of resource utilization could eventually lead to greater upward pressure on wages and prices, consistent with the predictions of models that imply nonlinear responses of inflation to resource utilization. In addition, they may judge long-term inflation expectations to be sufficiently well-anchored at levels consistent with the Committee's 2 percent objective. They may therefore deem the current stance of policy as appropriate.

In addition, policymakers may view current financial conditions as highly accommodative, and may be concerned about vulnerabilities arising to financial stability from lower interest rates. For example, they may see that prices in equity and bond markets are near historic peaks, while valuation pressures in leveraged loan and commercial real estate markets remain high. Putting all these considerations together, they might judge that financial stability considerations strengthen the case for leaving rates unchanged.

Alternative C would be inconsistent with the widely-held expectation of a reduction in the target range for the federal funds rate at the upcoming meeting, and so it might result in a significant repricing in financial markets. Market expectations for the path of short-term interest rates would likely move up, while equity prices and inflation compensation would likely fall. Although policymakers may view some correction in market expectations as warranted, the apparent inconsistency of Alternative C with recent Federal Reserve communications could cause confusion among investors about the Committee's intentions.

THE CASE FOR ALTERNATIVE A

If policymakers view risks to the outlook for the economy as significantly weighted to the downside or are increasingly worried about the ongoing weakness in inflation and inflation expectations, they may deem it appropriate to provide a substantial amount of monetary policy accommodation to sustain the economic expansion and support the return of inflation and inflation expectations to levels consistent with the Committee's symmetric 2 percent objective. Moreover, they may judge that a larger cut in the target range for the federal funds rate could help cushion the effects of possible adverse shocks to the economy and, hence, would be appropriate policy from a risk-management perspective. With Alternative A, policymakers would communicate that, in light of "the implications of global developments for the economic outlook as well as inflation running persistently below 2 percent," the Committee "decided to lower the target range for the federal funds rate to 1-3/4 to 2 percent." Alternative A would also signal the Committee's preparedness to make further adjustments to the target range for the federal funds rate to sustain the expansion, and it would also announce the end of balance sheet reduction in August.

With inflation running persistently below the Committee's symmetric 2 percent objective, and longer-run measures of inflation expectations near the lower end of their historical ranges, policymakers may be concerned that inflation expectations have already moved below levels consistent with the Committee's 2 percent objective. That being the case, they may see significant risks that inflation could fail to return to 2 percent on a sustained basis, particularly if resource utilization were to soften. They might also judge that, should inflation move above 2 percent for a time, a modest overshooting of the target would be consistent with the Committee's longer-term goals and would help re-center inflation and inflation expectations on the 2-percent objective. In this case, they might deem it appropriate to lower the target range for the federal funds rate by ½ percentage point and signal that additional monetary policy accommodation may be forthcoming in the near future. Accordingly, under Alternative A, the Committee would stress that it "is prepared to make further adjustments in the target range for the federal funds rate" to support its objectives.

Policymakers may judge that, in the absence of an offsetting policy response, global developments will weigh heavily on the economic outlook. They may also judge that, in light of the proximity of the policy rate to its effective lower bound, policymakers should act forcefully when confronted with risks to the outlook. They may view the slowing in business fixed investment and manufacturing production so far this year as pointing to a more substantial downshift in economic growth than that in the staff's baseline. They might also regard staff projections suggesting that economic growth in the second half of the year will slow notably as consistent with the notion that global developments are significantly weighing on the economic outlook. They may view recent apparent progress on trade negotiations as likely to be followed by a renewed extended period of uncertainty that will have adverse implications for aggregate demand. Policymakers may also be concerned about the persistently flat slope of the Treasury yield curve and view it as consistent with a significant probability of a recession over the next year, unless significant monetary accommodation is provided.

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, and market expectations for the federal funds rate would likely fall. If, in addition, market participants judged Alternative A as indicating a more accommodative policy reaction function, then equity prices and inflation compensation would likely rise. The effect on the dollar might be more ambiguous, with lower real rates and higher future inflation pointing to depreciation, but stronger economic activity suggesting the opposite. In contrast, if market participants inferred from Alternative A that the outlook for economic activity and inflation was bleaker than they had been expecting, equity prices would likely fall together with the exchange value of the dollar, and possibly inflation compensation.

Alternatives

IMPLEMENTATION NOTE

Draft implementation notes corresponding to each of the three Alternatives appear on the following pages. As usual, struck-out text indicates language deleted from the June directive and implementation note, bold red underlined text indicates added language, and blue underlined text indicates text that links to websites. Apart from the usual text changes to reflect decisions regarding administered rates, the implementation notes for alternatives A and B include new language for the Desk directive in connection with the decisions regarding the balance sheet under those alternatives.

Alternatives

Implementation Note for July 2019 Alternative A

Release Date: July 31, 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 ~~June 19, 2019~~ **July 31, 2019**:

- The Board of Governors of the Federal Reserve System voted **[** unanimously **]** to ~~maintain~~ **lower** the interest rate paid on required and excess reserve balances ~~at 2.35~~ **to 1.85** percent, effective ~~June 20, 2019~~ **August 1, 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 ~~June 20, 2019~~ **August 1, 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 **1-3/4 to 2** ~~2-1/4 to 2-1/2~~ percent, including 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 ~~2.25~~ **1.75** 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.

  Effective August 1, 2019, the Committee directs the Desk to ~~continue~~ roll~~ing~~ over at auction ~~the amount of~~ **all** principal payments from the Federal Reserve's holdings of Treasury securities ~~maturing during each calendar month that exceeds $15 billion,~~ and to ~~continue~~ reinvest~~ing in agency mortgage-backed securities the amount of~~ **all** principal payments from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities received during each calendar month ~~that exceeds $20 billion~~. **Principal payments from agency debt and agency mortgage-backed securities up to $20 billion per month will 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

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 ~~the establishment of~~ **a 1/2 percentage point decrease in** the primary credit rate ~~at the existing level of 3.00 percent~~ **to 2.50 percent, effective August 1, 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 […].**

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.

Alternatives

Implementation Note for July 2019 Alternative B

Release Date: July 31, 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 ~~June 19, 2019~~ **July 31, 2019**:

- The Board of Governors of the Federal Reserve System voted **[** unanimously **]** to ~~maintain~~ **lower** the interest rate paid on required and excess reserve balances ~~at 2.35~~ **to 2.10** percent, effective ~~June 20, 2019~~ **August 1, 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 ~~June 20, 2019~~ **August 1, 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 **2 to** 2-1/4 ~~to 2-1/2~~ percent, including 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 ~~2.25~~ **2.00** 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.

  Effective August 1, 2019, the Committee directs the Desk to ~~continue~~ roll~~ing~~ over at auction ~~the amount of~~ **all** principal payments from the Federal Reserve's holdings of Treasury securities ~~maturing during each calendar month that exceeds $15 billion,~~ and to ~~continue~~ reinvest~~ing in agency mortgage-backed securities the amount of~~ **all** principal payments from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities received during each calendar month ~~that exceeds $20 billion~~. **Principal payments from agency debt and agency mortgage-backed securities up to $20 billion per month will 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.

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 ~~the establishment of~~ **a 1/4 percentage point decrease in** the primary credit rate ~~at the existing level of 3.00 percent~~ **to 2.75 percent, effective August 1, 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 […].**

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.

Implementation Note for July 2019 Alternative C

Release Date: July 31, 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 ~~June 19, 2019~~ **July 31, 2019**:

- The Board of Governors of the Federal Reserve System voted [unanimously] to maintain the interest rate paid on required and excess reserve balances at 2.35 percent, effective ~~June 20, 2019~~ **August 1, 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 ~~June 20, 2019~~ **August 1, 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 2-1/4 to 2-1/2 percent, including 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 2.25 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 the amount of principal payments from the Federal Reserve's holdings of Treasury securities maturing during each calendar month that exceeds $15 billion, and to continue reinvesting in agency mortgage-backed securities the amount of principal payments from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities received during each calendar month that exceeds $20 billion. Small deviations from these amounts for operational reasons are acceptable.

  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 the establishment of the primary credit rate at the existing level of 3.00 percent.

Alternatives

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 under two scenarios, which are both consistent with staff projections in Tealbook A. The scenarios differ only with regard to the policy assumptions concerning the timing for the end of balance sheet runoff. As in the June Tealbook, in the baseline scenario the staff assumes that the reduction in total securities holdings concludes at the end of September, consistent with the Balance Sheet Normalization Principles and Plans that the Committee released after the March 2019 FOMC meeting. In the alternative scenario—labeled "Earlier End to Runoff"—it is assumed that the reduction in total securities holdings concludes by August 1, consistent with Alternatives A and B shown in the Monetary Policy Alternatives section of Tealbook B.

Relative to the June Tealbook, the paths for longer-term interest rates in the staff's financial projections have been revised down somewhat. Through the end of 2021, the 10-year Treasury yield is, on average, about 15 basis points lower, while the path for the 30-year fixed mortgage rate was revised down a bit less. These revisions affect the balance sheet projections in both scenarios, as they imply higher agency MBS prepayment activity than projected in June. At this stage in the normalization process, higher prepayment activity has implications mostly for the composition, rather than the size, of the balance sheet.

Evolution of the SOMA portfolio. Under the baseline scenario, cumulative redemptions since October 2017 are projected to reach $753 billion by the time the reduction in the size of SOMA holdings concludes at the end of the third quarter. Of this total, redemptions of Treasury and agency securities will amount to $419 billion and $334 billion, respectively (see the table in the exhibit "Redemptions and Reinvestments of SOMA Principal Payments - *Baseline*"). Over the same period, cumulative reinvestments of principal payments received from holdings of Treasury and agency securities are projected to be $363 billion and $160 billion, respectively. The lower projected path for the mortgage rate and the resulting faster pace of MBS prepayments imply that, during the third quarter of this year, reinvestments of agency securities are $1.3 billion higher than in the June Tealbook projection. The corresponding projections in the event that the Committee decides to conclude balance sheet runoff earlier are

Redemptions and Reinvestments of SOMA Principal Payments

Baseline

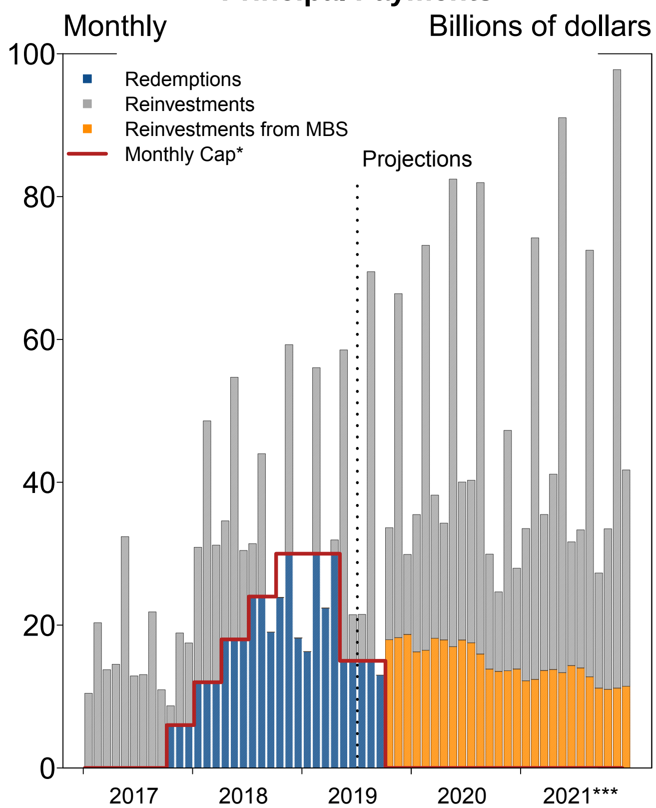
Projections for Treasury Securities
(Billions of dollars)

	Redemptions		Reinvestments*	
	Period	Since Oct. 2017	Period	Since Oct. 2017
2019:Q2	60.0	375.7	51.9	302.2
2019:Q3	43.0	418.7	61.0	363.2
2019:Q4	0.0	418.7	75.1	438.3
2018	229.1	247.1	197.1	224.2
2019	171.6	418.7	214.0	438.3
2020	0.0	418.7	363.7	802.0
2021***	0.0	418.7	345.1	1147.0

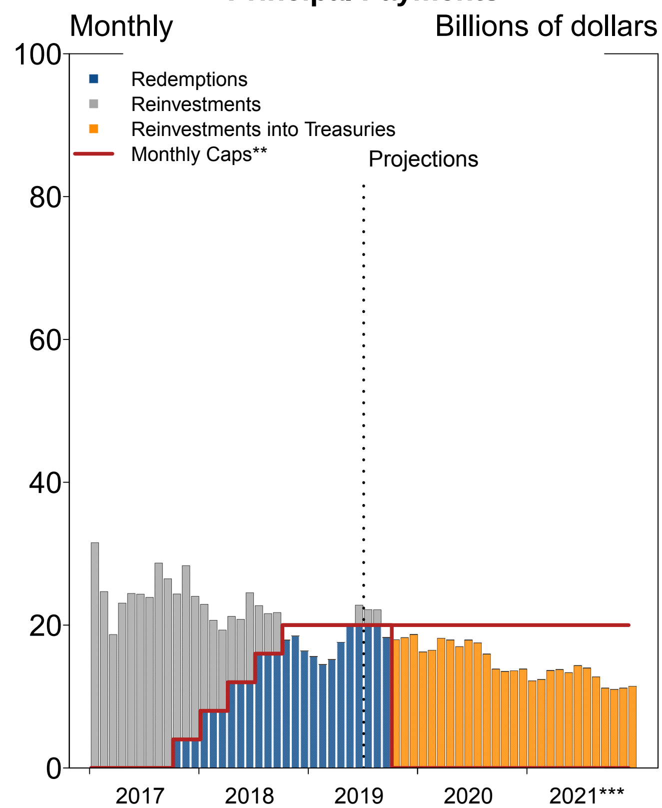
Projections for Agency Securities
(Billions of dollars)

	Redemptions		Reinvestments** (Agency/Treasury)	
	Period	Since Oct. 2017	Period	Since Oct. 2017
2019:Q2	57.6	275.7	2.9 / 0.0	155.2 / 0.0
2019:Q3	58.3	334.0	4.3 / 0.0	159.5 / 0.0
2019:Q4	0.0	334.0	0.0 / 54.9	159.5 / 54.9
2018	160.8	172.8	87.6 / 0.0	152.3 / 0.0
2019	161.2	334.0	7.2 / 54.9	159.5 / 54.9
2020	0.0	334.0	0.0 / 192.0	159.5 / 246.9
2021***	0.0	334.0	0.0 / 128.6	159.5 / 375.5

SOMA Treasury Securities Principal Payments



SOMA Agency Debt and MBS Principal Payments



* Starting in May 2019, principal payments from maturing Treasury securities below $15 billion per month are redeemed, while those above are reinvested into Treasury securities. Starting in October 2019, all principal payments from maturing Treasury securities are reinvested into Treasury securities.

** Starting in October 2019, 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.

*** Reserves are projected to reach $1 trillion in October 2021. After this date, all principal payments received from all security holdings are reinvested into Treasury securities.

shown in the exhibit "Redemptions and Reinvestments of SOMA Principal Payments – *Earlier End to Runoff*."

In the baseline scenario, by the time the reduction in total securities holdings concludes at the end of September, the size of the SOMA portfolio is projected to be about $3.5 trillion, consisting of about $2 trillion of Treasury securities and $1.5 trillion of agency securities (see the exhibit titled "Total Assets and Selected Balance Sheet Items"). At that time, the balance sheet is projected to stand at about 17 percent of nominal GDP. The liability side of the balance sheet is projected to be composed of $2.4 trillion—or 11 percent of nominal GDP—of nonreserve liabilities, and $1.3 trillion—or about 6 percent of nominal GDP—of reserve balances.[1,2] We continue to assume that, once reserves reach $1 trillion, they will begin growing in line with nominal GDP.[3] In the baseline scenario, this point is projected to be reached in the fourth quarter of 2021; thereafter, the size of the balance sheet as a share of nominal GDP is projected to remain constant at nearly 16 percent.[4] For comparison, the size of the balance sheet as a share of GDP averaged about 5 percent over the decade prior to the crisis and peaked at about 25 percent in the fourth quarter of 2014.

Under the "Earlier End to Runoff" scenario, as depicted by the red lines in the top four panels of the exhibit titled "Total Assets and Selected Balance Sheet Items," the SOMA portfolio is projected to be about $35 billion larger than in the baseline scenario by the end of August and about $66 billion larger by the end of September. Reserve balances are projected to fall to $1 trillion during the second quarter of 2022, two quarters later than projected in the baseline scenario, as the larger securities holdings imply a higher trajectory for reserves.

The share of agency MBS in the SOMA portfolio, which currently stands at 42 percent, is expected to decline to about 18 percent of the SOMA portfolio by

[1] Reserve projections included in Tealbook B largely leave out effects related to the debt limit episode as TGA balances are assumed to grow in line with nominal GDP over the projection period.

[2] Liabilities plus Federal Reserve Bank capital equals total assets, which include the SOMA securities portfolio and also items such as unamortized premiums and discounts, and other assets.

[3] As in the June Tealbook, we continue to assume that liabilities other than currency and reserves, such as the foreign repo pool and DFMU balances, grow in line with nominal GDP from the start of the projection period.

[4] As discussed in the March FOMC memo "Transitioning to an Ample Reserves Regime with Lower Reserves," the actual level of reserves prevailing when the decline in reserves ceases is uncertain and will need to be determined in light of information regarding banks' reserve demand.

Balance Sheet & Income

Redemptions and Reinvestments of SOMA Principal Payments

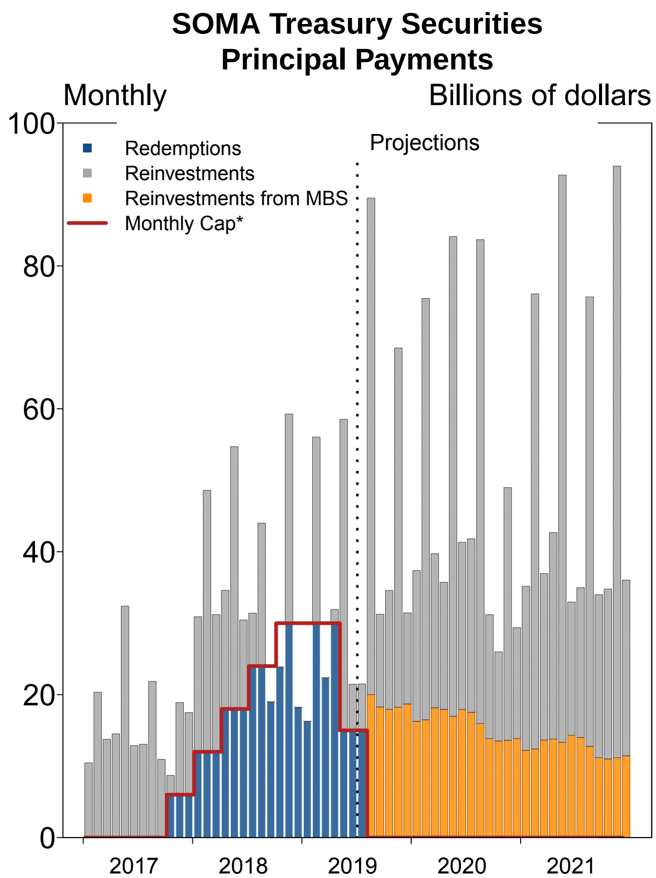
Earlier End to Runoff

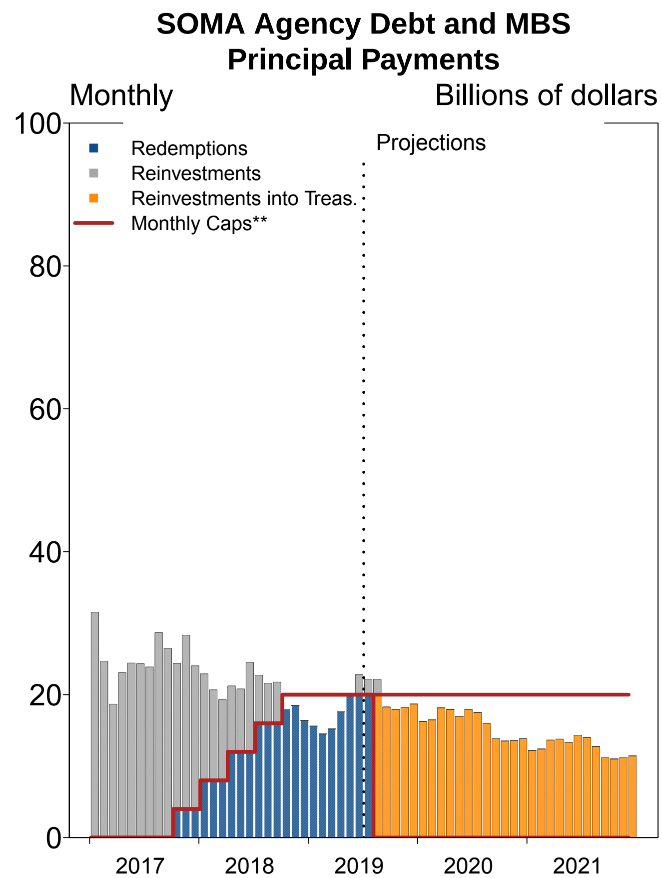
Projections for Treasury Securities
(Billions of dollars)

	Redemptions		Reinvestments*	
	Period	Since Oct. 2017	Period	Since Oct. 2017
2019:Q2	60.0	375.7	51.9	302.2
2019:Q3	15.0	390.7	89.0	391.2
2019:Q4	0.0	390.7	79.7	470.8
2018	229.1	247.1	197.1	224.2
2019	143.7	390.7	246.6	470.8
2020	0.0	390.7	382.7	853.6
2021	0.0	390.7	474.7	1328.3

Projections for Agency Securities
(Billions of dollars)

	Redemptions		Reinvestments** (Agency/Treasury)	
	Period	Since Oct. 2017	Period	Since Oct. 2017
2019:Q2	57.6	275.7	2.9 / 0.0	155.2 / 0.0
2019:Q3	20.0	295.7	4.3 / 38.3	159.5 / 38.3
2019:Q4	0.0	295.7	0.0 / 54.9	159.5 / 93.2
2018	160.8	172.8	87.6 / 0.0	152.3 / 0.0
2019	122.9	295.7	7.2 / 93.2	159.5 / 93.2
2020	0.0	295.7	0.0 / 192.0	159.5 / 285.2
2021	0.0	295.7	0.0 / 151.3	159.5 / 436.4





* Starting in May 2019, principal payments from maturing Treasury securities below $15 billion per month are redeemed, while those above are reinvested into Treasury securities. Starting in October 2019, all principal payments from maturing Treasury securities are reinvested into Treasury securities.

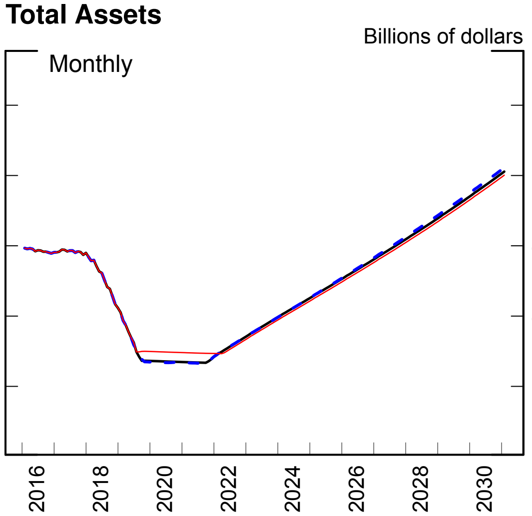
** Starting in August 2019, principal payments from holdings of agency securities below $20 billion per month are reinvested into Treasury securities, while those above are reinvested into agency MBS.

Note: Under this scenario, reserves are projected to reach $1 trillion in April 2022.

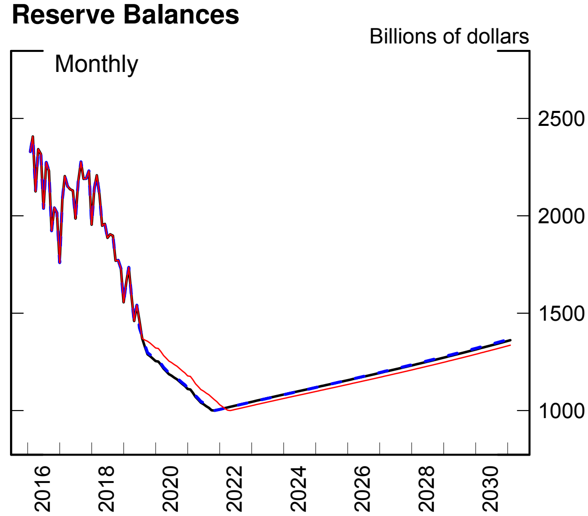
Total Assets and Selected Balance Sheet Items

July Tealbook baseline — June Tealbook baseline — July Tealbook−Earlier End to Runoff

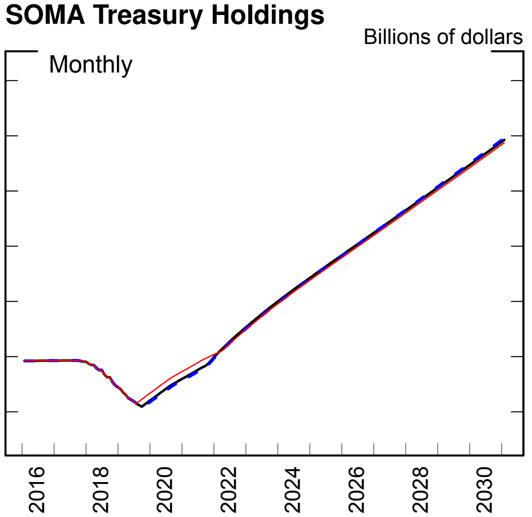
Total Assets



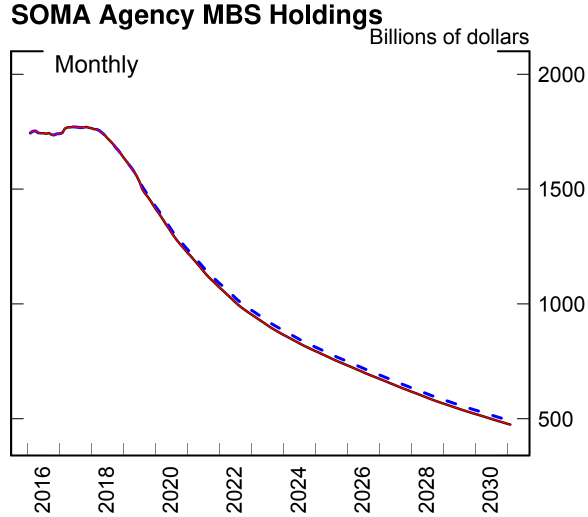
Reserve Balances



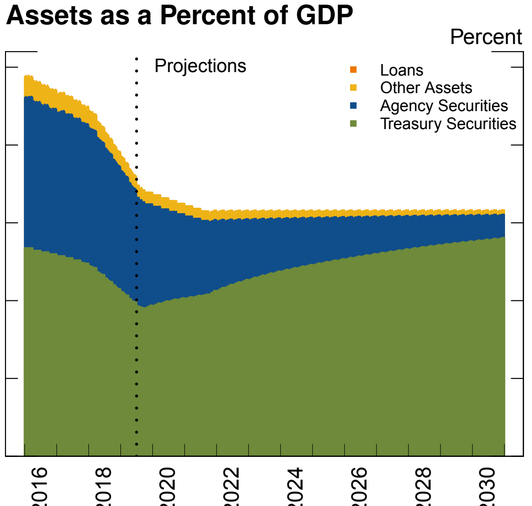
SOMA Treasury Holdings



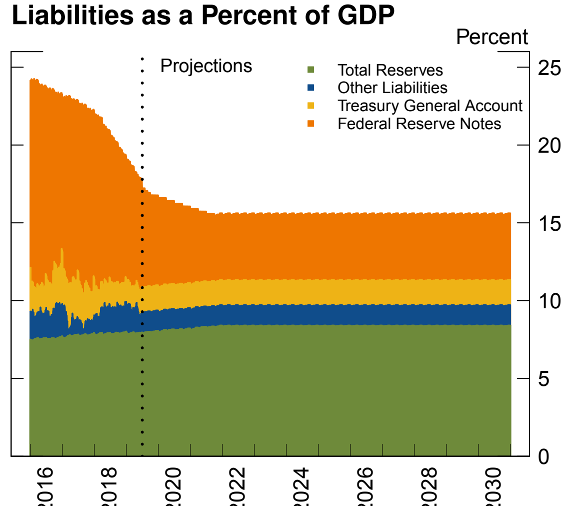
SOMA Agency MBS Holdings



Assets as a Percent of GDP



Liabilities as a Percent of GDP



the end of 2025 under both scenarios, unchanged from the June projection (see the exhibit titled “Federal Reserve Balance Sheet Month-end Projections – July Tealbook”).

SOMA portfolio characteristics. Portfolio characteristics are roughly the same across the baseline and the “Earlier End to Runoff” scenarios until the end of 2021, when securities holdings start growing again in the baseline scenario.

The weighted-average duration of the SOMA Treasury portfolio is currently just above six and a half years (see the top panel of the exhibit titled “Projections for the Characteristics of SOMA Treasury Securities Holdings”). In the baseline scenario, duration is projected to edge up to nearly seven years as redemptions continue through September and longer-duration securities become a larger share of the portfolio.[5] Thereafter, duration stays roughly constant until the decline in reserve balances ends and the SOMA portfolio begins to expand again in the fourth quarter of 2021. As in the June Tealbook, we assume that once the decline in reserve balances ends, rollovers of maturing Treasury securities will continue to be directed for the rest of the projection horizon to newly-issued securities at Treasury auctions in proportion to the maturity distribution of Treasury debt issued at the time of rollover. For secondary-market purchases of Treasury securities aimed at reinvesting principal payments received from agency securities holdings and at accommodating growth in Federal Reserve liabilities, we also continue to assume that they will be directed entirely towards Treasury bills until bills comprise approximately one-third of the Treasury portfolio, close to the pre-crisis composition.[6] The process of rebuilding the Treasury bill portion of the portfolio is expected to take about 5 years from the time the portfolio starts expanding again, leading to a gradual reduction in the weighted-average duration of the Treasury portfolio to just under 5 years. Thereafter, further secondary-market purchases of Treasury securities are assumed to be spread across the maturity spectrum (see the bottom panel of the exhibit).[7]

[5] In both scenarios, it is assumed that rollovers of maturing Treasury securities will be allocated across newly issued securities at Treasury auctions on a pro-rata basis in proportion with the amounts being issued. Consistent with the Desk’s interim plan for reinvesting principal payments from agency debt and MBS into Treasury securities once the balance sheet runoff ceases, these purchases will be spread across the Treasury maturity spectrum, in line with the amounts outstanding in each residual maturity sector.

[6] As the Committee has not yet reached a decision on the long-run composition of the SOMA portfolio, we retain this purchase assumption in the current projections.

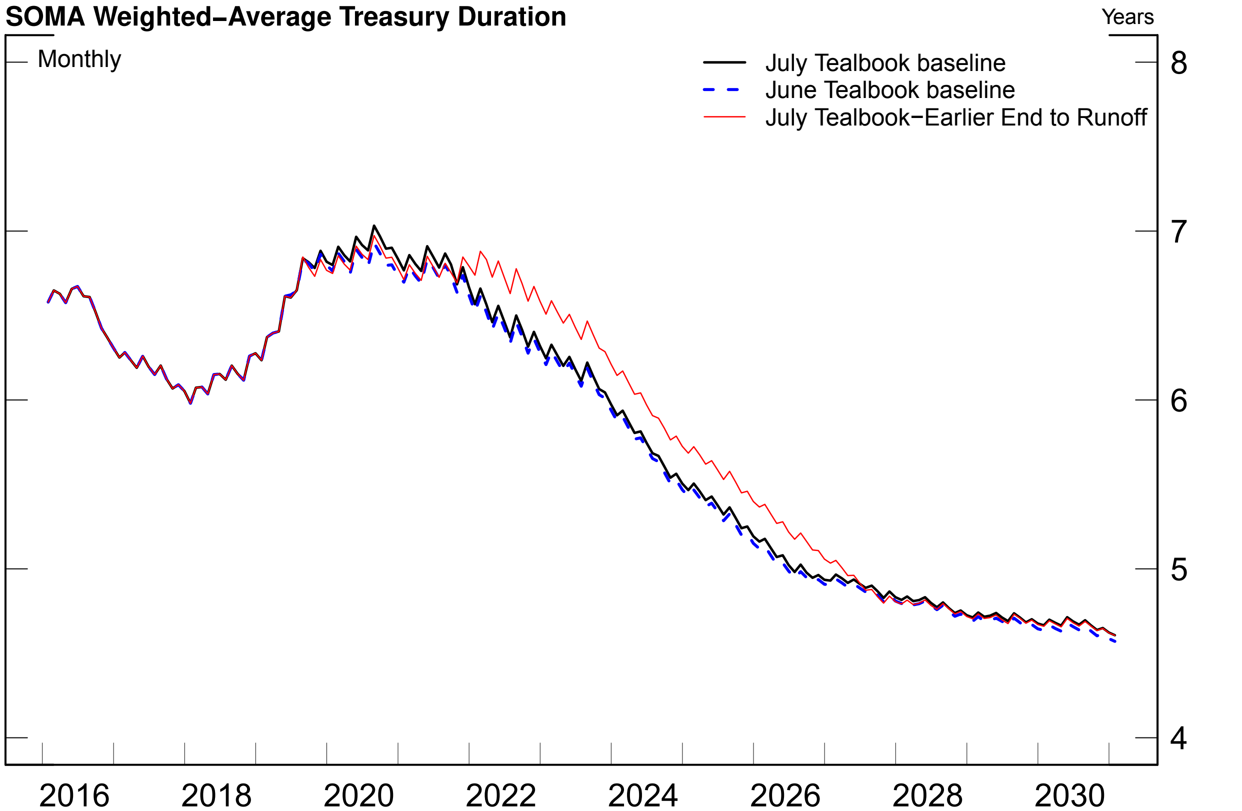
[7] In this Tealbook, we have also implemented an adjustment to our technical assumptions regarding the maturity distribution of secondary-market purchases of Treasury securities after the composition of the SOMA Treasury portfolio reaches one-third in bills. This purchase distribution now

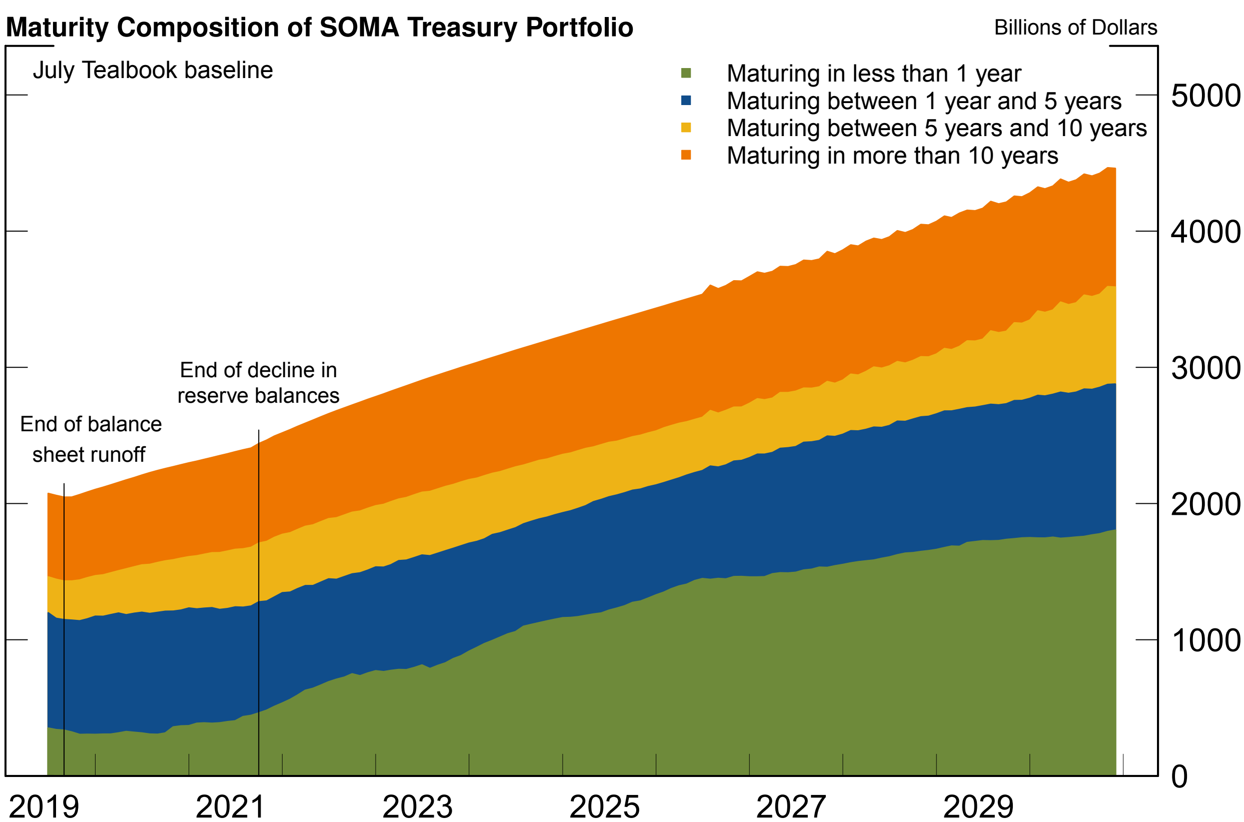
Federal Reserve Balance Sheet
Month-end Projections – July Tealbook
(Billions of dollars)

	Historical*			Projections				
	Aug 2014	Sep 2017	Jun 2019	Dec 2019	Dec 2020	Dec 2022	Dec 2025	Dec 2030
Total assets	4,416	4,460	3,812	3,681	3,673	3,853	4,264	5,013
Selected assets								
Loans and other credit extensions**	2	6	0	0	0	0	0	0
Securities held outright	4,157	4,240	3,630	3,519	3,522	3,720	4,151	4,925
U.S. Treasury securities	2,437	2,465	2,095	2,102	2,297	2,764	3,417	4,445
Agency debt securities	42	7	2	2	2	2	2	2
Agency mortgage-backed securities	1,678	1,768	1,533	1,414	1,222	953	732	478
Unamortized premiums	209	162	131	123	111	90	68	41
Unamortized discounts	19	14	13	12	11	9	7	4
Total other assets	29	37	38	28	29	34	38	43
Total liabilities	4,360	4,419	3,773	3,642	3,633	3,809	4,213	4,950
Selected liabilities								
Federal Reserve notes in circulation	1,249	1,533	1,697	1,748	1,856	2,046	2,264	2,659
Reverse repurchase agreements	277	432	303	280	292	315	348	409
Deposits with Federal Reserve Banks	2,825	2,447	1,766	1,608	1,480	1,443	1,596	1,875
Reserve balances held by depository institutions	2,762	2,190	1,461	1,254	1,111	1,045	1,156	1,358
U.S. Treasury, General Account	49	176	243	288	300	323	357	420
Other deposits	15	82	62	67	69	75	83	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	44	50	64

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; June 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.

Projections for the Characteristics of SOMA Treasury Securities Holdings





Balance Sheet & Income

Under the "Earlier End to Runoff" scenario, the weighted-average duration follows a similar trajectory, but at a higher level than in the baseline scenario. Because of our assumption that the balance sheet will start growing once reserve balances have reached $1 trillion, duration is projected to remain roughly constant for a longer period and to start declining later, as the subsequent purchases directed towards Treasury bills begin at a later date.

Federal Reserve remittances. In both the baseline and "Earlier End to Runoff" scenarios, remittances to the Treasury are projected to decline to $50 billion this year from $65 billion in 2018 (see the exhibit "Income Projections"), mainly reflecting reduced interest income resulting from the reduction in SOMA securities holdings. Total interest expense is projected to be $43 billion this year, little changed from 2018.[8] Remittances are expected to remain at $50 billion next year, and then rise, reflecting an increase in net interest income associated with a growing balance sheet. The projected path for remittances is generally a bit lower than in the June Tealbook, reflecting the lower MBS coupon income resulting from the faster projected pace of MBS prepayments.

The path for remittances implied by the "Earlier End to Runoff" scenario is similar to that in the baseline projection, even as underlying interest income and expense slightly differ through 2022, with the differences in interest income and expense roughly offsetting each other. As shown in the middle right panel of the exhibit "Income Projections," annual remittances are projected to rise gradually from around 0.22 percent of nominal GDP next year to just below 0.3 percent by the end of the projection horizon.

Unrealized gains or losses. The SOMA portfolio was in a net unrealized gain position of about $137 billion at the end of June.[9] With longer-term interest rates

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reflects the projected maturity distribution of Treasury securities outstanding at that time, and is based on updated assumptions about Treasury issuance. This adjustment has little material implications for the trajectory of the Treasury portfolio's weighted-average duration.

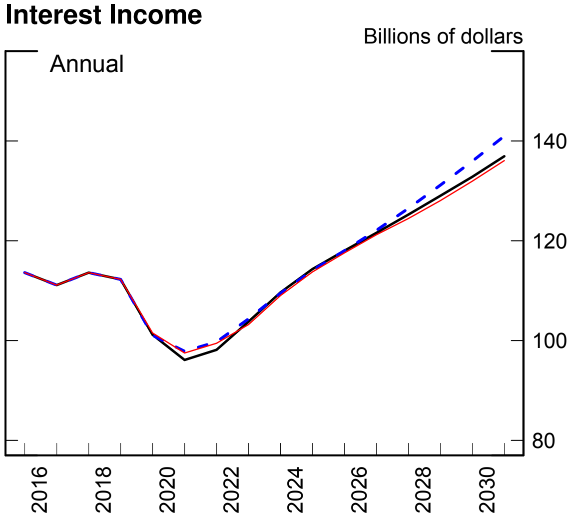
[8] The effects on total interest expense of the increase in the IOER over 2018 and the decrease in reserves this year approximately offset each other. The projection for interest expense is also based on a fairly flat path for the IOER this year. Meanwhile, we continue to assume that the FOMC will set a 25 basis point-wide target range for the federal funds rate throughout the projection period. Consistent with the FOMC's May 2019 Implementation Note, we assume that the IOER will be set 15 basis points below the top of the target range, and the offering rate on overnight RRPs will be set at the bottom of the range.

[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.

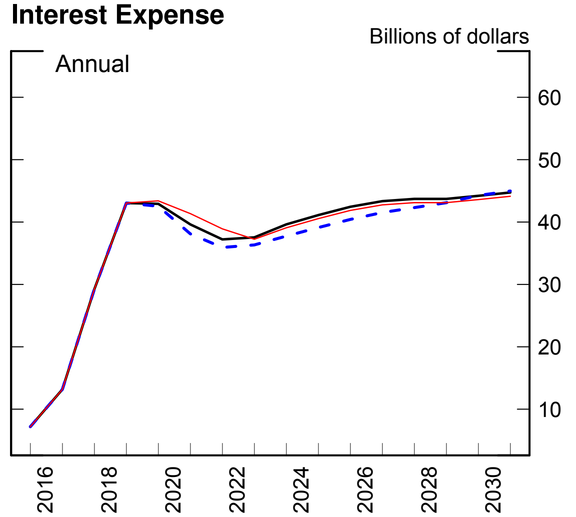
Income Projections

July Tealbook baseline — June Tealbook baseline — July Tealbook−Earlier End to Runoff

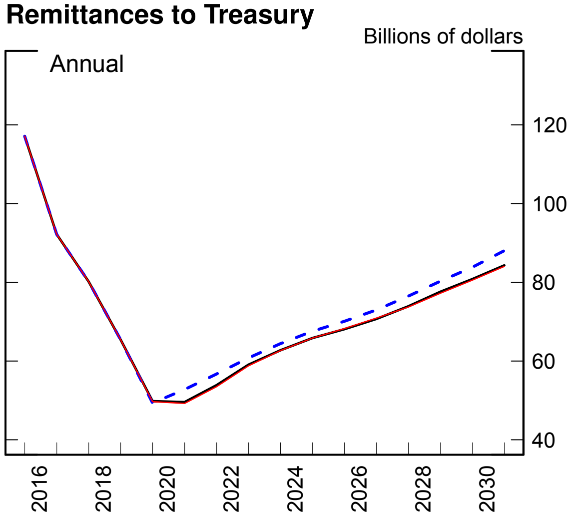
Interest Income



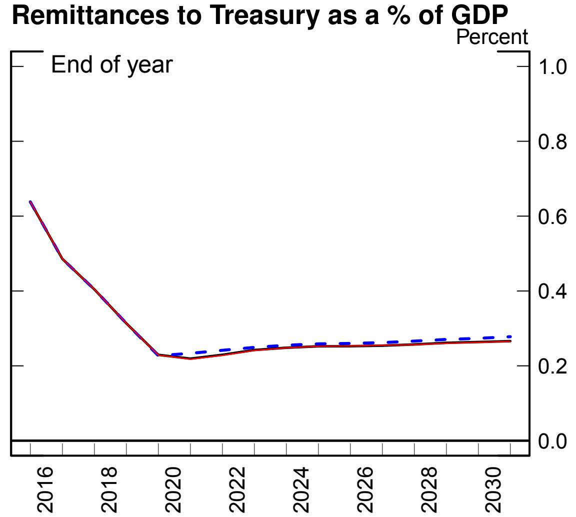
Interest Expense



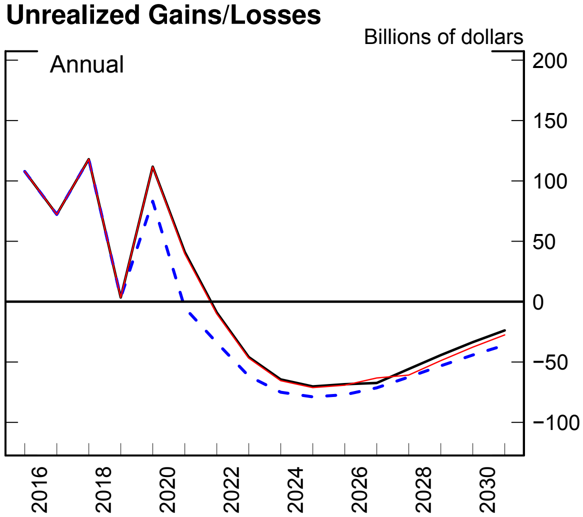
Remittances to Treasury



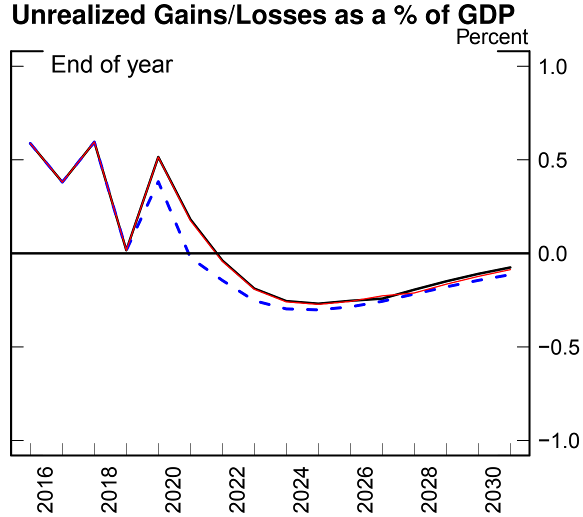
Remittances to Treasury as a % of GDP



Unrealized Gains/Losses



Unrealized Gains/Losses as a % of GDP



projected to rise, the unrealized gain position is expected to decline over the next couple of years before turning into an unrealized loss position by mid-2021. The position bottoms out at around a $70 billion unrealized loss in 2025:Q1. Compared with the June Tealbook, the path for the unrealized position of the SOMA portfolio is moderately higher over the next several years reflecting the lower path for longer-term interest rates.

Total term premium effect. As shown in the table "Projections for the 10-Year Treasury Total Term Premium Effect (TTPE)," under the baseline scenario, the securities held in the SOMA portfolio are estimated to be reducing the term premium embedded in the 10-year Treasury yield by about 130 basis points in the current quarter. 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. The gradual decline reflects both the projected decrease in the duration of the Federal Reserve's securities holdings and the projected continued decrease in the size of the SOMA portfolio relative to nominal GDP through the fourth quarter of 2021.[10] Over the next decade, the average projected pace of decline in the TTPE is about 3 basis points per year so that, at the end of 2030, the total term premium effect of the SOMA portfolio on the 10-year Treasury yield is estimated to be less than 100 basis points. The contour for the TTPE is virtually unchanged from that in the June projection.

Under the "Earlier End to Runoff" scenario, the TTPE is just a few basis points more negative than in the baseline projection over the next 4 years, with the difference reflecting the slightly larger securities holdings and the higher trajectory for the weighted-average duration of the Treasury portfolio.

[10] The TTPE calculations implicitly assume that any change in the weighted-average duration of the Federal Reserve's Treasury securities holdings results in a corresponding change (in the opposite direction) in the weighted-average duration of Treasury securities held by the private sector.

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

(Basis Points)

Date	July Tealbook	June Tealbook	July Tealbook - Earlier End to Runoff
Quarterly Averages			
2019:Q3	-132	-133	-134
Q4	-130	-131	-133
2020:Q4	-125	-126	-128
2021:Q4	-121	-121	-123
2022:Q4	-116	-117	-118
2023:Q4	-111	-112	-113
2024:Q4	-108	-109	-108
2025:Q4	-105	-106	-105
2026:Q4	-103	-103	-102
2027:Q4	-101	-101	-100
2028:Q4	-99	-99	-98
2029:Q4	-97	-97	-97
2030:Q4	-95	-95	-95

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
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
ZLB	zero lower bound