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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Authorized for Public Release

Class I FOMC – Restricted Controlled (FR)

Report to the FOMC on Economic Conditions and Monetary Policy

Book B

Monetary Policy Alternatives

September 20, 2018

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

Information received since the July/August FOMC meeting indicates that the economy is evolving broadly in line with expectations. The labor market has continued to strengthen, with the unemployment rate staying low and payrolls expanding strongly. Real GDP is estimated to have increased at an annual rate of 3½ percent in the first half of the year. The staff continues to project above-trend GDP growth through 2019 and high levels of resource utilization over the medium term. Headline and core PCE prices are estimated to have increased 2.2 and 1.9 percent, respectively, over the 12 months through August. The staff forecasts both headline and core PCE inflation to remain close to 2 percent through 2021.

There are two key questions that the Committee is likely to face at this meeting: First, whether the available information warrants raising the target range for the federal funds rate; second, whether the federal funds rate path and the characterization of the stance of monetary policy suggested by recent policy communications remain appropriate, given the current economic outlook and associated risks. The three alternative draft statements have been prepared with these questions in mind.

Under Alternative B, the Committee would raise the target range for the federal funds rate and reiterate its expectation that further gradual increases will be consistent with sustained economic growth, a strong labor market, and inflation near 2 percent over the medium term. Reflecting the increasing difficulty of making a definitive assessment of the stance of monetary policy, Alternative B removes the language characterizing the stance of monetary policy as “accommodative.”

Alternative C is written from the perspective that a steeper policy rate path than that signaled in Committee actions and communications over recent years will likely be appropriate. It registers some concern about potential overheating of the economy by noting that “the Committee is closely monitoring the economic and financial implications of high levels of resource utilization.” Consequently, under Alternative C, the Committee not only raises the target range but also omits the indication that further rate increases are expected to be “gradual.”

Alternative A is motivated by the belief that the current stance of monetary policy is at, or is very close to, neutral, a state in which policy is neither expansionary nor

contractionary. This alternative maintains the current target range for the federal funds rate, no longer characterizes the stance of monetary policy as accommodative, and removes the reference to "further gradual increases." Such a statement would be consistent with either the end of—or a sustained pause in—the current tightening cycle.[1]

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

- The three alternatives have identical assessments of the incoming data; this characterization is also the same as that in the August FOMC statement.
- With respect to the outlook for economic activity and inflation, the associated risks, and the monetary policy path upon which the outlook is conditioned:
    - Alternative B projects "sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective over the medium term," and notes that risks to this outlook are "roughly balanced." Alternative B conditions these outcomes on "further gradual increases" in the federal funds rate.
    - Motivated by the risks posed by tight labor market conditions, Alternative C signals that a steeper trajectory for the federal funds rate "will be warranted to achieve a sustainable expansion of economic activity, maintain strong labor market conditions, and keep inflation near the Committee's symmetric 2 percent objective over the medium term." While continuing to describe the risks to the outlook as roughly balanced, Alternative C inserts a cautionary note that "the Committee is closely monitoring the economic and financial implications of high levels of resource utilization."
    - Alternative A conveys that the Committee expects that the federal funds rate will be unchanged in the near term, noting that the "current target range," rather than "further gradual increases," will support sustained economic expansion and inflation near the Committee's symmetric 2 percent objective.
- With respect to the current policy decision and the characterization of the stance of monetary policy:

[1] Alternatively, the Committee might view the language in Alternative A as premature for use in present circumstances, but it might nonetheless consider such language for possible future use once the Committee judges that further increases in the target range for the federal funds rate are no longer warranted.

- Alternatives B and C raise the target range for the federal funds rate to 2 to 2¼ percent. Alternative B no longer describes the stance of monetary policy as accommodative and, consequently, also removes the rationale provided for this stance—supporting strong labor market conditions and a sustained return to 2 percent inflation. Alternative C retains the depiction of monetary policy as remaining accommodative, but it removes the associated rationale, thus conveying a message that maintaining an accommodative stance could soon no longer be appropriate.
- Alternative A maintains the target range for the federal funds rate at 1¾ to 2 percent. The statement removes the description of the stance of monetary policy as remaining accommodative. In combination with the removal of the reference to "further gradual increases," such a statement would signal that the Committee judges the existing stance of policy to be close enough to neutral and that no further tightening is needed, or that a sustained pause in raising rates is appropriate to guard against the risk of overtightening.

August 2018 FOMC Statement

1. Information received since the Federal Open Market Committee met in June indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has stayed low. Household spending and business fixed investment have grown strongly. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that further gradual increases in the target range for the federal funds rate will be consistent with sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective over the medium term. Risks to the economic outlook appear roughly balanced.

3. In view of realized and expected labor market conditions and inflation, the Committee decided to maintain the target range for the federal funds rate at 1-3/4 to 2 percent. The stance of monetary policy remains accommodative, thereby supporting strong labor market conditions and a sustained return to 2 percent inflation.

4. 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 A FOR SEPTEMBER 2018

1. Information received since the Federal Open Market Committee met in ~~June~~ **August** indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has stayed low. Household spending and business fixed investment have grown strongly. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that ~~further gradual increases in~~ the **current** target range for the federal funds rate will be consistent with sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective over the medium term. Risks to the economic outlook appear roughly balanced.

3. In view of realized and expected labor market conditions and inflation, the Committee decided to maintain the target range for the federal funds rate at 1-3/4 to 2 percent. ~~The stance of monetary policy remains accommodative, thereby supporting strong labor market conditions and a sustained return to 2 percent inflation.~~

4. 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 SEPTEMBER 2018

1. Information received since the Federal Open Market Committee met in ~~June~~ **August** indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has stayed low. Household spending and business fixed investment have grown strongly. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that further gradual increases in the target range for the federal funds rate will be consistent with sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective over the medium term. Risks to the economic outlook appear roughly balanced.

3. In view of realized and expected labor market conditions and inflation, the Committee decided to ~~maintain~~ **raise** the target range for the federal funds rate ~~at 1-3/4~~ to 2 **to 2-1/4** percent. ~~The stance of monetary policy remains accommodative, thereby supporting strong labor market conditions and a sustained return to 2 percent inflation.~~

4. 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 SEPTEMBER 2018

1. Information received since the Federal Open Market Committee met in ~~June~~ **August** indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has stayed low. Household spending and business fixed investment have grown strongly. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that further ~~gradual~~ increases in the target range for the federal funds rate will be ~~consistent with sustained~~ **warranted to achieve a sustainable** expansion of economic activity, **maintain** strong labor market conditions, and **keep** inflation near the Committee's symmetric 2 percent objective over the medium term. Risks to the economic outlook appear roughly balanced**, but the Committee is closely monitoring the economic and financial implications of high levels of resource utilization**.

3. In view of realized and expected labor market conditions and inflation, the Committee decided to ~~maintain~~ **raise** the target range for the federal funds rate ~~at 1-3/4~~ to 2 **to 2-1/4** percent. The stance of monetary policy remains accommodative~~, thereby supporting strong labor market conditions and a sustained return to 2 percent inflation~~.

4. 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

The Case for Alternative B

Economic Conditions and Outlook

- Available data indicate that the labor market has continued to strengthen.
  - Private nonfarm payroll gains averaged about 180,000 in the three months ending in August, a slight deceleration from earlier this year, but still well above the pace that the staff estimates is consistent with no change in resource utilization.
  - The unemployment rate was 3.9 percent in July and August, down 0.2 percentage point since the end of 2017, and below all participants' estimates of the longer-run normal rate of unemployment in the June Summary of Economic Projections.
  - Average hourly earnings rose 2.9 percent over the year ending in August, consistent with a tightening labor market amid muted productivity growth.
- Inflation remains close to the Committee's symmetric 2 percent goal.
  - The 12-month change in core PCE prices is estimated to have been 1.9 percent in August. The estimate for total PCE inflation is 2.2 percent over the same period.
  - The staff projects that core PCE inflation will remain close to 2 percent through 2021. Total PCE inflation on a 12-month basis is projected to slow to 2 percent in September and to remain there through the end of the year; thereafter, total PCE inflation is projected to run a bit below the core rate, but still close to 2 percent, as energy prices gradually decline.
  - Both market- and survey-based indicators of longer-term inflation expectations have moved little, on balance, since the July/August FOMC meeting; these measures continue to be consistent with the view that these expectations remain stable.
- The staff estimates that output currently stands about 2¼ percent above its potential level and anticipates that the output gap will continue to widen, reaching more than 3 percent by the end of 2019. In this projection, real GDP growth averages a bit more than 3 percent this year and then gradually slows to 1½ percent by 2021.
- Risks to the outlook appear roughly balanced. Although weaker foreign growth and potential trade policy developments could pose downside risks for economic activity,

it is also possible that fiscal policy will provide a stronger-than-expected boost to GDP growth.

Policy Strategy

- Policymakers may judge that gradual removal of monetary policy accommodation will continue to be appropriate for some time in order to balance risks associated with overly tight resource utilization against the risk of unduly slowing the economy, potentially leading to below-target inflation.
    - An increase in the target range in September would be seen as consistent with the Committee's earlier statements indicating that further gradual adjustments in the stance of monetary policy would be appropriate if the economy evolved about as anticipated.
- Policymakers may expect that inflation will continue to run close to the Committee's symmetric 2 percent inflation goal as further gradual tightening of monetary policy is carried out.
    - Policymakers may also view longer-term inflation expectations as consistent with achieving the Committee's inflation objective.
- Policymakers may no longer see it as appropriate to state that "the stance of monetary policy remains accommodative." An increase in the target range would still leave the federal funds rate below the 2.8 to 3 percent central tendency for the longer-run level of the federal funds rate in the June Summary of Economic Projections. But due to the considerable uncertainty surrounding estimates of the neutral rate, it may become increasingly difficult to provide a reliable assessment of the stance of policy as the federal funds rate continues to rise. Under these circumstances, maintaining a description of the stance of policy as "accommodative" in the statement might convey a false sense of precision about the policy stance and the neutral level of the federal funds rate. Communications challenges associated with this description of the policy stance could increase over time.
- As discussed in the "Monetary Policy Expectations and Uncertainty" box, financial market quotes indicate that investors regard the odds of a rate hike at the upcoming meeting as extremely high. Respondents to the Desk's latest surveys of primary dealers and market participants unanimously expect a rate hike at this meeting. Thus, an increase in the federal funds rate, by itself, would likely elicit little market reaction.

Alternatives

Monetary Policy Expectations and Uncertainty

The expected path of the federal funds rate has not changed substantially since the time of the July/August FOMC meeting. Market participants continue to assign high probabilities to 25-basis-point increases in the target range at the September and December meetings, while expectations for the federal funds rate beyond 2018 have edged higher.

Figure 1 shows the probabilities of 25-basis-point rate hikes at each of the next three FOMC meetings, as implied by quotes on federal funds futures contracts and without adjusting for risk premiums. The implied probability of a rate hike at the September meeting is now almost 100 percent. The implied probability of a rate hike at the November meeting remains close to zero, while the odds on a rate hike at the December meeting have edged up on net over the intermeeting period, from 69 to 76 percent.

Figure 2 shows the average probability distribution for the level of the federal funds rate at the end of 2018 implied by the Desk's surveys. Relative to the surveys taken ahead of the July/August FOMC meeting, the distribution from the September surveys suggests that investors have become more certain that there will be two 25-basis-point rate hikes by the end of the year.

Looking further ahead, Figure 3 shows the expected path of the federal funds rate through January 2020, derived from quotes on federal funds futures contracts, assuming zero term premiums and no rate changes between FOMC meetings. The implied rate at the end of 2019 has risen by about 10 basis points over the intermeeting period, to about 2.85 percent, which suggests that investors expect a total of between three and four 25-basis-point rate hikes between now and the end of next year. The path also suggests that investors continue to attach higher odds for rate hikes to occur at meetings accompanied by the release of updates to the Summary of Economic Projections (SEP) than at meetings without an SEP update.

Figure 4 shows various measures of the expected federal funds rate over the next few years. A straight read of the market-based path derived from OIS quotes (the black line) suggests that investors expect the federal funds rate to peak in early 2020 and to decline slightly in 2021. Adjusting for term premiums using a staff term structure model (the light blue line) suggests that investors expect a faster pace of tightening over the medium term, with about five 25-basis-point hikes expected between now and the end of 2019. This model-based path also suggests that the federal funds rate will continue to rise gradually in 2020, similar to the median from the June SEP projections (the blue dots).

At horizons up to early 2020, the model-based path is similar to the modal projection reported by the median respondent to the Desk's latest surveys (the brown line). However, at longer horizons, the modal path from the surveys lies below the model-based path, and falls slightly in the second half of 2021. The survey-implied mean path (the golden squares) continues to lie noticeably below the survey-implied modal path.[1] In part, this reflects the fact that the average probability that respondents assign to returning to the effective lower bound by the end of 2021 is about 25 percent.

Figure 5 shows the dispersion of respondents' modal federal funds rate projections in the September Desk surveys. Each dot is centered on a different projected rate and is scaled in size by the number of respondents making that projection. Almost all respondents assign the highest odds to two additional rate hikes by the end of 2018. However, respondents' modal projections become noticeably more dispersed at longer horizons. In particular, a small number of respondents have modal projections that decline substantially in 2020 and/or 2021, while only one respondent has a modal projection for the federal funds rate to rise above 4 percent by the end of 2021.

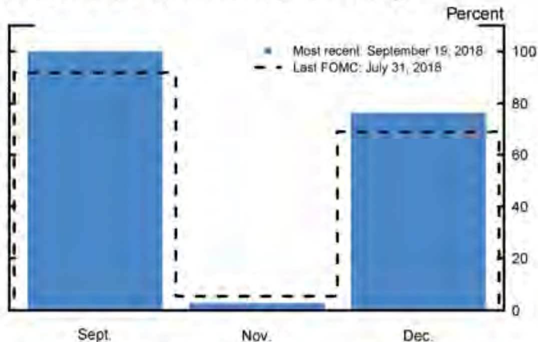
Figure 6 shows measures of the longer-run expected federal funds rate over the past five years. A straight read of long-term forward rates implied by Treasury securities (the red line) suggests that investors' expectations for the average federal funds rate from 5 to 10 years ahead are currently about 3.2 percent. Adjusting for term premiums using various staff term structure models (with the blue region showing a range of such point estimates from three models) suggests that 5-to-10-year-ahead expectations are above the unadjusted forward rates, at between 3.3 and 3.9 percent. In contrast, surveys of professional forecasters suggest that longer-run expectations lie at or below the unadjusted forward rates; the average longer-run forecast from the June Blue Chip survey (the yellow diamonds) and the median forecast from the September Desk surveys (the green diamonds) were 3 and 2.9 percent, respectively.

Since the start of the current tightening cycle in December 2015, the estimates of longer-run federal funds rate expectations from the models and surveys have moved in opposite directions, on net; the model-based estimates are currently between about 15 and 40 basis points higher than at the time of the December 2015 FOMC meeting, while the Blue Chip and Desk longer-run survey measures are 30 and about 40 basis points lower, respectively, than at the time of the December 2015 surveys. This discrepancy between the models and the surveys highlights the difficulty of measuring long-term expectations for interest rates.

[1] The mean path is constructed by combining respondents' probability distributions for the federal funds rate conditional on either moving or not moving to the effective lower bound at any point by the end of 2021. The modal path reflects the median of the respondents' modal projections for the federal funds rate through the end of 2021.

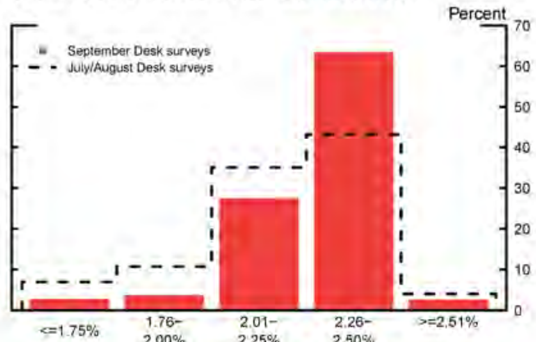
Alternatives

Figure 1: Market−Implied Probability of a Rate Increase at Each of the Next Three FOMC Meetings



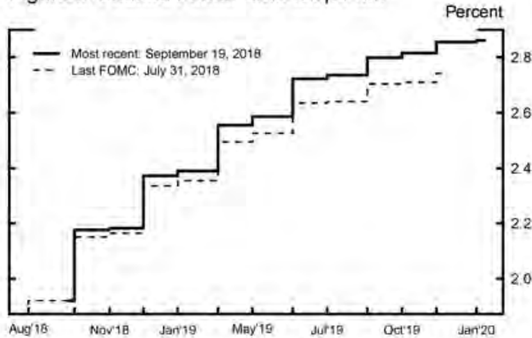
Note: Probabilities implied by a binomial tree fitted to settlement prices on federal funds futures contracts, assuming the policy action at each meeting is either no change or a 25−basis point increase in rates and no intermeeting moves.
Source: CME Group; Federal Reserve Board staff estimates.

Figure 2: Desk Survey Average Probability Distribution of the Federal Funds Rate, Year−End 2018



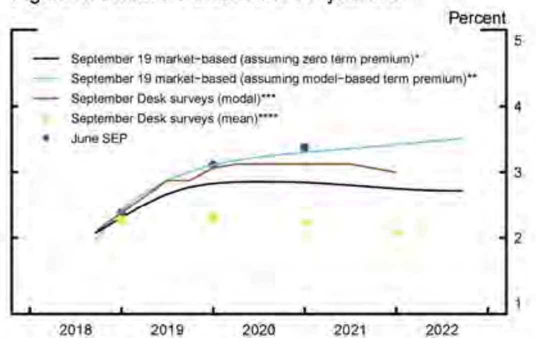
Note: Probabilities are averages of the probabilities assigned by respondents to different ranges of the federal funds rate at the end of 2018.
Source: FRBNY.

Figure 3: Federal Funds Rate Step Path



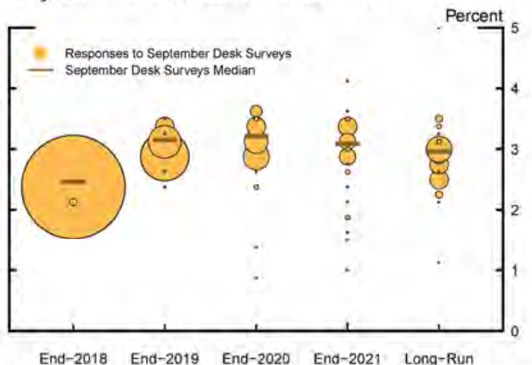
Note: Estimated from settlement prices on federal funds futures contracts, without adjusting for risk premiums, and assuming no intermeeting moves.
Source: CME Group; Federal Reserve Board staff estimates.

Figure 4: Federal Funds Rate Projections



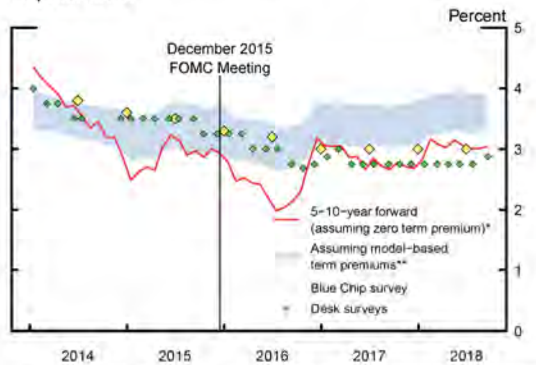
* Estimated using overnight index swap quotes with a spline approach and without adjusting for term premiums.
** Adjusting for premiums using a term structure model maintained by Board staff.
*** Median of respondents' modal paths for the federal funds rate.
**** Estimated from respondents' conditional year−end probability distributions.
Source: Bloomberg; Federal Reserve Board staff estimates; FRBNY; Summary of Economic Projections.

Figure 5: Dispersion of Desk Survey Modal Projections for the Federal Funds Rate



Note: Based on all responses from the September 2018 Desk Surveys. Each dot is centered on a different projected rate and is scaled in size by the number of respondents making that projection.
Source: FRBNY.

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



Note: * Monthly Average 5−10−year forward rate derived from prices of Treasury securities.
** Monthly average 5−10−year forward rate adjusted for alternative model−based term premium estimates.
Source: Blue Chip; FRBNY; Board staff estimates.

  - It is less clear how financial markets might react to the removal of the sentence characterizing the stance of monetary policy as accommodative. This change in the statement should not come as a complete surprise because the FOMC minutes released in August indicated that the Committee agreed that this language would "at some point fairly soon, no longer be appropriate." In the Desk's surveys, roughly one-half of respondents did not explicitly indicate any expectation regarding the "remains accommodative" language. Of those respondents who did explicitly comment on the "remains accommodative" language, the responses were mixed, with about a third expecting the language to be removed and a third expecting it to be modified.[2] Consequently, the removal of the "remains accommodative" language at this meeting may be somewhat surprising to some market contacts.

THE CASE FOR ALTERNATIVE C

Economic Conditions and Outlook

- Policymakers may judge that the labor market is operating appreciably beyond full employment and that economic activity—which is expanding at a faster-than-sustainable rate—will continue to be spurred by expansionary fiscal policy.
  - The unemployment rate remains below each FOMC participant's estimate of its longer-run normal level and is projected to decline further. Other indicators also point to an already-tight labor market; these include a record-high job openings rate, continued reports of firms having difficulty hiring workers, and low levels of initial claims for unemployment insurance.
- Policymakers may judge that the economy is stronger than previously expected. Payroll gains continue to indicate a tightening of the labor market, and—even after accounting for factors that are expected to be transitory—the rebound of real GDP growth in the second quarter appears to have been strong. These developments may suggest that the neutral federal funds rate is higher, and the current monetary policy stance is more accommodative, than previously estimated.
- Policymakers may predict that unwanted upward pressure on inflation is likely to emerge amid a prolonged period of significant labor market tightness. Policymakers

[2] These findings were captured through a standing, open-ended question regarding expectations for changes, if any, to the language referencing communication on the expected path of the target federal funds rate.

may point to the fact that average hourly earnings rose 2.9 percent over the year ending in August, the highest 12-month increase since 2009, as evidence of incipient increases in wage and price inflation.

- Despite seven increases in the target range for the federal funds rate between December 2015 and June 2018 and a net appreciation of the dollar, financial conditions have, by some measures, eased on balance since December 2015. In particular, the spreads between rates on certain investment- and speculative-grade corporate bonds and rates on equivalent-maturity Treasury securities have fallen substantially over this period, while equity prices have increased sharply. Moreover, as discussed in the box "How Have Business and Household Borrowing Conditions Changed Over the Past Year?" in Tealbook A, while the federal funds rate and key interest rates for household and business borrowers have increased over the past year, borrowing conditions have not exhibited a commensurate tightening, in part because of an easing in nonprice credit terms and standards.

Policy Strategy

- Policymakers may judge that a faster removal of policy accommodation than has been suggested by previous FOMC communications is necessary in the near term to avoid significant overheating.
    - Policymakers may be concerned that ongoing above-trend economic growth and an already-strong labor market that continues to tighten could soon result in more notable upward pressure on inflation.
    - They may also judge that a steeper trajectory of rate hikes is needed to prevent the unemployment rate from declining significantly further below its normal longer-run value; such a further decline could make it increasingly challenging to engineer a soft landing as inflation picks up.
    - Additionally, amid elevated asset valuations and high levels of debt at risky firms, policymakers may see the need for a somewhat faster pace of rate increases to avoid a significant buildup of financial imbalances.
- For the above reasons, policymakers may opt to increase the target range for the federal funds rate to 2 to 2¼ percent at this meeting and to omit statement language characterizing the future pace of tightening as gradual.
    - In addition, while policymakers may still wish to characterize the stance of monetary policy as remaining accommodative, they may prefer not to describe

the new level of the target range as "supporting strong labor market conditions and a sustained return to 2 percent inflation." Removing this description would be intended to relay policymakers' judgment that maintaining an accommodative stance could soon no longer be appropriate.

  - Moreover, policymakers may wish to signal that the Committee now judges that a steeper path for the federal funds rate—steeper than suggested by the Committee's previous communications—"will be warranted to achieve a sustainable expansion of economic activity, maintain strong labor market conditions, and keep inflation near the Committee's symmetric 2 percent objective over the medium term."

- Policymakers may also wish to communicate in paragraph 2 that "the Committee is closely monitoring the economic and financial implications of high levels of resource utilization," signaling concern about the risks associated with overheating, including the possibility that a prolonged period of high resource utilization might cause a significant buildup of financial imbalances.
- The adoption of Alternative C would likely come as a surprise to market participants. Market participants could read such a statement as indicating that the Committee intends to raise the federal funds rate more rapidly than previously expected. Medium- and longer-term real interest rates could rise, as could the exchange value of the dollar; equity prices and inflation compensation could fall.

THE CASE FOR ALTERNATIVE A

Economic Conditions and Outlook

- Policymakers may see that inflation has moved close to 2 percent and that it is projected to remain close to that level on a sustained basis.
- Moreover, policymakers may view the labor market as operating close to or at full employment. The unemployment rate is little changed since the start of the year; the labor force participation rate has stayed about the same, on balance, over the past four years.
- Policymakers may observe that, though real GDP is currently rising at a brisk pace, a gradual slowing of growth is projected over the next few years, in part reflecting waning fiscal impetus.

- Policymakers could judge that the current level of the federal funds rate lies within the confidence bands of a range of estimates of the neutral level for the federal funds rate. Furthermore, they may see developments in Treasury markets—particularly the flattening yield curve—as supporting the view that current policy is close to neutral.

Policy Strategy

- Policymakers may assess that both objectives of the dual mandate are as close to being fulfilled as in any time in recent memory. They may consequently judge it prudent to stop the gradual increases in the federal funds rate so as not to undermine the expansion of economic activity and the sustained return of inflation to 2 percent.[3]
    - Policymakers may note that, while the expansion has been robust, the economy has shown few signs of overheating. The labor market has improved at a remarkably steady pace over the past few years without generating a large increase in either nominal wage growth or inflation. Moreover, inflation expectations have remained stable over this period.
    - Policymakers may also view substantial risks associated with tightening too quickly or too much. Such policy actions could undermine the expansion or cause inflation to run persistently below the Committee's 2 percent objective. An overly restrictive policy stance could be reflected in an inversion of the yield curve, something that has in the past been associated with recessions. Furthermore, a slowdown in growth abroad or new trade policy developments could also restrain the economy over the near term.
    - Finally, policymakers might note that monetary policy affects economic activity with a lag, and that the removal of accommodation that has taken place over the past few years will continue to act as a restraint on economic growth for some time, mitigating the need for more increases in the target range federal funds rate at this stage.
- Policymakers may continue to view the current state of the financial system as sound and the potential for a buildup of risks to financial stability as limited, or they may judge that interest rate policy is not an effective means of addressing any significant financial stability concerns that may emerge.

[3] Conversely, policymakers might view the gradual removal of accommodation as still warranted for the time being, but might consider the language in Alternative A as a template for a future policy statement.

- A statement along the lines of Alternative A would likely be regarded as an important change in the Committee's policy outlook and would reduce expectations of rate hikes in the near future. Such a statement could cause medium and longer-term interest rates to fall, while additionally leading to a decline in the exchange value of the dollar. Equity prices and inflation compensation could rise.

IMPLEMENTATION NOTE

If the Committee decides to maintain the current target range for the federal funds rate, an implementation note that indicates no change in the administered rates—the interest rates on required and excess reserves, the offering rate on overnight reverse repurchase agreements, and the primary credit rate—would be issued. If the Committee decides to raise the target range for the federal funds rate, an implementation note that communicates the changes the Federal Reserve decided to make in these three policy tools would be issued. Draft implementation notes that correspond to these two cases appear on the following pages; struck-out text indicates language deleted from the August directive and implementation note, bold red underlined text indicates added language, and blue underlined text indicates text that links to websites.

Implementation Note for September 2018 Alternative A

Release Date: September 26, 2018

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 (FOMC) in its statement on ~~August 1~~ **September 26**, 2018:

- The Board of Governors of the Federal Reserve System voted **[** unanimously **]** to maintain the interest rate paid on required and excess reserve balances at 1.95 percent, effective ~~August 2~~ **September 27**, 2018.

- 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 ~~August 2~~ **September 27**, 2018, 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 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 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.

  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~~ **September** that exceeds $24 billion, and to **continue** reinvest**ing** 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~~ **September** that exceeds $16 billion. **Effective in October, the Committee directs the Desk to roll over at auction the amount of principal payments from the Federal Reserve's holdings of Treasury securities maturing during each calendar month that exceeds $30 billion, and to reinvest 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 2.50 percent.

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 September 2018 Alternatives B and C

Release Date: September 26, 2018

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 (FOMC) in its statement on ~~August 1~~ **September 26**, 2018:

- The Board of Governors of the Federal Reserve System voted **[** unanimously **]** to ~~maintain~~ **raise** the interest rate paid on required and excess reserve balances ~~at~~ **to** ~~1.95~~ **2.20** percent, effective ~~August 2~~ **September 27**, 2018.

- 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 ~~August 2~~ **September 27**, 2018, 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 **to 2-1/4** 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 ~~1.75~~ **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.
  >
  > 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~~ **September** that exceeds $24 billion, and to **continue** reinvest**ing** 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~~ **September** that exceeds $16 billion. **Effective in October, the Committee directs the Desk to roll over at auction the amount of principal payments from the Federal Reserve's holdings of Treasury securities maturing during each calendar month that exceeds $30 billion, and to reinvest 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.

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 1/4 percentage point increase in** the primary credit rate ~~at the existing level of 2.50~~ **to 2.75** percent**, effective September 27, 2018**. **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.

Balance Sheet and Income Projections

The staff has prepared projections of the Federal Reserve's balance sheet and elements of the associated income statement that are consistent with the baseline economic outlook presented in Tealbook A. Key features of these projections are described below.

SOMA redemptions and reinvestments. As reported in the exhibit titled "Redemptions and Reinvestments of SOMA Principal Payments," the staff projects that the balance sheet normalization program initiated in October 2017 will lead to the redemption of $229 billion of Treasury securities and about $152 billion of agency securities over 2018.[1] During this same period, $197 billion of principal from maturing Treasury securities and about $72 billion of principal from agency securities will be reinvested. Under the staff's current baseline forecast of rising longer-term interest rates, reinvestments of agency securities are projected to cease by October of this year, when the cap on monthly redemptions of agency securities rises to its $20 billion maximum.[2] However, the projections for agency securities are subject to considerable uncertainty because unscheduled prepayments depend on factors that are difficult to predict, including the realized path of mortgage rates.[3]

Evolution of the size of the balance sheet. One key assumption behind the balance sheet projection is that the longer-run level of reserve balances will be $500 billion.[4] Using the baseline economic outlook in the September Tealbook, the projected

[1] Projections include a preliminary estimate of September 2018 principal payments from agency securities.

[2] Once the cap on monthly reductions in SOMA holdings of Treasury securities has been fully phased in, reinvestments of principal from maturing Treasury securities will take place primarily in the middle month of each quarter.

[3] If actual principal payments were to breach the $20 billion cap before the size of the balance sheet is normalized, then the Desk would reinvest in MBS the amount by which the principal payments received during any month exceeds the cap. For further details, see the FOMC memo titled "Operational Readiness for MBS Reinvestments" (June 2018).

[4] Other noteworthy assumptions about liability items underlying the projections are as follows: The Treasury General Account is assumed to increase in line with nominal GDP; Federal Reserve notes in circulation are assumed to increase at an average annual pace of about 6 percent through 2020 and at the same pace as nominal GDP thereafter; the foreign repo pool and balances in the accounts of designated financial market utilities remain at their August 2018 levels of approximately $240 billion and $65 billion,

Redemptions and Reinvestments of SOMA Principal Payments

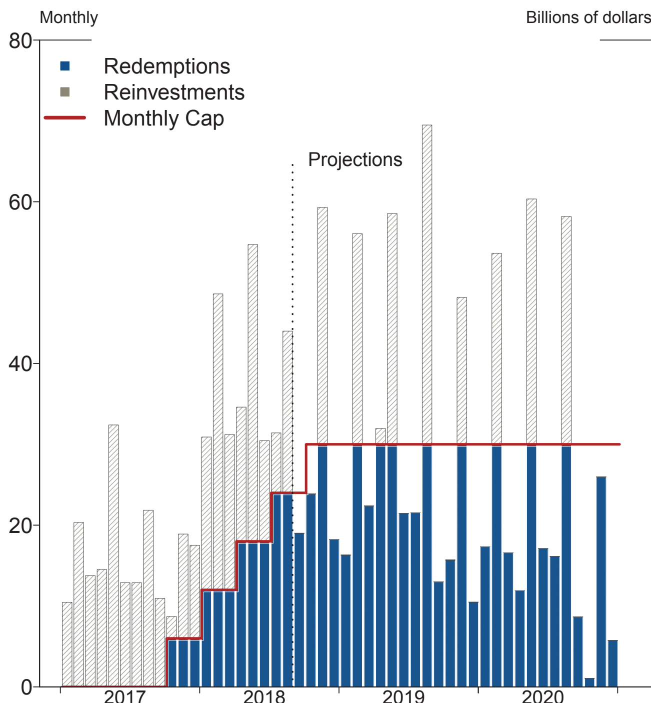
Projections for Treasury Securities
(Billions of dollars)

	Redemptions		Reinvestments	
	Period	Since Oct. 2017	Period	Since Oct. 2017
2018: Q3	67.0	175.0	27.4	195.0
2018: Q4	72.1	247.1	29.3	224.3
2018	229.1	247.1	197.2	224.3
2019	270.8	517.9	114.2	338.5
2020	210.5	728.4	82.1	420.6

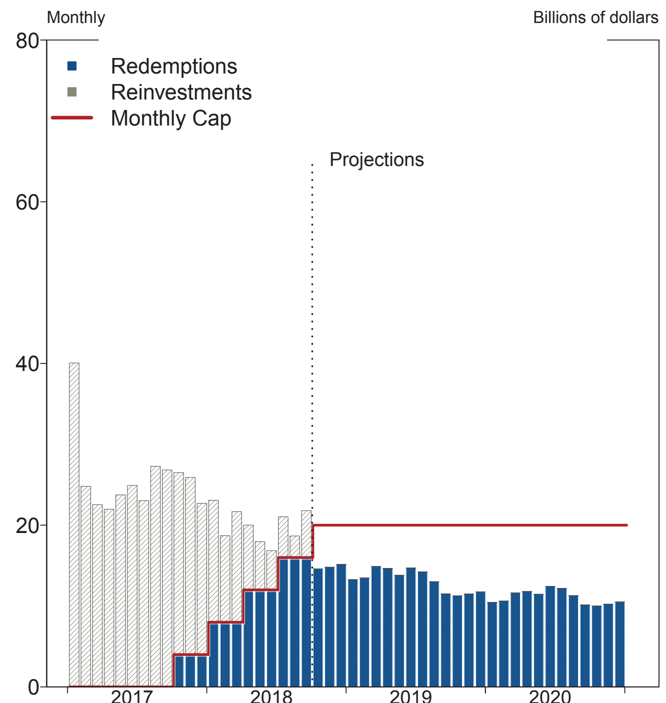
Projections for Agency Securities
(Billions of dollars)

	Redemptions		Reinvestments	
	Period	Since Oct. 2017	Period	Since Oct. 2017
2018: Q3	48.0	120.0	13.5	132.5
2018: Q4	44.5	164.2	0.0	132.5
2018	152.2	164.5	71.8	132.5
2019	158.1	322.6	0.0	132.5
2020	132.7	455.3	0.0	132.5

Balance Sheet & Income



Note: Projection dependent on assumed distribution of future Treasury issuance.



Note: Projection dependent on future interest rates and housing market developments. Sept. 2018 principal payments are preliminary.

redemption of securities from the Federal Reserve's portfolio, as well as other assumptions, this level of reserve balances will be reached in the second quarter of 2021, unchanged from the July Tealbook projection (see the exhibit titled "Total Assets and Selected Balance Sheet Items" and the table that follows the exhibit).[5]

From the start of the balance sheet reduction program in October 2017 to its projected conclusion in 2021, when the size of the balance sheet normalizes, the Federal Reserve's securities holdings are predicted to decline about $1.3 trillion, with holdings of Treasury and agency securities shrinking about $800 billion and $500 billion, respectively. When the size of the balance sheet is normalized, the SOMA portfolio is projected to be just a touch less than $3 trillion, consisting of about $1.7 trillion in Treasury securities and $1.3 trillion in agency securities.

Once the declines in asset holdings associated with normalization have taken place, the size of the balance sheet is projected to stand at roughly 13 percent of nominal GDP, compared with a peak of about 25 percent in 2014 and a pre-crisis average of about 6 percent. After the size of the balance sheet is normalized, SOMA holdings will begin to rise, keeping pace with the increases in Federal Reserve liabilities—including Federal Reserve notes in circulation and the Treasury General Account (TGA)—as well as Federal Reserve Bank capital. Expressed as shares of nominal GDP, Federal Reserve assets and liabilities are expected to edge down.

Federal Reserve remittances. Remittances to the Treasury are projected to decline to $62 billion this year from $80 billion in 2017 (see the "Income Projections" exhibit).[6] This decline primarily reflects the realized and expected increases in the

respectively; and take-up at the overnight RRP facility, which averaged under $2 billion in August 2018, is assumed to be $0.

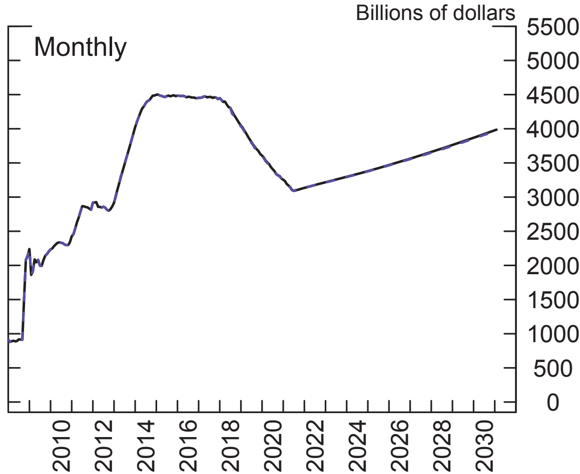
[5] Many factors will influence the size of the balance sheet upon normalization, including banks' post-crisis underlying demand for reserves. Generally speaking, the size of the balance sheet is considered to be normalized when the resumption of purchases of Treasury securities is required to satisfy demand for reserve balances and accommodate the expansion of other key non-reserve liability items.

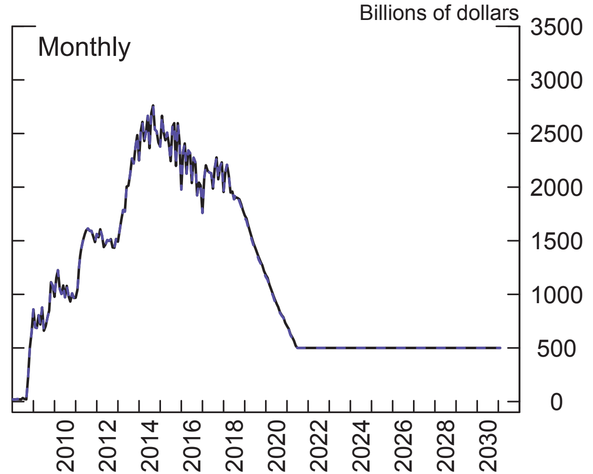
[6] This estimate includes two mandated transfers to the Treasury due to reductions to the statutory limit on aggregate Reserve Bank surplus. First, $2.5 billion was transferred in February as a result of Section 7 of the Federal Reserve Act being amended by the Bipartisan Budget Act of 2018, enacted in February 2018. Second, $675 million was transferred in June, reflecting Section 7 being amended by the Economic Growth, Regulatory Relief, and Consumer Protection Act enacted in May 2018.

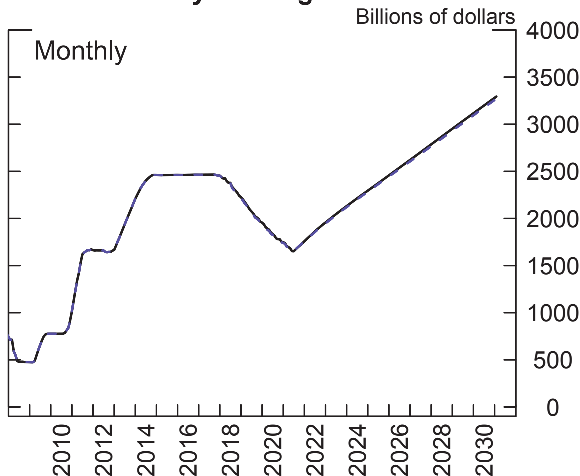
Balance Sheet & Income

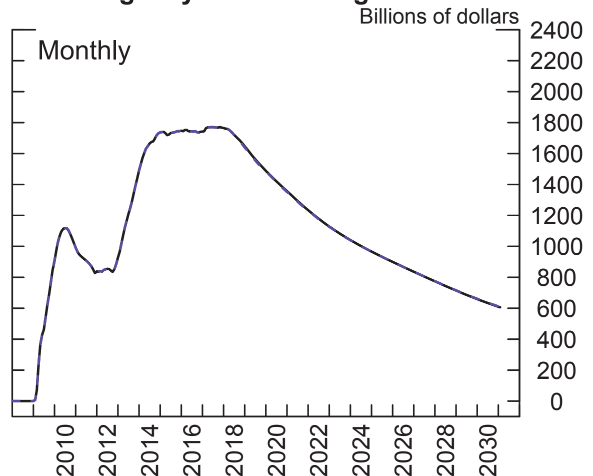
Total Assets and Selected Balance Sheet Items

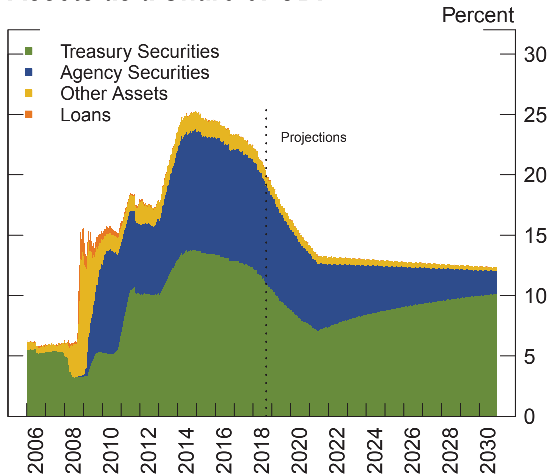
September Tealbook baseline — July Tealbook baseline

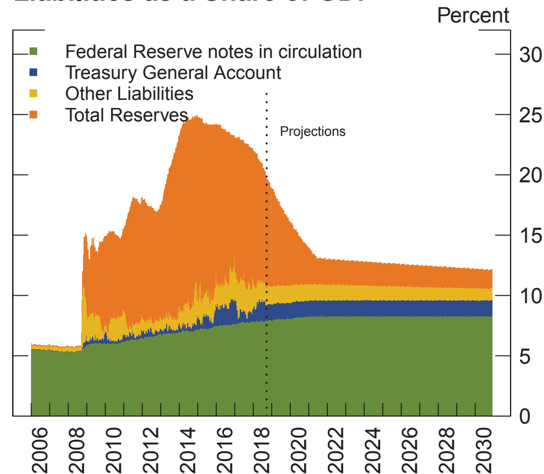












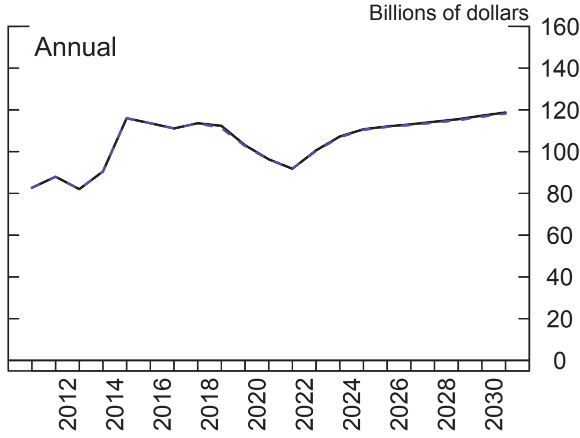
Federal Reserve Balance Sheet
End-of-Year Projections -- September Tealbook
(Billions of dollars)

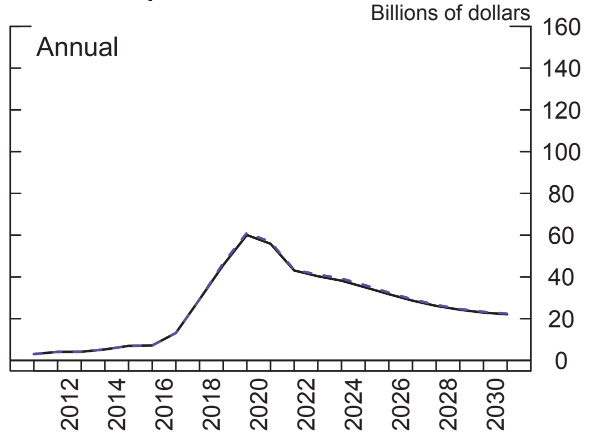
	Aug 31, 2018	2018	2020	2022	2024	2026	2030
Total assets	4,207	4,047	3,254	3,217	3,380	3,562	3,978
Selected assets							
Loans and other credit extensions*	2	0	0	0	0	0	0
Securities held outright	4,013	3,872	3,106	3,087	3,264	3,458	3,892
U.S. Treasury securities	2,313	2,223	1,748	1,957	2,295	2,620	3,280
Agency debt securities	2	2	2	2	2	2	2
Agency mortgage-backed securities	1,697	1,647	1,356	1,128	966	836	610
Unamortized premiums	146	141	111	90	75	63	43
Unamortized discounts	-14	-13	-10	-8	-7	-6	-5
Total other assets	60	47	47	47	47	47	47
Total liabilities	4,168	4,009	3,215	3,174	3,333	3,511	3,915
Selected liabilities							
Federal Reserve notes in circulation	1,638	1,679	1,892	2,033	2,170	2,323	2,672
Reverse repurchase agreements	239	240	240	240	240	240	240
Deposits with Federal Reserve Banks	2,286	2,086	1,079	897	919	944	1000
Reserve balances held by depository institutions	1,898	1,737	705	500	500	500	500
U.S. Treasury, General Account	318	279	304	327	349	373	429
Other deposits	70	70	70	70	70	70	70
Earnings remittances due to the U.S. Treasury	1	0	0	0	0	0	0
Total Federal Reserve Bank capital**	39	39	39	43	47	52	62

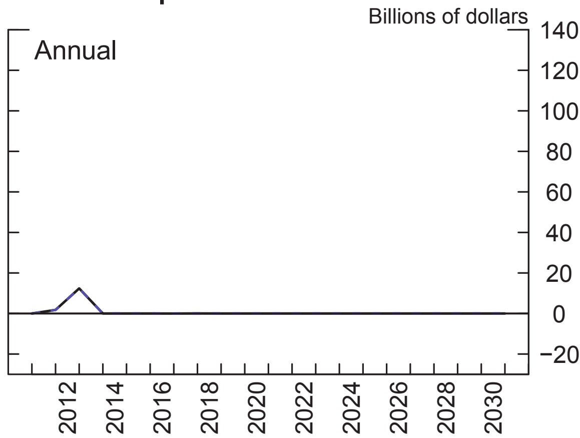
Source: Federal Reserve H.4.1 statistical releases and staff calculations.
Note: Components may not sum to totals due to rounding.
*Loans and other credit extensions includes primary, secondary, and seasonal credit; central bank liquidity swaps; and net portfolio holdings of Maiden Lane LLC.
**Total capital includes capital paid-in and capital surplus accounts.

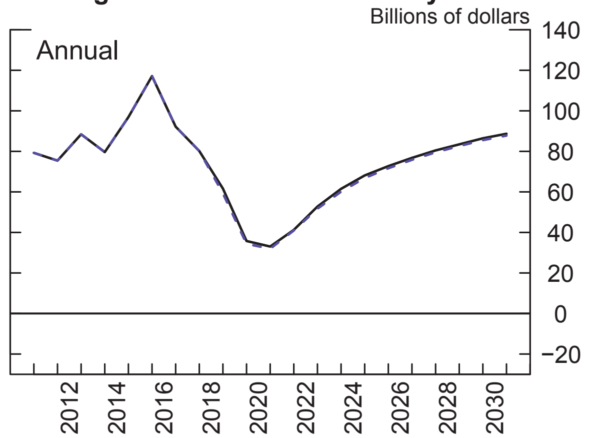
Income Projections

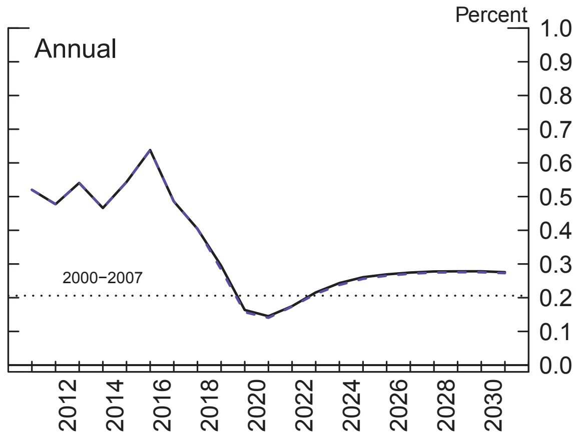
September Tealbook baseline — July Tealbook baseline

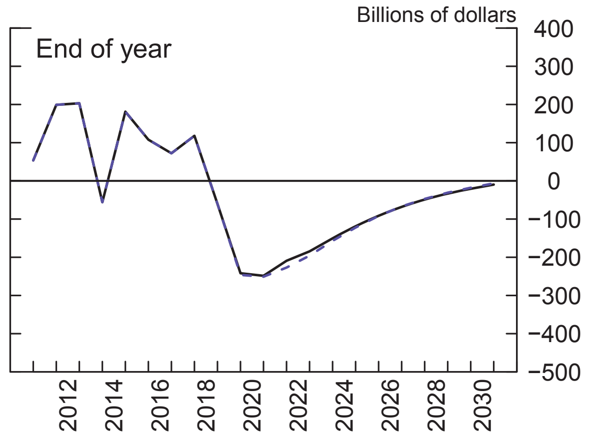












interest rate paid on reserves in 2018.[7] Total annual interest expense is projected to rise by $16 billion to $46 billion this year, while interest income from SOMA holdings is expected to decline slightly, to $112 billion. As the target range for the federal funds rate moves up and interest expense on reserve balances increases, remittances are expected to decline further and to bottom out at $33 billion in 2020. Thereafter, remittances increase due to a decrease in interest expense as the target range for the federal funds rate is projected to decline, and to the increase in interest income as the Desk resumes purchases of Treasury securities for the SOMA portfolio.

The projected path for remittances over the next few years is similar to that in the July Tealbook. As shown in the bottom left panel of the "Income Projections" exhibit, annual remittances average about 0.25 percent of nominal GDP over the projection period, slightly higher than their pre-crisis average.

Unrealized gains or losses. The SOMA portfolio was in a net unrealized loss position of about $25 billion at the end of August. With longer-term interest rates expected to rise further over the next several years, the unrealized loss position is expected to peak at $260 billion in 2020:Q3. Of this amount, $105 billion is attributable to Treasury securities and $155 billion to agency MBS. The unrealized loss position subsequently narrows, in large part because the value of securities acquired under the Federal Reserve's large-scale asset purchase programs returns to par as those securities approach maturity. The net unrealized position over the projection period is little changed from the July Tealbook.

Term premium effect. As shown in the table "Projections for the 10-Year Treasury Term Premium Effect," SOMA securities held as a result of the Federal Reserve's asset purchase programs are currently estimated to be reducing the term premium in the 10-year Treasury yield by about 80 basis points, the same as in the previous Tealbook; this effect is projected to fade gradually over time. The estimated path of the term premium effect depends on the difference between the expected path of the Federal Reserve's balance sheet over coming years and a benchmark counterfactual projection based on the configuration of the balance sheet that prevailed before the

[7] 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 August FOMC Implementation Note, we assume that the interest rates paid on reserve balances will be set five basis points below the top of the target range for the federal funds rate. We continue to assume that the offering rate on overnight RRPs will be set at the bottom of the range.

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

Date	September Tealbook	July Tealbook
Quarterly Averages		
2018:Q3	-78	-78
Q4	-75	-76
2019:Q4	-65	-66
2020:Q4	-58	-58
2021:Q4	-52	-53
2022:Q4	-49	-49
2023:Q4	-46	-46
2024:Q4	-43	-43
2025:Q4	-40	-40
2026:Q4	-38	-38
2027:Q4	-35	-36
2028:Q4	-34	-34
2029:Q4	-32	-32
2030:Q4	-30	-31

* The figures show the estimated effects on the 10-year Treasury term premium resulting from the Federal Reserve's large-scale asset purchases.

financial crisis of 2007–2008. In this counterfactual projection it is assumed that reserve balances reach their longer-run value at $100 billion.

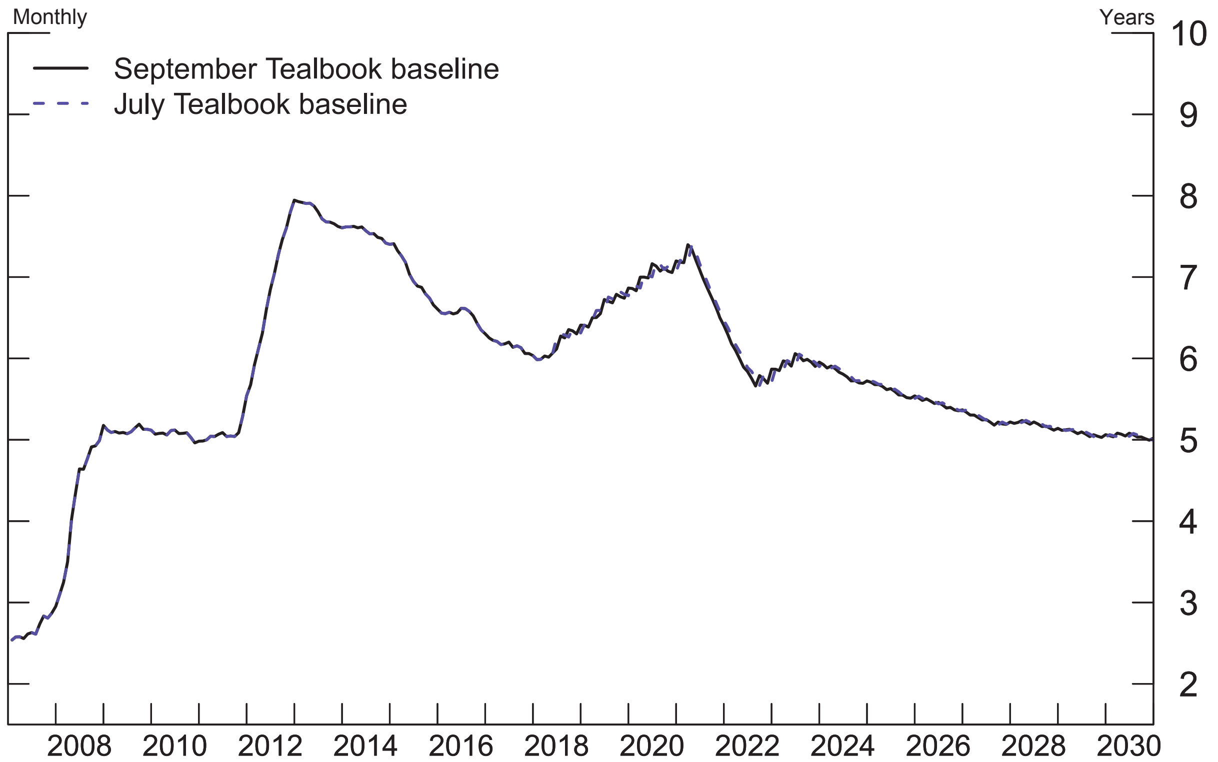
SOMA characteristics. As shown in the top panel of the "Projections for the Characteristics of SOMA Treasury Securities Holdings" exhibit, the weighted-average duration of the SOMA Treasury portfolio is currently about six years. This measure is projected to increase over the course of balance sheet size normalization, as the pace of redemptions picks up and longer-duration securities become a larger share of the portfolio. In terms of the composition of the portfolio, the share of agency MBS is expected to peak at 44 percent shortly before the size of the balance sheet is expected to be normalized, reflecting the faster pace of roll-offs of Treasury securities, and then to decline to less than 30 percent at the end of 2024.

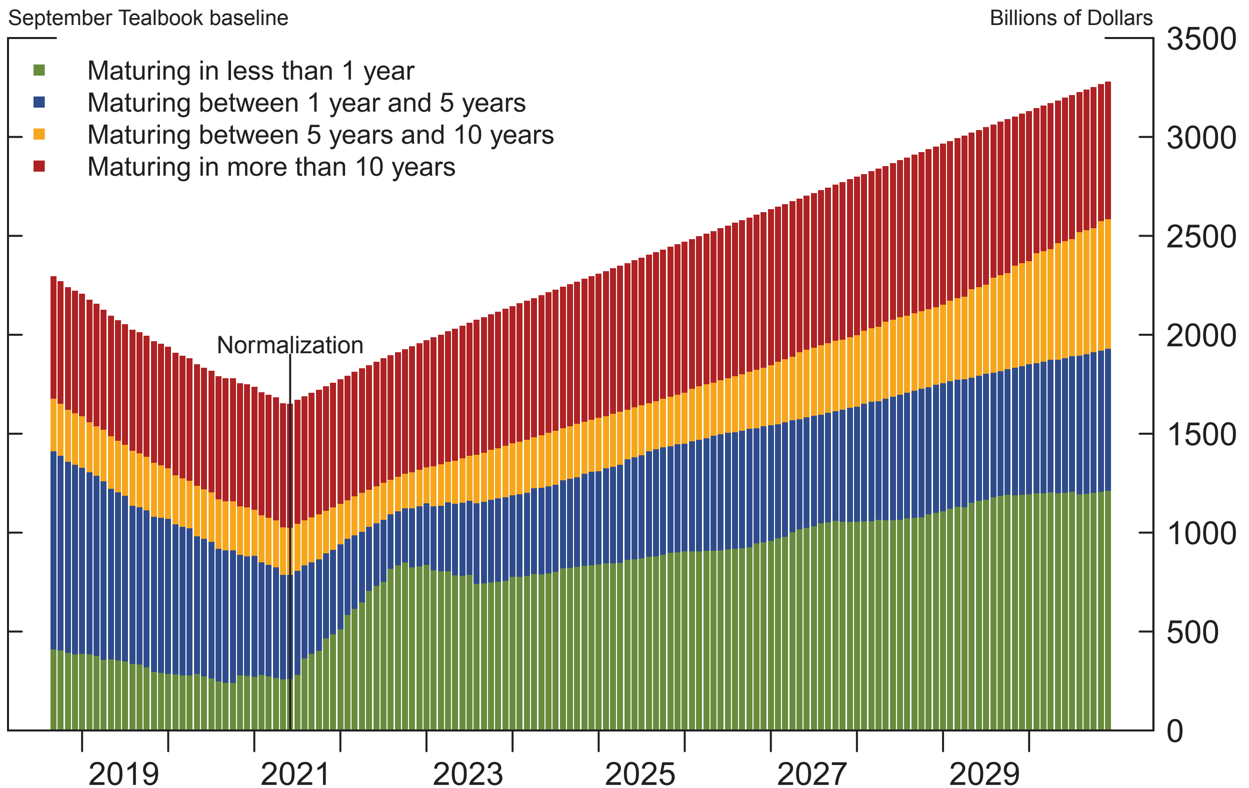
After normalization of the size of the balance sheet in 2021, the duration of the SOMA Treasury portfolio is projected to decline as the Desk begins adding securities to the SOMA portfolio to keep pace with the expansion in non-reserve liabilities. The initial sharp decline in duration results from the staff's assumption that the Desk will purchase only Treasury bills until these securities account for one-third of the Federal Reserve's Treasury securities portfolio, close to their pre-crisis share.[8] Thereafter, purchases of Treasury securities are assumed to be spread across the maturity spectrum (see the bottom panel of the exhibit titled "Projections for the Characteristics of SOMA Treasury Securities Holdings").

[8] Currently, excluding small-value test operations, the SOMA portfolio contains no Treasury bills.

Balance Sheet & Income

Projections for the Characteristics of SOMA Treasury Securities Holdings





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
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
TPE	Term premium effects
ZLB	zero lower bound