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.

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Content last modified 1/12/2024.

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Class I FOMC – Restricted Controlled (FR)

Report to the FOMC on Economic Conditions and Monetary Policy

Book B

Monetary Policy Alternatives

July 26, 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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Monetary Policy Alternatives

Information received since the Committee met in June 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 growth appears to have rebounded in the second quarter by even more than previously expected. The staff continues to project above-trend GDP growth through 2019 and high levels of resource utilization over the medium term. The 12-month changes in headline and core PCE prices are estimated to have been 2.3 and 1.9 percent, respectively, in June. For this year as a whole, as well as for 2019 and 2020, the staff projects both headline and core PCE inflation close to 2 percent.

There are two key questions that the Committee is facing 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 suggested by recent policy communications remains appropriate, given the current economic outlook and associated risks. The three alternative draft statements have been prepared with these questions in mind.

Alternative B's characterization of the labor market is the same as that in the June statement; the expansion in economic activity is described as strong rather than solid. Alternative B notes that both overall and core measures of 12-month inflation remain near 2 percent. It maintains the current target range for the federal funds rate and reiterates the Committee's 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.

Alternative C takes the view that a steeper policy rate path than signaled in the Committee's recent communications will likely be appropriate. It registers some concern about potential overheating by noting that "the Committee is closely monitoring the economic and financial implications of high levels of resource utilization." Consequently, Alternative C 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 view that longer-run inflation expectations may currently be too low for the Committee to achieve its symmetric objective of 2 percent

inflation. Alternative A articulates an outlook in which inflation exceeds 2 percent for a time conditioned on "the current stance of monetary policy" rather than further gradual increases in the federal funds rate. Accordingly, this alternative maintains the current target range for the federal funds rate.

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

- The three alternatives are similar in their assessments of the incoming data. All three alternatives note that growth of household spending and business fixed investment has been strong. Alternatives B and C state that overall and core inflation "remain near 2 percent," while Alternative A observes that they "have moved close to 2 percent." The alternatives differ slightly in characterizing inflation expectations:
  - Alternatives B and C describe indicators of longer-term inflation expectations as "little changed, on balance" over the intermeeting period.
  - Alternative A states that these indicators "remain low."
- 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 overly tight labor market conditions, Alternative C signals that a steeper trajectory of 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 notes that "the Committee is closely monitoring the economic and financial implications of high levels of resource utilization."
  - Alternative A projects that inflation will "move modestly above 2 percent for a time and then run near the Committee's symmetric 2 percent objective" given "the current stance of monetary policy." Alternative A states that this

inflation path "should help ensure that longer-term inflation expectations are consistent with the Committee's symmetric objective of 2 percent inflation."

- With respect to the current policy decision:
    - Alternatives A and B leave the target range for the federal funds rate unchanged at 1¾ to 2 percent. Both Alternatives characterize the stance of monetary policy as remaining accommodative and supporting strong labor market conditions and inflation at 2 percent.
    - Alternative C raises the target range for the federal funds rate to 2 to 2¼ percent. Alternative C also characterizes the stance of monetary policy as remaining accommodative, but it removes the reference that the accommodative stance supports strong labor market conditions and a sustained return to 2 percent inflation. Removal of this reference would convey a judgement that maintaining an accommodative stance could soon no longer be appropriate.

Alternatives

JUNE 2018 FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in May indicates that the labor market has continued to strengthen and that economic activity has been rising at a solid rate. Job gains have been strong, on average, in recent months, and the unemployment rate has declined. Recent data suggest that growth of household spending has picked up, while business fixed investment has continued to grow strongly. On a 12-month basis, both overall inflation and inflation for items other than food and energy have moved close to 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 raise the target range for the federal funds rate to 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 JULY/AUGUST 2018

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

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~~ **the current stance of monetary policy** will be consistent with sustained expansion of economic activity~~,~~ **and** strong labor market conditions~~,~~**.** ~~and~~ Inflation **is expected to move modestly above 2 percent for a time and then run** 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 ~~raise~~ **maintain** the target range for the federal funds rate ~~to~~ **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~~ **period of inflation modestly above** 2 percent ~~inflation~~. **This inflation outcome should help ensure that longer-term inflation expectations are consistent with the Committee's symmetric objective of 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 JULY/AUGUST 2018

1. Information received since the Federal Open Market Committee met in ~~May~~ **June** indicates that the labor market has continued to strengthen and that economic activity has been rising at a ~~solid~~ **strong** rate. Job gains have been strong, on average, in recent months, and the unemployment rate has ~~declined~~ **stayed low**. ~~Recent data suggest that growth of~~ Household spending ~~has picked up, while~~ **and** business fixed investment ~~has continued to grow~~ **have grown** strongly. On a 12-month basis, both overall inflation and inflation for items other than food and energy ~~have moved close to~~ **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 ~~raise~~ **maintain** the target range for the federal funds rate ~~to~~ **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 C FOR JULY/AUGUST 2018

1. Information received since the Federal Open Market Committee met in ~~May~~ **June** indicates that the labor market has continued to strengthen and that economic activity has been rising at a ~~solid~~ **strong** rate. Job gains have been strong, on average, in recent months, and the unemployment rate has ~~declined~~ **stayed low**. ~~Recent data suggest that growth of~~ Household spending ~~has picked up, while~~ **and** business fixed investment ~~has continued to grow~~ **have grown** strongly. On a 12-month basis, both overall inflation and inflation for items other than food and energy ~~have moved close to~~ **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 raise the target range for the federal funds rate to ~~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.

THE CASE FOR ALTERNATIVE B

Economic Conditions and Outlook

- Available data indicate that the labor market has continued to strengthen.
  - Payroll gains averaged 211,000 in the three months ending in June, well above the pace that the staff estimates is consistent with no change in resource utilization.
  - The unemployment rate has stayed low. The uptick to 4.0 percent in June was largely due to a rise in the participation rate.
  - The unemployment rate is currently below all participants' estimates of the longer-run normal rate of unemployment in the June Summary of Economic Projections.
  - Average hourly earnings rose 2¾ percent over the year ending in June. This reading is only modestly higher than a year earlier.
- 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 June. The estimate for total PCE inflation is 2.3 percent over the same time period.
  - The staff projects that core PCE inflation will remain close to 2 percent through 2020. Total PCE inflation on a 12-month basis is projected to slow to just below 2 percent by the end of 2018 as energy prices are expected to continue to level off; thereafter, total PCE inflation is projected to run a bit below core inflation, but still close to 2 percent, as energy prices are projected to gradually decline.
  - Both market- and survey-based indicators of longer-term inflation expectations have moved little, on balance, since the June FOMC meeting; both continue to be consistent with the view that these expectations remain stable.
- The staff estimates that output currently stands about 2 percent above its potential level and that the output gap will continue to widen, reaching more than 3 percent in 2019. In this projection, real GDP growth increases to almost 3 percent this year and then gradually slows to 1¾ percent in 2020.

- Foreign real GDP growth appears to have moderated from its fast pace earlier this year. However, the staff projects that foreign real GDP will expand at a solid pace going forward.
- Risks to the outlook appear roughly balanced. Although 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 see economic conditions as continuing to evolve in line with their expectations. With Alternative B, policymakers would continue to signal that the economic outlook calls for further gradual increases in the target range for the federal funds rate, but, in light of the two increases earlier this year, not for an adjustment to the stance of monetary policy at the July/August meeting.
  - Policymakers may judge that gradual removal of monetary policy accommodation may continue to be appropriate in order to balance the risk of overly tight resource utilization against the risk of inflation persistently falling below 2 percent.
- Policymakers may see recent inflation developments as confirming the view that the idiosyncratic factors that held down inflation last year were transitory. They 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 takes place.
  - Policymakers may also view longer-term inflation expectations to be reasonably well anchored and consistent with the Committee's inflation objective.
- Policymakers may still see it appropriate to state that "the stance of monetary policy remains accommodative." The current target range for the federal funds rate remains 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. However, as was noted in the minutes of the June meeting, policymakers may believe it desirable to modify soon the "remains accommodative" language. As background, the box titled "The Removal of the 'Remains Accommodative' Language in 2005" recounts the FOMC's discussions in the mid-2000s that led to the removal of such language.
- A statement along the lines of Alternative B seems unlikely to generate appreciable changes in asset prices. As discussed in the "Monetary Policy Expectations and

Alternatives

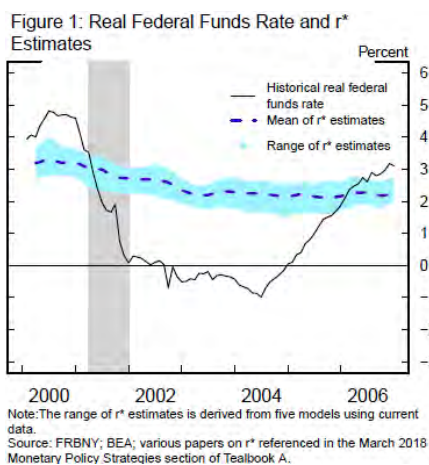
The Removal of the "Remains Accommodative" Language in 2005

A key question the Committee is likely to face before too long is when it should stop characterizing the stance of monetary policy as remaining accommodative. The previous time the Committee faced this decision was in late 2005. Based on the FOMC meeting transcripts, this box reviews the Committee's discussions over that period that led to the removal of the "remains accommodative" language from the statement at the December 2005 meeting.

Between June 2004 and November 2005, the Committee raised the federal funds rate target from 1 percent to 4 percent, and each rate increase was accompanied by an FOMC statement that referred to monetary policy as accommodative. During most of this period, postmeeting statements noted that "The Committee believes that, even after this action, the stance of monetary policy remains accommodative." [1]

Early in the tightening cycle, there was broad consensus among Committee participants that monetary policy was accommodative. This view reflected in part the fact that, at the time, the real federal funds rate was below most estimates of the neutral real federal funds rate, such as some of those shown in figure 1. As the Committee steadily raised the policy rate in 2005, FOMC participants had more frequent discussions about the appropriateness of continuing to characterize the stance of monetary policy as accommodative. These discussions often cited estimates of the neutral rate of interest and its potential drivers—such as labor productivity growth, investment, and international economic and financial factors. Inflation developments during 2005 also generated discussions of how estimates of expected inflation might alter the Committee's understanding of the current real federal funds rate and therefore the perceived real rate gap.

Figure 1: Real Federal Funds Rate and r* Estimates



Note: The range of r* estimates is derived from five models using current data.
Source: FRBNY; BEA; various papers on r* referenced in the March 2018 Monetary Policy Strategies section of Tealbook A.

Table 1: Economic Conditions at November 2005 FOMC Meeting

	Q1	Q2	Q3	Q4
Core PCE Inflation (YoY)	2.16	1.97	1.94	1.91
Output Gap	−0.71	−0.65	−0.61	−0.50
Unemployment Gap	0.25	0.11	0.02	0.05
Rate Gap (2018 est)*	−1.25	−0.66	−0.09	−0.19

*The rate gap shown here is the difference between the real interest rate and the bottom of the range of estimates of its neutral level in each quarter of 2005, using current data.

[1] This sentence was dropped at the September 2005 meeting, but the September and November FOMC statements continued to refer to "monetary policy accommodation." The tightening cycle ended in June 2006, with the federal funds rate target reaching 5¼ percent, after 17 consecutive 25 basis point increases.

At the November 2005 meeting, the staff reported that, during that year, indicators of the economy, shown in table 1, had generally moved toward full resource utilization and that the real interest rate had reached estimates of its neutral level. At that meeting, participants began to discuss more extensively when to stop characterizing the stance of monetary policy as accommodative in the postmeeting statement.

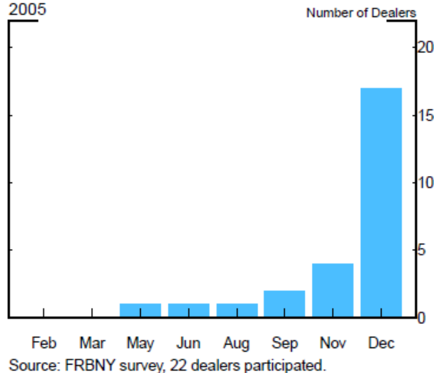
The discussions at the November and December meetings revealed two broad views among FOMC participants with regard to the influence of estimates of the neutral rate of interest on the statement's language. Some participants stated that the real rate was either close to or had reached its neutral level, and judged it appropriate for the Committee to acknowledge this development by removing the accommodative language. Staff estimates of the neutral rate reported in the December 2005 Bluebook, which ranged from 2.1 to 3.5 percent at that time, suggested that the real federal funds rate had reached the lower end of that range. Other participants were concerned that uncertainties surrounding estimates of the neutral rate were sufficiently large that an implicit reference to a neutral level—implied by describing monetary policy as accommodative—was no longer helpful.

At the December meeting, all FOMC members agreed to adjust the language in the statement. However, there was concern that removing the characterization of monetary policy as accommodative while also indicating the potential for further rate increases might be interpreted by market participants as an indication that the Committee viewed a steeper path of policy as appropriate. Several participants noted their uncertainty about how investors would revise their expectations for future monetary policy following the release of the December statement.

For much of 2005, the Desk's Survey of Primary Dealers showed that only a few survey respondents expected a change in the "accommodative" language in the statement. However, as the Committee's discussions about this topic intensified and information was disseminated to the public in the November FOMC meeting minutes, expectations for a change to the statement firmed up.[2] As shown in figure 2, in the December Survey of Primary Dealers, more than three-quarters of the respondents expected the FOMC to "change the characterization of the stance of monetary policy as accommodative," up from just under one-quarter in the prior survey.

[2] In particular, the November minutes stated that "Several aspects of the statement language would have to be changed before long" and that "risks of going too far with the tightening process could also eventually emerge." Investors apparently interpreted these statements as a sign that the FOMC was closer to the end of its current interest rate tightening cycle than they had expected. Following the release, the expected path for the funds rate through the middle of 2006 was unchanged, but policy expectations beyond that horizon fell somewhat.

Figure 2: Dealers Who Expected a Change to the 'Accommodative' Language in the FOMC Statement, 2005



Source: FRBNY survey, 22 dealers participated.

Table 2: Post−December 2005 FOMC Event Study

On the Run Treasury Yields	
1. 2−Year	−3.4 bps
2. 5−Year	−3.9 bps
3. 10−Year	−2.8 bps
Equity Indexes	
4. S&P 500	0.5 %
Fed Funds Futures	
5. Jan−2006	0.0 bps
6. Mar−2006	−0.5 bps
Eurodollar Futures	
7. Jun−2006	−4.5 bps
8. Dec−2006	−4.5 bps

Note: Values reflect the 2−hour change around the statement release.

As shown in table 2, changes in asset prices upon the release of the December FOMC statement were mild. The December statement removed the accommodative language but also included the phrase "some further measured policy firming is likely to be needed." These changes appear to have caused only a slight reevaluation by market participants of the remaining duration of the tightening cycle.

Monetary Policy Expectations and Uncertainty

Measures of monetary policy expectations were generally little changed over the intermeeting period. Market participants remain confident that the Committee will keep the target range for the federal funds rate unchanged at the July/August FOMC meeting and announce a 25-basis-point increase in the target range at the September meeting. The expected path of the federal funds rate over the medium term was also little changed.

As shown in figure 1, a straight read of quotes on federal funds futures contracts suggests that the probability attached to a rate hike at the upcoming FOMC meeting remains close to zero. The probability of the next rate hike coming at the September meeting is about 85 percent, about 15 percentage points higher than immediately before the June FOMC meeting. On average, respondents to the Desk's July/August surveys also assigned virtually no odds to a rate hike at the upcoming meeting and similarly high odds to a September rate increase.

Figure 2 shows the probability distribution for the level of the federal funds rate at the end of 2018, based on options quotes and assuming zero term premiums. The distribution suggests that investors place the highest odds on two more 25-basis-point hikes in the target range for the federal funds rate by the end of the year. Figure 3 shows the corresponding average probability distribution implied by the Desk's July/August surveys; it suggests that respondents attach more equal odds to either one or two more hikes.

Looking further ahead, figure 4 shows the expected path of the federal funds rate through the end of 2019, derived from quotes on federal funds futures contracts, assuming zero term premiums and no changes between FOMC meetings. The path has risen a touch on net over the intermeeting period and suggests that investors expect a total of three hikes between now and the end of 2019. It also suggests that investors continue to attach higher odds to rate hikes occurring at meetings accompanied by the release of updates to the Committee's Summary of Economic Projections (SEP) than at meetings without an SEP update. This pattern is little changed from prior to the June FOMC meeting (the dotted lines), when the Chairman announced that a press conference will be held after every FOMC meeting beginning in 2019.

Figure 5 shows various measures of the expected federal funds rate over a longer horizon. A straight read of the market-based path derived from OIS quotes (the black line) suggests that investors do not expect any further increases in the federal funds rate beyond the end of 2019. Adjusting for term premiums using the staff's term structure model (the light blue line) suggests that investors expect a faster pace of tightening, with the federal funds rate reaching 3 percent by the end of 2019. The model-based path is similar to the Committee's June median SEP projections and to the modal path reported by the median

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respondent to the Desk's latest surveys. That said, the survey-implied modal path continues to lie noticeably above the survey-implied mean path (the golden squares).[1] Apparently, respondents continue to perceive risks to the economic outlook as skewed to the downside.[2] The median respondent continued to attach about 20 percent probability to a return to the effective lower bound at some point over the next three years, unchanged from the previous surveys.

The July/August Desk surveys 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 0.50 percent, 0.25 percentage point higher than in January 2018, when this question was last asked. Median estimates for the end of 2018, 2019, and 2020 were also a touch higher, at 0.53, 0.79, and 1.00 percent, respectively. As in the January surveys, respondents held diverse views; for example, estimates of the current neutral rate ranged between -0.50 and 3.00 percent.

The Desk's latest surveys also asked respondents for their projections for the most likely spread between the interest on excess reserves (IOER) rate and the effective federal funds rate (EFFR), conditional on a range of possible levels of reserve balances. Figure 6 shows that respondents expect a lower IOER–EFFR spread for a given level of reserve balances than in the May surveys, when this question was last asked. In the most recent surveys, the median projected spread falls to zero when reserve balances reach a level between $1,250 and $1,000 billion, which according to the Tealbook baseline projection will be the case in late 2019 or early 2020 (see the "Balance Sheet and Income Projections" section of the Tealbook).[3] The median respondent's modal projection for the IOER-EFFR spread over time (not shown) reaches zero in the second half of 2019.

In a new question in the July/August surveys, respondents were also asked to project the level of the spread between the top of the target range for the federal funds rate and the IOER rate; the median of respondents' modal expectations (not shown) was for the spread to be unchanged from the current level of 5 basis points at the end of 2018, but to widen to 10 basis points by the middle of 2019. No respondent had a modal expectation for the EFFR to lie above the top of the target range.

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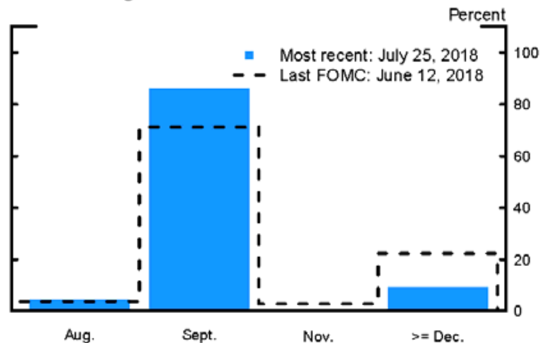
[1] The mean path is constructed from respondents' probability distributions for the federal funds rate under certain assumptions.

[2] The staff term structure model may not adequately capture such a feature because it assumes that mean and modal short rate paths approximately coincide when the short rate is sufficiently far away from the effective lower bound.

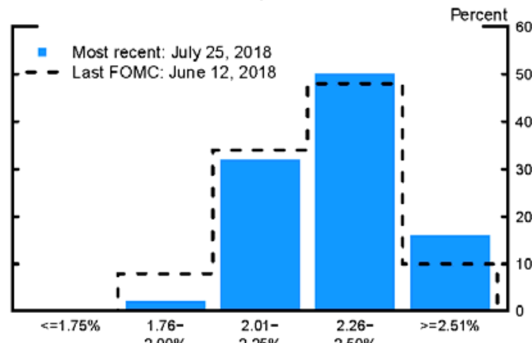
[3] Respondents were asked to rate the importance of various factors in influencing the IOER-EFFR spread over the remainder of 2018 and during 2019, on a scale from 1 through 5. The factors that received the highest median ratings were "change in the level of reserve balances" and "Treasury securities supply dynamics" (with average ratings of 3.4 and 4.1, respectively, for the remainder of 2018, and 4.3 and 3.9 for 2019).

Figure 1: Market−Implied Probability Distribution of the Timing of Next Rate Increase



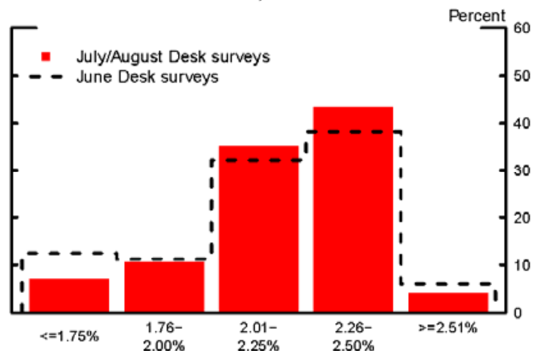
Note: Probabilities implied by a binomial tree fitted to settlement prices on federal funds futures contracts, without adjusting for risk premiums, and assuming the next policy action is either no change or a 25 basis point increase in the target range, and no intermeeting moves. Probabilities reflect the effect of the adjustment in IOER discussed in June FOMC communications.
Source: CME Group; Federal Reserve Board staff estimates.

Figure 2: Market−Implied Probability Distribution of the Federal Funds Rate, Year−End 2018



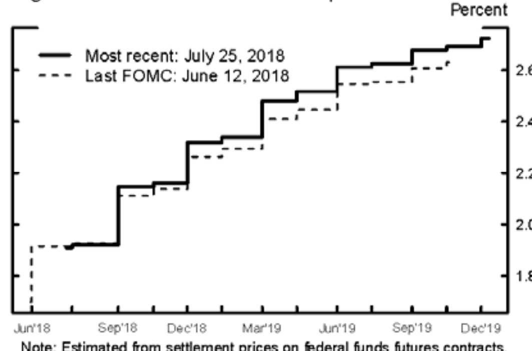
Note: Estimated from federal funds futures options for the average federal funds rate in January 2019, without adjusting for risk premiums.
Source: CME Group; Federal Reserve Board staff estimates.

Figure 3: Desk Survey Average Probability Distribution of the Federal Funds Rate, Year−End 2018



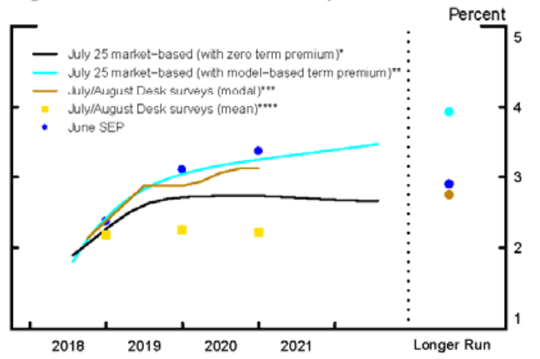
Note: Probabilities are averages of the probabilities assigned by respondents to different ranges of the federal funds rate at the end of 2018.
Source: FRBNY.

Figure 4: Federal Funds Rate Step Path



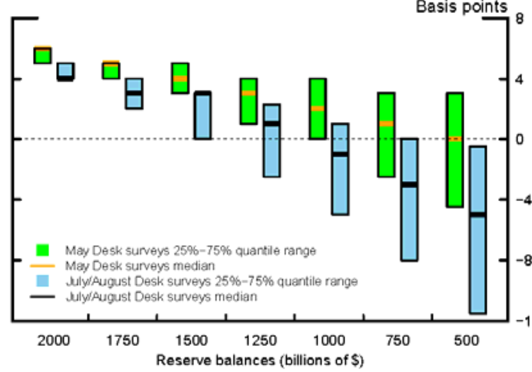
Note: Estimated from settlement prices on federal funds futures contracts, without adjusting for risk premiums, and assuming no intermeeting moves.
Source: CME Group; Federal Reserve Board staff estimates.

Figure 5: Federal Funds Rate Projections



* Estimated using overnight index swap quotes with a spline approach and without adjusting for term premiums.
** Estimated using a term structure model maintained by Board staff and adjusted for risk premiums. The longer−run model−implied forecast is for the expected federal funds rate 5 to 10 years ahead.
*** 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 6: Estimate of the IOER−EFFR Spread Conditional on Reserve Balance Levels



Source: FRBNY.

Uncertainty" box, financial market quotes indicate that investors regard the odds of a rate hike at the upcoming meeting as negligible; the next rate hike is viewed as very likely to occur in September. The assessment of respondents to the Desk's latest surveys of primary dealers and market participants is similar.

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 near-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 strengthening more than previously expected. Payroll gains continue to surprise on the upside, 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 monetary policy more accommodative, than previously estimated.
- Policymakers may judge that unwanted upward pressure on inflation is likely to emerge amid a prolonged period of significant labor market tightness.
- 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. On net, broad equity price indexes have increased more than 35 percent and spreads of investment and speculative grade corporate bonds over equivalent maturity Treasury securities remain around 60 and 270 basis points below their respective values in December 2015, when the target range was first raised above its effective lower bound.[1] The narrowing of spreads on high-yield bonds has occurred even as the use

[1] The spread of investment grade corporate bonds reported here is derived from the subset of investment grade corporate bonds that includes all 10-year securities with a given investment grade

of leverage by speculative grade and unrated firms has increased over the past several years.

Policy Strategy

- Policymakers may judge that a faster removal of policy accommodation is necessary in the near term to avoid significant overheating and a subsequent need to tighten policy abruptly.
    - 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 that describes 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." By removing this description, policymakers may convey a judgement 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

rating BBB. The spread of speculative grade corporate bonds is derived from the subset of speculative grade corporate bonds that includes all securities in the five-year high-yield category.

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.

- Adopting Alternative C likely would surprise market participants considerably given the readings from financial market quotes and the Desk's latest surveys, described above. Market participants would read such a statement, if issued at the July/August meeting when no rate hike is expected, 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 judge that, while inflation has moved close to 2 percent recently, it remains to be seen whether this development will be sustained or whether inflation will again drift lower. On a 12-month basis, core PCE inflation is estimated to have been 1.9 percent in June. The 12-month trimmed mean PCE inflation rate from the Federal Reserve Bank of Dallas was 1.8 percent over the 12 months ending in May, not much higher than in May 2017 when this measure stood at 1.7 percent.

- One factor that could prevent inflation from returning to 2 percent on a sustained basis is low expected inflation. Readings on market-based measures of inflation compensation remain substantially below where they were before the middle of 2014, and some survey-based measures of longer-term inflation expectations are still low by historical standards.

- Moreover, the labor market may have room to strengthen further before reaching maximum employment. While job gains have been solid, wage growth has not picked up much. For prime-age workers, both the labor force participation rate and the employment-to-population ratio have been rising, but they remain below their pre-recession levels and are low in comparison to the experiences of other advanced economies, suggesting scope for further improvement along these margins.

Alternatives

Policy Strategy

- Policymakers may be concerned that, because inflation has run persistently below 2 percent in recent years, longer-term inflation expectations may be too low or are at risk of becoming too low; policymakers also may be concerned that inflation expectations could drift down further if the Committee continues to tighten monetary policy without clear evidence that inflation will remain near 2 percent on a sustained basis.
  - Against that background, policymakers may favor Alternative A in order to underscore the Committee's commitment to its inflation objective and to ensure that longer-term inflation expectations are well anchored at a level consistent with the Committee's 2 percent objective. In addition, policymakers may judge that the past decade's experience of low inflation reduces the risk that longer-run inflation expectations will rise significantly beyond 2 percent.
  - Consequently, policymakers may favor the addition of language in paragraph 3 to indicate that the Committee would welcome "a period of inflation modestly above 2 percent" in order to "ensure that longer-term inflation expectations are consistent with the Committee's symmetric objective of 2 percent inflation."
- Policymakers may 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 tool for addressing any significant financial stability concerns that may emerge.
- Despite the likely expansionary effects of recently enacted changes in fiscal policy, some other policies—particularly the further escalation of trade tensions—pose downside risks. Policymakers may judge that their scope to react to downside economic outcomes remains limited by the proximity of the federal funds rate to the effective lower bound.
- 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 further rate hikes. If the public saw this statement as primarily reflecting policymakers' resolve to push inflation above 2 percent for a time, then inflation compensation could rise, real longer-term interest rates would probably fall somewhat, and equity prices might rise. Lower real rates and the prospect of higher inflation likely would

lead to depreciation of the dollar. Conversely, if investors read the statement as reflecting an unexpectedly downbeat assessment of the economic outlook, equity prices and inflation compensation could fall.

IMPLEMENTATION NOTE

If the Committee decides to maintain the current target range for the federal funds rate, an implementation note that indicates no change to its 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 June directive and implementation note, bold red underlined text indicates added language, and blue underlined text indicates text that links to websites.

Implementation Note for July/August 2018 Alternatives A and B

Release Date: August 1, 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 ~~June 13~~ **August 1**, 2018:

- The Board of Governors of the Federal Reserve System voted **[** unanimously **]** to ~~raise~~ **maintain** the interest rate paid on required and excess reserve balances ~~to~~ **at** 1.95 percent, effective ~~June 14~~ **August 2**, 2018. ~~Setting the interest rate paid on required and excess reserve balances 5 basis points below the top of the target range for the federal funds rate is intended to foster trading in the federal funds market at rates well within the FOMC's target range.~~
- 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 14~~ **August 2**, 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 June that exceeds $18 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 June that exceeds $12 billion. Effective in July, 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 $24 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 $16 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 ~~a 1/4 percentage point increase in~~ **the establishment of** the primary credit rate ~~to~~ **at the existing level of** 2.50 percent~~, effective June 14, 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.

Implementation Note for July/August 2018 Alternative C

Release Date: August 1, 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 ~~June 13~~ **August 1**, 2018:

- The Board of Governors of the Federal Reserve System voted **[** unanimously **]** to raise the interest rate paid on required and excess reserve balances to ~~1.95~~ **2.20** percent, effective ~~June 14~~ **August 2**, 2018. ~~Setting the interest rate paid on required and excess reserve balances 5 basis points below the top of the target range for the federal funds rate is intended to foster trading in the federal funds market at rates well within the FOMC's target range.~~

- 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 14~~ **August 2**, 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** 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 June that exceeds $18 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 June that exceeds $12 billion. Effective in July, 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 $24 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 $16 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 a 1/4 percentage point increase in the primary credit rate to ~~2.50~~ **2.75** percent, effective ~~June 14~~ **August 2**, 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.

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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. During this same period, $197 billion of principal from maturing Treasury securities and about $65 billion of principal from agency securities will be reinvested.[1] 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 rises to its $20 billion maximum. However, the projections for agency securities are subject to considerable uncertainty because unscheduled prepayments depend on several factors that are difficult to predict, including the realized path of mortgage rates.[2]

Evolution of the size of the balance sheet. Based on the baseline economic outlook in the July Tealbook, the size of the balance sheet is projected to normalize in the second quarter of 2021, a month earlier than in the June Tealbook. (See the exhibit titled "Total Assets and Selected Balance Sheet Items" and the table that follows the exhibit).[3]

[1] 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 primarily take place in the middle month of each quarter.

[2] If actual principal payments were to breach the $20 billion maximum 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. See the June FOMC memo titled "Operational Readiness for MBS Reinvestments" for further details.

[3] 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.

Balance Sheet & Income

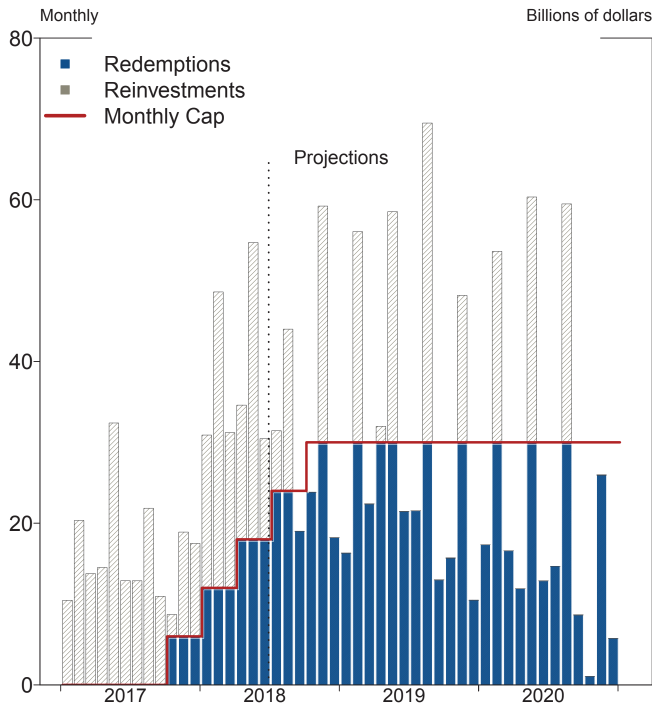
Redemptions and Reinvestments of SOMA Principal Payments

Projections for Treasury Securities
(Billions of dollars)

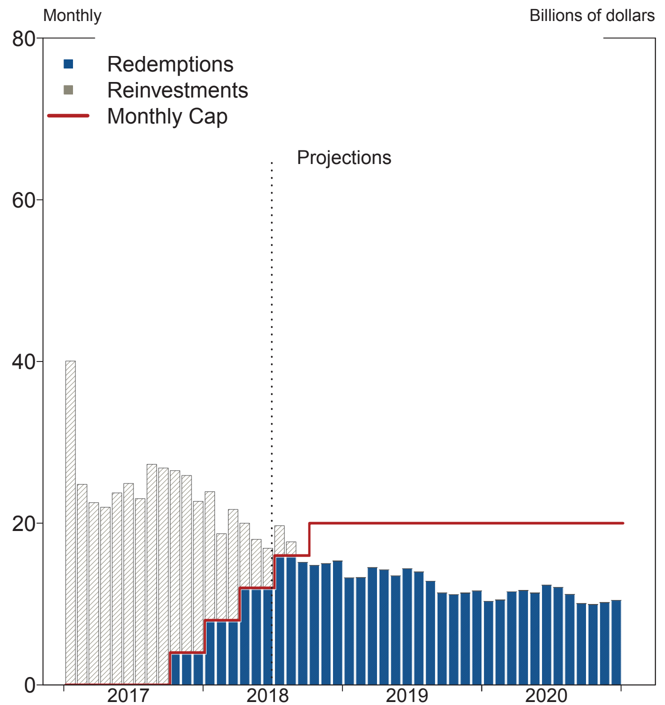
	Redemptions		Reinvestments	
	Period	Since Oct. 2017	Period	Since Oct. 2017
2018: Q2	54.0	108.0	65.8	167.6
2018: Q3	67.0	175.0	27.4	195.0
2018: Q4	72.0	247.1	29.2	224.2
2018	229.1	247.1	197.1	224.2
2019	270.8	517.9	114.2	338.4
2020	204.8	722.7	83.4	421.9

Projections for Agency Securities
(Billions of dollars)

	Redemptions		Reinvestments	
	Period	Since Oct. 2017	Period	Since Oct. 2017
2018: Q2	36.0	72.0	18.9	119.9
2018: Q3	47.2	119.2	5.4	125.3
2018: Q4	45.1	164.3	0.0	125.3
2018	152.3	164.3	64.6	125.3
2019	155.4	319.7	0.0	125.3
2020	131.7	451.4	0.0	125.3



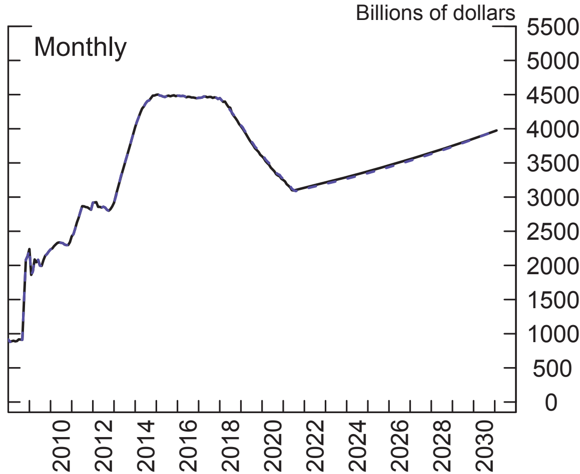
Note: Projection dependent on assumed distribution of future Treasury issuance.

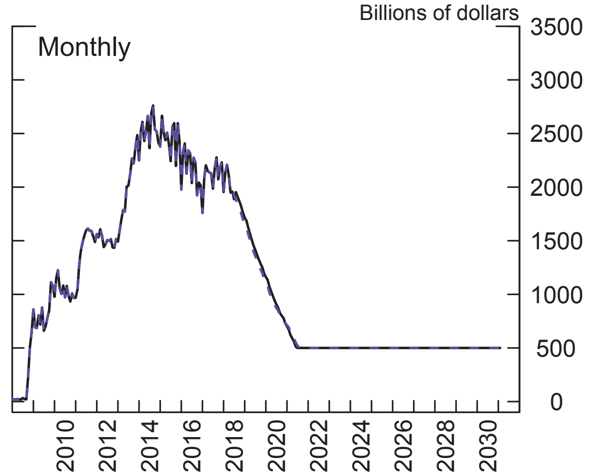


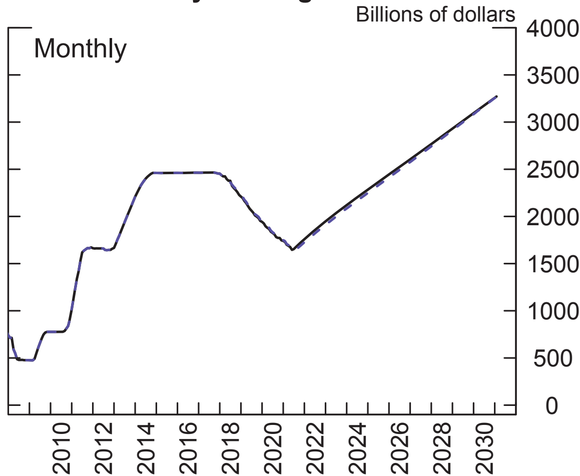
Note: Projection dependent on future interest rates and housing market developments.

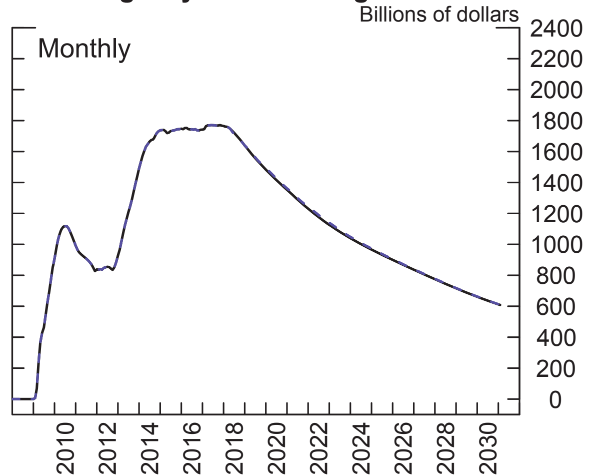
Total Assets and Selected Balance Sheet Items

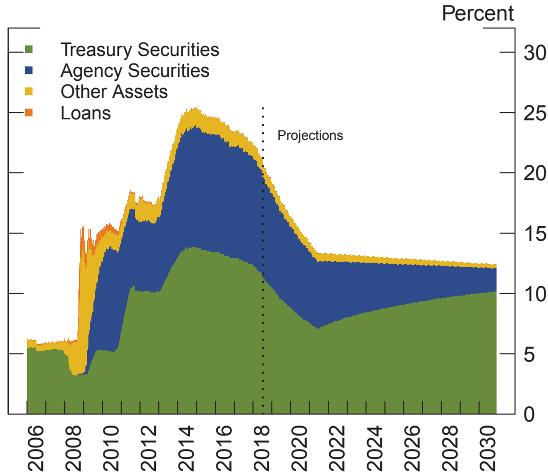
July Tealbook baseline — June Tealbook baseline

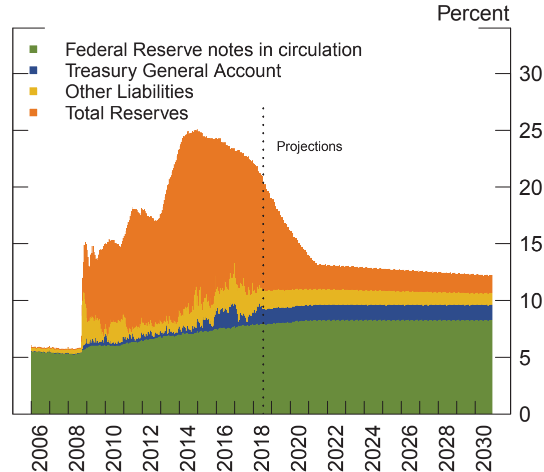












Balance Sheet & Income

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

	Jun 30, 2018	2018	2020	2022	2024	2026	2030
Total assets	4,308	4,034	3,250	3,214	3,376	3,555	3,965
Selected assets							
Loans and other credit extensions*	3	0	0	0	0	0	0
Securities held outright	4,102	3,851	3,095	3,077	3,253	3,444	3,872
U.S. Treasury securities	2,378	2,210	1,741	1,948	2,284	2,605	3,257
Agency debt securities	2	2	2	2	2	2	2
Agency mortgage-backed securities	1,721	1,639	1,352	1,126	966	836	612
Unamortized premiums	150	141	111	91	76	63	43
Unamortized discounts	-14	-13	-10	-8	-7	-6	-4
Total other assets	67	55	55	55	55	55	55
Total liabilities	4,269	3,996	3,211	3,171	3,329	3,504	3,903
Selected liabilities							
Federal Reserve notes in circulation	1,619	1,668	1,880	2,022	2,158	2,308	2,652
Reverse repurchase agreements	342	255	248	245	245	245	245
Deposits with Federal Reserve Banks	2,301	2,068	1,078	899	921	945	1,001
Reserve balances held by depository institutions	1,887	1,715	701	500	500	500	500
U.S. Treasury, General Account	333	277	301	324	346	370	425
Other deposits	82	75	75	75	75	75	75
Earnings remittances due to the U.S. Treasury	2	0	0	0	0	0	0
Total Federal Reserve Bank capital**	39	38	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.

From the start of the balance sheet normalization program in October 2017 to its projected conclusion in 2021, 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. At the time the size of the balance sheet normalizes:

- Reserve balances reach an assumed longer-run level of $500 billion.[4]
- The SOMA portfolio is projected to be roughly $3 trillion, consisting of about $1.7 trillion in Treasury securities and $1.3 trillion in agency securities.
- Total consolidated assets of the Federal Reserve System are projected to be $3.1 trillion.

Once these declines in asset holdings 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 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. 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 $59 billion this year from $80 billion in 2017 (see the "Income Projections" exhibit).[5] This decline primarily reflects the realized and expected increases in the interest rate paid on reserves in 2018.[6] Total interest expense is projected to rise to nearly

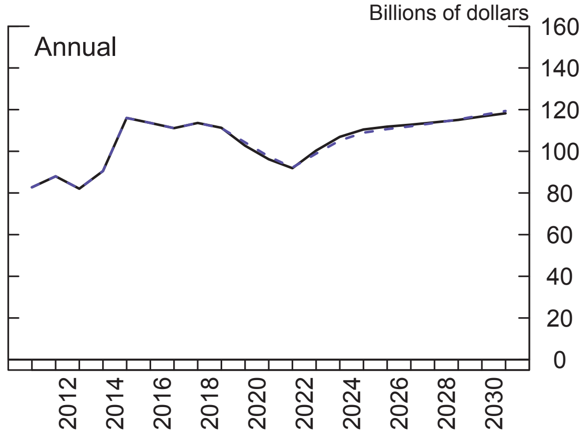
[4] Other noteworthy assumptions about liability items underlying the projections are as follows: The Treasury General Account is assumed to increase in line with nominal GDP; Federal Reserve notes in circulation are assumed to increase at an average annual pace of about 6 percent through 2020 and at the same pace as nominal GDP thereafter; the foreign repo pool and balances in the accounts of designated financial market utilities remain at their June 2018 levels of approximately $245 billion and $70 billion, respectively; and take-up at the overnight RRP facility is assumed to maintain its June 2018 value of about $10 billion until the level of reserve balances reaches $1 trillion, at which point take-up declines to zero over the course of one year.

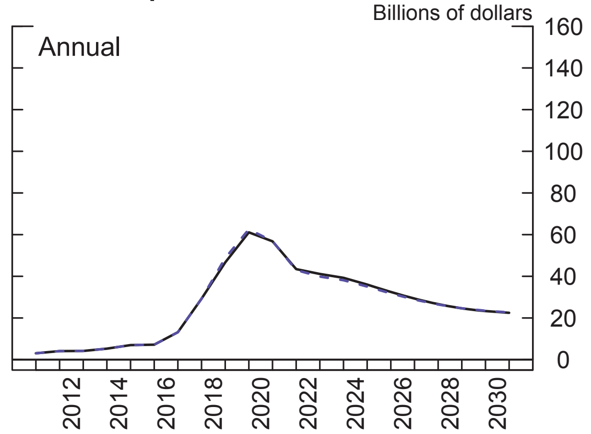
[5] This estimate includes two mandated transfers to the Treasury due to reductions to the statutory limit on aggregate Reserve Bank surplus. First, $2.5 billion was transferred in February as a result of the Bipartisan Budget Act of 2018. Second, $675 million was transferred in June reflecting the amendment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

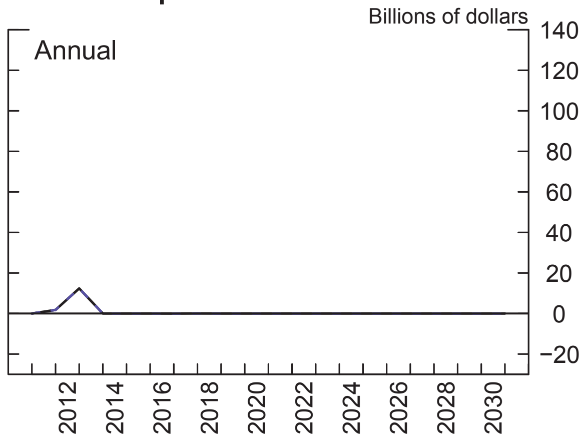
[6] We continue to assume that the FOMC will set a 25 basis-point-wide target range for the federal funds rate throughout the projection period. In contrast with the previous Tealbook and consistent with the June FOMC Implementation Note, we now assume that the interest rates paid on reserve balances will be

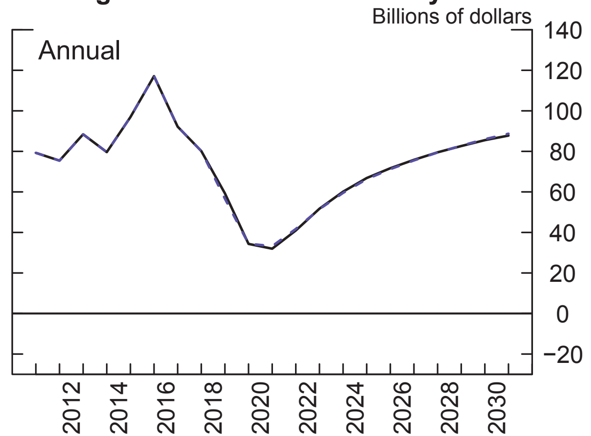
Income Projections

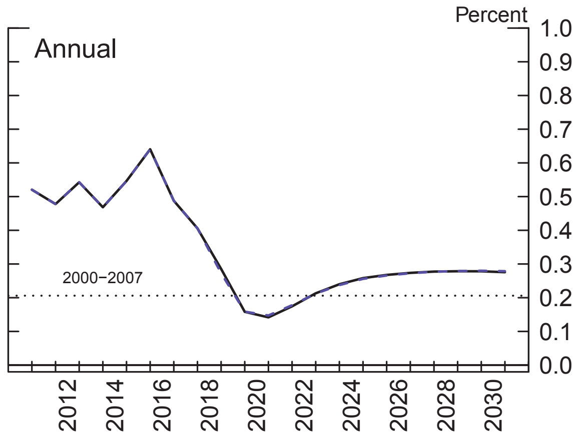
July Tealbook baseline — June Tealbook baseline

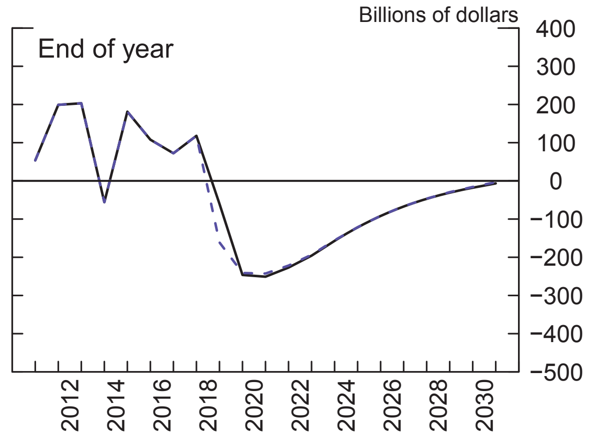












Balance Sheet & Income

$50 billion this year, while interest income from SOMA holdings is expected to decline slightly, to $111 billion. As the target range for the federal funds rate moves up and the interest expense on reserve balances increases, remittances are expected to decline further and to bottom out at about $32 billion in 2020. Thereafter, remittances increase as the Desk begins to add Treasury securities to the SOMA portfolio.

The projected path for remittances over the next few years is similar to that in the June 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 staff estimates that the SOMA portfolio was in a net unrealized loss position of nearly $20 billion at the end of June. With longer-term interest rates expected to rise further over the next several years, the unrealized loss position is expected to reach $265 billion in 2020:Q3. Of this amount, about $105 billion is attributable to Treasury securities and $160 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. Relative to the June Tealbook, the net unrealized position over the projection period is little changed.

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.[7]

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

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 to the bottom of the range.

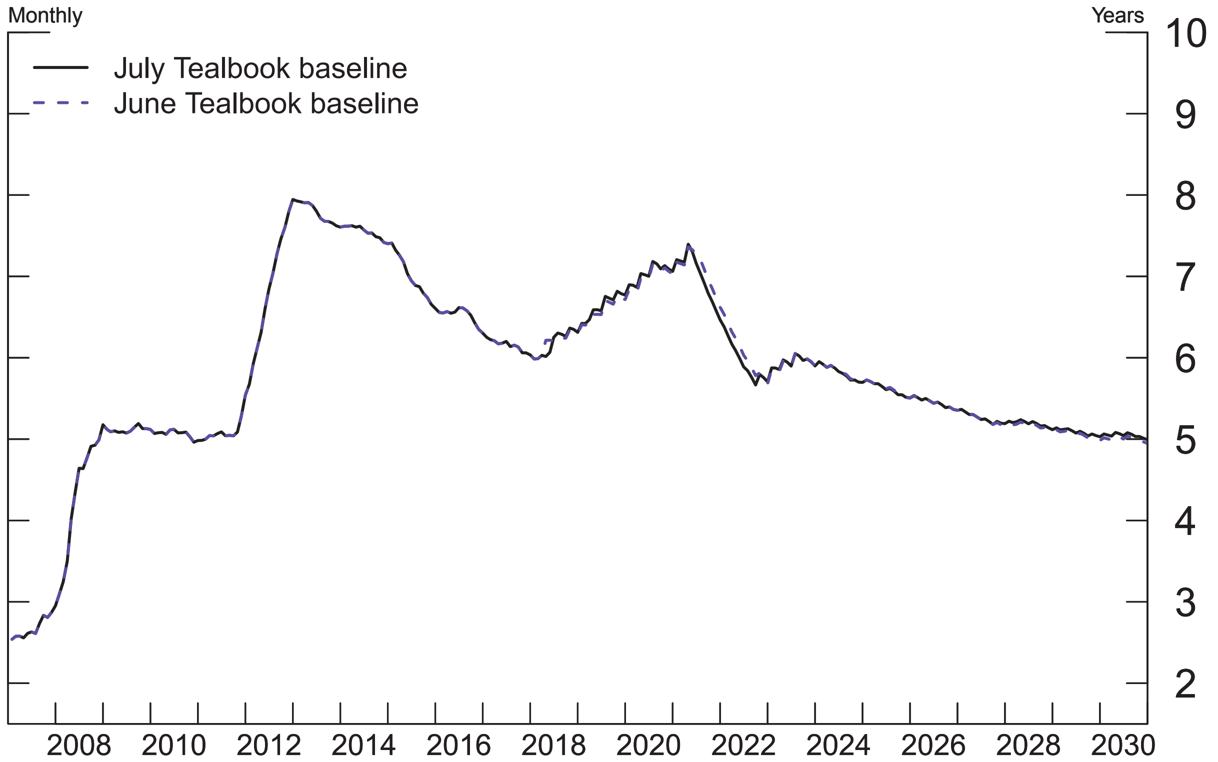
[7] The estimated path of the term premium effect depends on the difference between the expected path of the Federal Reserve's balance sheet over coming years and a benchmark counterfactual projection based on the configuration of the balance sheet that prevailed before the financial crisis of 2007–2008.

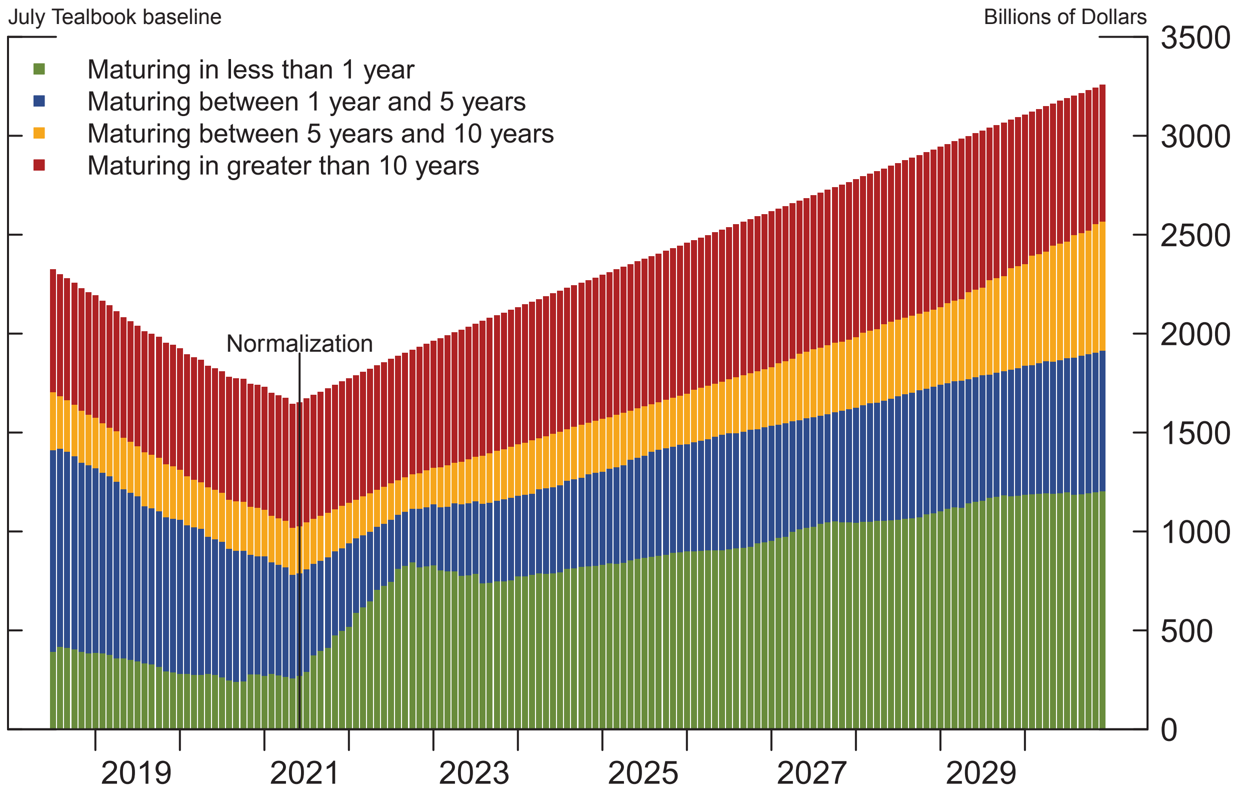
Projections for the 10-Year Treasury Term Premium Effect *
(Basis Points)

Date	July Tealbook	June Tealbook
	Quarterly Averages	
2018:Q3	-78	-79
Q4	-76	-76
2019:Q4	-66	-66
2020:Q4	-58	-58
2021:Q4	-53	-53
2022:Q4	-49	-49
2023:Q4	-46	-46
2024:Q4	-43	-43
2025:Q4	-40	-40
2026:Q4	-38	-37
2027:Q4	-36	-35
2028:Q4	-34	-33
2029:Q4	-32	-31
2030:Q4	-31	-29

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

Projections for the Characteristics of SOMA Treasury Securities Holdings





Balance Sheet & Income

portfolio. In terms of the composition of the portfolio, the share of agency MBS is expected to peak at 44 percent shortly before normalization, reflecting the faster pace of roll-offs of Treasury securities, and then to decline to less than 30 percent by 2025.

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 (currently the SOMA portfolio contains no Treasury bills). 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").

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