Prefatory Note

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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 20, 2017

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

Incoming data since the June FOMC meeting indicate that overall and core inflation continue to run below the 2 percent objective. By contrast, the labor market has strengthened further, and real GDP appears to be growing faster than potential output. In light of the tension between ongoing strengthening of the labor market and soft inflation readings, two key questions for the Committee at this meeting are: First, whether the anticipated path for the federal funds rate communicated by recent postmeeting statements remains appropriate for achieving the Committee's objectives; and, second, whether to set and announce the date for beginning to implement caps on reinvestment.

For the Committee's consideration, this Tealbook contains three draft statements. The Alternatives offer somewhat different assessments of the recent information on labor market conditions, inflation, and economic activity; accordingly they differ with respect to the policy decision or the signal they provide about the stance of monetary policy going forward.

- In characterizing the labor market, the Alternatives note that it has continued to either "strengthen" (Alternatives A and B) or "tighten" (Alternative C).
  - However, the Alternatives differ in their perspective on the data. Alternative A acknowledges that job gains "have been solid" and the unemployment rate "has changed little in recent months," but adds that wage gains "remained subdued." In contrast, Alternative B notes that job gains "have been solid, on average, since the beginning of the year," and the unemployment rate "has declined." Alternative C states that job gains "remained strong this year" and the unemployment rate "has declined to a low level by historical standards."
- All three Alternatives recognize that overall and core inflation have been running below the Committee's 2 percent inflation objective, but they differ in their description of the shortfall. Alternatives A and B note that the two measures of inflation "have declined" and are running "below" 2 percent; Alternative C maintains the assessment in the Committee's June statement that they have been running "somewhat below" 2 percent.
  - In describing inflation expectations, Alternative A characterizes market-based measures of inflation compensation as "low" and as having "declined this

year;" in Alternative B they are described as remaining low, and in Alternative C as "little changed." All three Alternatives note that survey-based measures of expected inflation are "little changed, on balance."

- With regard to economic activity, the three Alternatives agree that household spending and business fixed investment "have continued to expand."
  - However, while Alternatives A and B retain the language of the June statement that economic activity has been rising "moderately so far this year," Alternative C emphasizes that "growth of" economic activity "rebounded in recent months."
- When characterizing the economic outlook:
  - Each Alternative reaffirms the Committee's expectation in the June statement that economic activity will expand at a moderate pace.
  - Regarding the labor market, Alternatives A and B indicate that conditions will "strengthen somewhat further," while Alternative C expects that employment "will rise at a sustainable pace," indicating a need to slow the pace of labor market strengthening.
  - On the outlook for inflation, Alternatives B and C repeat the language of the June statement that inflation on a 12-month basis is expected to "remain somewhat below" 2 percent in the near term, and reiterate that inflation in the medium term will "stabilize around" the Committee's 2 percent objective. Alternative A, instead, suggests a more gradual return of inflation to 2 percent, by stating that the Committee expects inflation to "remain below" 2 percent in the near term but to "rise to" 2 percent over the medium term.
  - Each Alternative retains the assessment of the June statement that while near-term risks to the economic outlook appear roughly balanced, the Committee is monitoring inflation developments closely.
- The differences in the economic outlook under the three Alternatives are reflected in somewhat different policy assumptions.
  - Alternative B retains the language of the June statement that economic conditions will warrant "gradual increases" in the federal funds rate. Alternative C indicates, instead, that the evolution of economic conditions will warrant "further gradual increases" in the federal funds rate, suggesting that policy accommodation might be removed at a somewhat faster pace, or that

the longer-run level of the federal funds rate may be higher, than previously expected. In contrast, Alternative A suggests a somewhat shallower path for the federal funds rate than the other Alternatives, as it stresses that the Committee will maintain the current target range "while assessing the likelihood that recent low readings on inflation will persist," and that economic conditions will likely warrant "only modest further increases" in the federal funds rate.

- Turning to policy decisions:
  - The three Alternatives conclude that, in view of the realized and expected economic conditions, it is appropriate, at this meeting, to maintain the current target range of the federal funds rate at 1 to 1-1/4 percent.
  - On reinvestment policy, Alternative C announces that the Committee will begin implementing, on September 1, the balance sheet normalization program described in the June 2017 Addendum to the Committee's Policy Normalization Principles and Plans. In contrast, under Alternative B the Committee maintains its existing reinvestment policy and, as in June, indicates that it expects to implement the balance sheet normalization program "this year" provided that "the economy evolves broadly as anticipated." Under Alternative A, the Committee states that it will begin implementing the balance sheet normalization program "later this year;" the insertion of "later" signals a likely delay in starting to shrink the balance sheet.
- Each Alternative retains the assessment of the June statement that the stance of monetary policy remains accommodative and that such a stance supports some further strengthening in labor market conditions and a sustained return to 2 percent inflation.

JUNE 2017 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 moderately so far this year. Job gains have moderated but have been solid, on average, since the beginning of the year, and the unemployment rate has declined. Household spending has picked up in recent months, and business fixed investment has continued to expand. On a 12-month basis, inflation has declined recently and, like the measure excluding food and energy prices, is running somewhat below 2 percent. Market-based measures of inflation compensation remain low; survey-based measures 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 continues to expect that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace, and labor market conditions will strengthen somewhat further. Inflation on a 12-month basis is expected to remain somewhat below 2 percent in the near term but to stabilize around the Committee's 2 percent objective over the medium term. Near-term risks to the economic outlook appear roughly balanced, but the Committee is monitoring inflation developments closely.

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 to 1-1/4 percent. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in 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 objectives of maximum employment and 2 percent inflation. 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 Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.

5. The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. The Committee currently expects to begin implementing a balance sheet normalization program this year, provided that the economy evolves broadly as anticipated. This program, which would gradually reduce the Federal Reserve's securities holdings by decreasing reinvestment of principal payments from those

securities, is described in the accompanying addendum to the Committee's Policy Normalization Principles and Plans.

JULY 2017 ALTERNATIVE A

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 moderately so far this year. **While** job gains ~~have moderated but~~ have been solid~~, on average, since the beginning of the year,~~ and the unemployment rate has ~~declined~~ **changed little in recent months, wage gains have remained subdued**. Household spending ~~has picked up in recent months,~~ and business fixed investment ~~has~~ **have** continued to expand. On a 12-month basis, **overall** inflation ~~has declined recently~~ and~~, like~~ the measure excluding food and energy prices~~, is~~ **have declined and are** running ~~somewhat~~ below 2 percent. Market-based measures of inflation compensation ~~remain~~ **are** low **and have declined this year**; survey-based measures 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 ~~continues to~~ expect**s** that, with ~~gradual~~ **only modest further** adjustments in the stance of monetary policy, economic activity will expand at a moderate pace, and labor market conditions will strengthen somewhat further. Inflation on a 12-month basis is expected to remain ~~somewhat~~ below 2 percent in the near term but to ~~stabilize around~~ **rise to** the Committee's 2 percent objective over the medium term. Near-term risks to the economic outlook appear roughly balanced, but the Committee is monitoring inflation developments closely.

3. ~~In view of realized and expected labor market conditions and inflation~~ **Against this backdrop**, the Committee decided to ~~raise~~ **maintain** the target range for the federal funds rate ~~to~~ **at** 1 to 1-1/4 percent **while assessing the likelihood that recent low readings on inflation will persist**. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in 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 objectives of maximum employment and 2 percent inflation. 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 Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant ~~gradual~~ **only modest further** increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.

5. The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency

mortgage-backed securities and of rolling over maturing Treasury securities at auction. The Committee currently expects to begin implementing ~~a~~ **its** balance sheet normalization program **later** this year, provided that the economy evolves broadly as anticipated~~.~~**;** this program~~, which would gradually reduce the Federal Reserve's securities holdings by decreasing reinvestment of principal payments from those securities,~~ is described in the ~~accompanying~~ **June 2017** Addendum to the Committee's Policy Normalization Principles and Plans.

JULY 2017 ALTERNATIVE B

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 moderately so far this year. Job gains ~~have moderated but~~ have been solid, on average, since the beginning of the year, and the unemployment rate has declined. Household spending ~~has picked up in recent months,~~ and business fixed investment ~~has~~ **have** continued to expand. On a 12-month basis, **overall** inflation ~~has declined recently~~ and~~, like~~ the measure excluding food and energy prices~~, is~~ **have declined and are** running ~~somewhat~~ below 2 percent. Market-based measures of inflation compensation remain low; survey-based measures 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 continues to expect that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace, and labor market conditions will strengthen somewhat further. Inflation on a 12-month basis is expected to remain somewhat below 2 percent in the near term but to stabilize around the Committee's 2 percent objective over the medium term. Near-term risks to the economic outlook appear roughly balanced, but the Committee is monitoring inflation developments closely.

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 to 1-1/4 percent. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in 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 objectives of maximum employment and 2 percent inflation. 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 Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.

5. The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. The Committee ~~currently~~ expects to begin implementing ~~a~~ **its** balance sheet normalization program this year, provided that the economy evolves broadly as anticipated~~.~~**;** this program~~, which would gradually reduce the Federal Reserve's~~

~~securities holdings by decreasing reinvestment of principal payments from those securities,~~ is described in the ~~accompanying~~ **June 2017** Addendum to the Committee's Policy Normalization Principles and Plans.

JULY 2017 ALTERNATIVE C

1. Information received since the Federal Open Market Committee met in ~~May~~ **June** indicates that the labor market has continued to ~~strengthen~~ **tighten** and that **growth of** economic activity has ~~been rising moderately so far this year~~ **rebounded in recent months**. Job gains have ~~moderated but have been solid, on average, since the beginning of the~~ **remained strong this** year, and the unemployment rate has declined **to a low level by historical standards**. Household spending ~~has picked up in recent months,~~ and business fixed investment ~~has~~ **have** continued to expand. On a 12-month basis, **overall** inflation ~~has declined recently~~ and~~, like~~ the measure excluding food and energy prices~~, is~~ **have been** running somewhat below 2 percent. Market-based measures of inflation compensation ~~remain low;~~ **and** survey-based measures 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 ~~continues to~~ expect**s** that, with **further** gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate ~~pace~~ **rate**, and ~~labor market conditions will strengthen somewhat further~~ **employment will rise at a sustainable pace**. Inflation on a 12-month basis is expected to remain somewhat below 2 percent in the near term but to stabilize around the Committee's 2 percent objective over the medium term. Near-term risks to the economic outlook appear roughly balanced, but the Committee is monitoring inflation developments closely.

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 to 1-1/4 percent. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in 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 objectives of maximum employment and 2 percent inflation. 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 Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant **further** gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.

5. **On September 1,** the Committee ~~currently expects to~~ **will** begin implementing ~~a~~ **its** balance sheet normalization program ~~this year, provided that the economy evolves broadly as anticipated. This program, which would gradually reduce the Federal Reserve's securities holdings by decreasing reinvestment of principal payments from~~

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Alternatives

~~those securities~~, **which** is described in the ~~accompanying~~ **June 2017** Addendum to the Committee's Policy Normalization Principles and Plans. **Until then,** the Committee is maintaining its existing **reinvestment** policy ~~of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction~~.

N.B. In FOMC statements that follow the one that announces the beginning of balance sheet normalization, paragraph 5 could become: "Balance sheet normalization is proceeding in accordance with the program that the Committee initiated in [September] 2017; that program is described in the June 2017 Addendum to the Committee's Policy Normalization Principles and Plans."

THE CASE FOR ALTERNATIVE B

Economic Conditions and Outlook

- Data received during the intermeeting period indicate that the labor market strengthened further while inflation remained soft.
- Nonfarm payroll employment increased 222,000 in June, and job gains in April and May were revised upward. The unemployment rate ticked up to 4.4 percent in June from 4.3 percent in May as the labor force participation rate edged up, but the unemployment rate remains below each participant's estimate of its longer-run normal level. Even so, wage growth continued to be subdued.
- Inflation has remained below the Committee's 2 percent objective. Over the 12 months ending in May, overall PCE price inflation ran at 1.4 percent, down from 1.7 percent in April. While the decline may reflect, in part, idiosyncratic and temporary factors, the unexpectedly low readings on PCE and CPI inflation in recent months will hold down 12-month inflation measures for some time. As a result, the staff has revised down somewhat its forecast for inflation through the first quarter of 2018. Meanwhile, market-based measures of longer-run inflation compensation and survey-based measures of longer-term inflation expectations were little changed.
- Economic activity appears to have expanded at a moderate pace during the second quarter, supported by rising personal consumption expenditures and business investment.
- Policymakers may note that the staff continues to see the medium-term outlook for inflation and the labor market as essentially unchanged, with the unemployment rate falling somewhat further below estimates of its longer-run normal level, and inflation reaching 2 percent by 2019.
- Policymakers might continue to judge that the risks to the outlook in the near term remain roughly balanced but that the downside risks stemming from the recent soft readings on inflation bear close watching.

Policy Strategy

- Policymakers may view the information received over the intermeeting period as indicating that the labor market is close to maximum sustainable employment while inflation continues to run below the 2 percent objective. Policymakers also may view the available information as indicating, on balance, that the economy is evolving

about in line with their modal forecast. Accordingly, policymakers may judge that maintaining the current target range and policy communications is appropriate, at least for now, in light of the tension between the strong labor market and subdued wage and price inflation.

- They may also judge that more data are needed to assess whether the apparent low sensitivity of inflation to tighter resource utilization is only a temporary phenomenon. Over the next intermeeting period, the Committee will receive two additional readings on employment, PCE and CPI inflation, as well as other indicators.
- Policymakers may also wish to signal that, on net, the economic outlook continues to support the case for implementing the balance sheet adjustment program this year. They may see a statement like Alternative B as preserving flexibility by conditioning the balance sheet normalization on the Committee's assessment of incoming data.
- A decision to keep the current target range for the federal funds rate unchanged at this meeting and to maintain the option to start implementing the balance sheet normalization program this year is in line with the current views of financial market participants. As shown in the "Monetary Policy Expectations and Uncertainty" box, federal funds futures quotes imply that market participants on average see about a 40 percent probability that the federal funds rate will be raised by the end of the year, but see only negligible odds of a rate hike at the July meeting. Additionally, respondents to the Desk's July surveys on average see the September meeting as the most likely timing for the announcement of a change in the Committee's reinvestment policy. A statement like Alternative B would be roughly in line with the expectations of financial market participants and thus would likely generate a muted response in financial markets. However, some market participants may be surprised that the statement language does not signal explicitly that a change in reinvestments is coming soon.

Monetary Policy Expectations and Uncertainty

Over the intermeeting period, market participants' views appeared to coalesce around a later date for the next policy rate increase but an earlier date for an announcement of a change to the FOMC's reinvestment policy, relative to their views before the June FOMC meeting. Under the assumption of zero term premiums, quotes on federal funds futures contracts suggest that investors shifted to December some of the probability of a rate hike that they previously attached to the September meeting (figure 1). They now see essentially zero probability of an increase in the target range next week, a probability of about 25 percent that the next rate hike will occur in December, and about 60 percent that it will not occur until after year-end. Respondents to the Desk's July Surveys of Primary Dealers and Market Participants also see little chance of a rate hike next week and placed 50 percent odds on the next rate hike occurring at the October-November or December meetings (not shown). They assigned about 30 percent probability to no further change in the federal funds rate this year, lower than the probability implied by futures rates under the assumption of zero term premiums.[1]

Regarding reinvestment policy, respondents to the Desk's Surveys on average see the September meeting as the most likely time for an announcement of a change to the Committee's reinvestment policy (figure 2).[2] By comparison, in the June Surveys, respondents assigned equal odds to the reinvestment policy change being announced at the September and the December meetings. Respondents generally pointed to Federal Reserve communications over this intermeeting period as the reason for the changes in their expectations. In addition, almost no respondents expect the Committee to raise the target range at the same time that it announces a reduction in reinvestments. In response to a special question on the likely market impact of the implementation of the Committee's program for normalizing the balance sheet, respondents' median expectation is for the 10-year Treasury yield and the 30-year MBS option-adjusted spread to increase 25 and 15 basis points, respectively, over the two-year period following implementation, although respondents appeared to hold fairly diverse views.

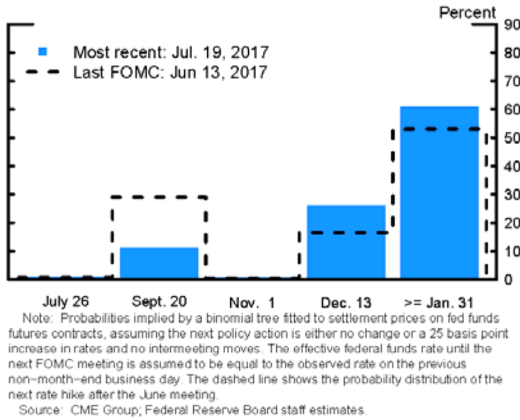
The probability distribution of the federal funds rate at the end of 2018 that is implied by options quotes under the assumption of zero term premiums (figure 3) assigns about equal probability to the federal funds rate falling into the 1 to 1½ percent range or the 1½ to 2 percent range. The average distribution from the July Desk Surveys is more diffuse and suggests that respondents see about a 40 percent probability that the federal funds rate will be above 2 percent by the end of 2018 (figure 4),

[1] Using OIS rates and adjusting for term premiums using a staff term structure model suggests a probability of about 20 percent of no rate increase until after year-end.

[2] The size of each bubble in figure 2 represents the number of respondents who assigned the probability indicated on the vertical axis to the scenario in which a change in reinvestment policy would first be announced at the FOMC meeting or the quarter indicated on the horizontal axis. The orange horizontal lines show the resulting average probabilities across respondents.

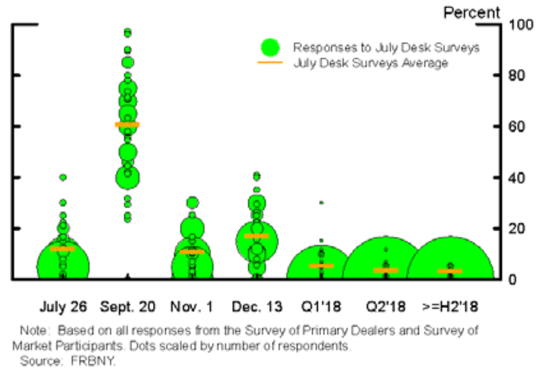
considerably higher than the 10 percent probability implied by market quotes. The median respondent's modal expectation is for three more 25-basis-point rate hikes by the end of 2018, unchanged from the June surveys (not shown).

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



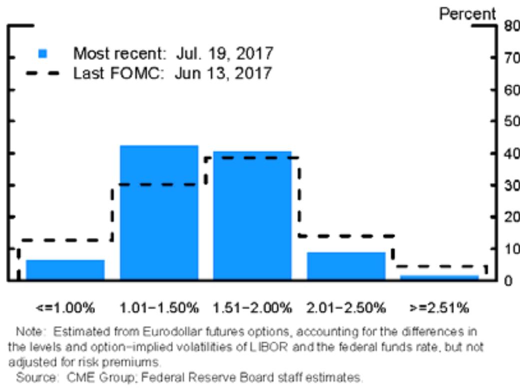
Note: Probabilities implied by a binomial tree fitted to settlement prices on fed funds futures contracts, assuming the next policy action is either no change or a 25 basis point increase in rates and no intermeeting moves. The effective federal funds rate until the next FOMC meeting is assumed to be equal to the observed rate on the previous non–month–end business day. The dashed line shows the probability distribution of the next rate hike after the June meeting.
Source: CME Group; Federal Reserve Board staff estimates.

Figure 2: Probability Distribution of the Timing of a Change in Reinvestment



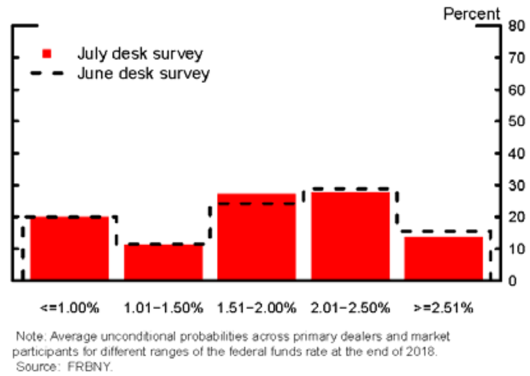
Note: Based on all responses from the Survey of Primary Dealers and Survey of Market Participants. Dots scaled by number of respondents.
Source: FRBNY.

Figure 3: Market–Implied Probability Distribution of the Federal Funds Rate, Year–End 2018



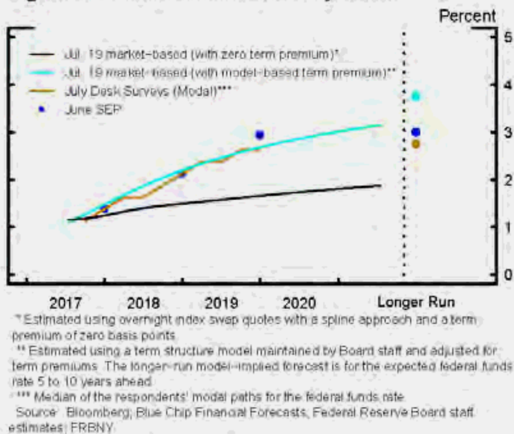
Note: Estimated from Eurodollar futures options, accounting for the differences in the levels and option–implied volatilities of LIBOR and the federal funds rate, but not adjusted for risk premiums.
Source: CME Group; Federal Reserve Board staff estimates.

Figure 4: Desk Survey Probability Distribution of the Federal Funds Rate, Year–End 2018



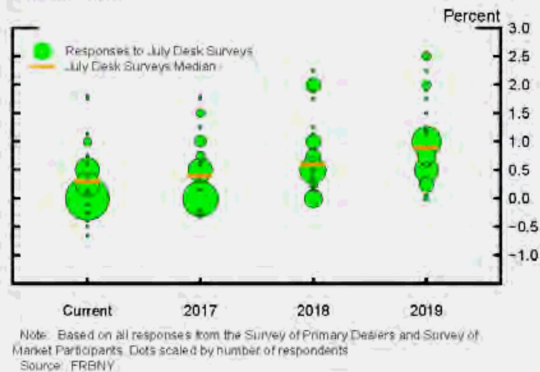
Note: Average unconditional probabilities across primary dealers and market participants for different ranges of the federal funds rate at the end of 2018.
Source: FRBNY.

Figure 5: Federal Funds Rate Projections



* Estimated using overnight index swap quotes with a spline approach and a term premium of zero basis points.
** Estimated using a term structure model maintained by Board staff and adjusted for term premiums. The longer–run model–implied forecast is for the expected federal funds rate 5 to 10 years ahead.
*** Median of the respondents' modal paths for the federal funds rate.
Source: Bloomberg; Blue Chip Financial Forecasts; Federal Reserve Board staff estimates; FRBNY.

Figure 6: Estimate of the Neutral Real Federal Funds Rate



Note: Based on all responses from the Survey of Primary Dealers and Survey of Market Participants. Dots scaled by number of respondents.
Source: FRBNY.

The market-based path of the expected federal funds rate is dependent on the term premium assumed in the analysis, as shown in figure 5. The federal funds path implied by a straight read of OIS quotes (the black line) was little changed on net over the intermeeting period. Under the assumption of zero term premiums, these market-implied forward rates are consistent with one hike of 25 basis points in 2018, with the federal funds rate reaching 1.8 percent by the end of 2020. However, a staff term structure model—a model that takes the effective lower bound into account and incorporates information from Blue Chip survey forecasts of the federal funds rate— suggests that the federal funds rate is expected to rise at a faster pace of three hikes in 2018, with the funds rate reaching about 3 percent by the end of 2020 (the light-blue line). The model-based path for the federal funds rate is roughly consistent with the modal path from the July Desk Surveys (the brown line) and the Committee's June median SEP projections through 2019 (the dark blue dots).[3]

Results from the model and the surveys also shed light on market participants' expectations of the longer-run level of the federal funds rate (the far-right dots in figure 5). The staff term structure model estimates that the federal funds rate will average about 3¾ percent over the period five to ten years ahead, about unchanged from the June FOMC meeting. This level remains about ¾ percentage point above the median projection for the longer-run federal funds rate from the June SEP and 1 percentage point above the median from the July Desk Surveys.

The July survey also asked respondents to assess the current level of the neutral real federal funds rate, as well as its level at the end of each of the next three years. As shown by the orange horizontal lines in figure 6, the median estimate of the current level was ¼ percent, unchanged from the May surveys when this question was last asked. The median estimates for the ends of 2017, 2018, and 2019 were 0.38, 0.55, and 0.81 percent, respectively, between 12 to 20 basis points lower than those from the May surveys. Looking over a longer history, the end-2017 and end-2018 estimates have fallen by 62 and 70 basis points since October 2015, when the Desk first asked respondents for their projections of neutral real rates at those dates. That said, respondents appeared to hold quite diverse views about the current and future levels of the neutral real rate, as is evident from the wide range of estimates shown in figure 6.

[3] The model-based path is a mean expectation of the federal funds rate whereas the survey-based path is based on respondents' modal expectations. Computing a mean path from the surveys (based on the surveys' conditional probability distribution results) requires making a number of assumptions. Under some reasonable assumptions, the survey-implied mean path would lie noticeably below the modal path.

The Case for Alternative C

Economic Conditions and Outlook

- The latest employment report confirmed that the labor market has continued to tighten, so far this year, at about the same pace as during the second half of 2016. Job gains in April, May, and June were substantially above the pace that likely will be required to absorb new entrants into the workforce over the medium term. Although the unemployment rate ticked up slightly in June, this move was accompanied by an increase in the labor force participation rate, which rose modestly above estimates of its trend level. The unemployment rate remains below the staff's estimate of the natural rate, and somewhat below all participants' estimates of its longer-run normal level, consistent with the view that the economy is operating beyond maximum sustainable employment.
- The apparent rebound in personal consumption expenditures in the second quarter confirms the Committee's earlier assessment that real GDP growth would pick up from the low rate recorded in the first quarter. The economy's recent momentum may lead policymakers to expect that aggregate demand in the second half of 2017 and in 2018 could grow appreciably faster than the economy's potential output, supported by solid growth in personal consumption expenditures and business investment.
- The factors that have held down PCE inflation in recent months may be transitory and may have little bearing on the outlook for inflation over the medium term. Some measures of inflation, such as the Dallas Fed's 12-month trimmed mean inflation rate, held steady at 1.7 percent for a third consecutive month in May. Moreover, policymakers may note that the staff has not materially changed its inflation forecast beyond this year; headline PCE price inflation is still projected to run just under 2 percent in 2018 and at 2 percent in 2019.
- Measures of financial conditions eased over the past six months even though the Committee reduced policy accommodation over the same period and market participants continued to expect further steps to tighten monetary policy.

Policy Strategy

- In light of continued strong job gains in recent months, policymakers may be concerned that reducing accommodation at the gradual pace communicated by the Committee's recent statements and actions could lead to substantial undershooting of

the longer-run normal rate of unemployment. Policymakers may judge that such undershooting would pose upside risks to inflation and appreciably raise the likelihood that policy may need to be tightened relatively abruptly, possibly cutting short the economic expansion.

- Policymakers may also be concerned that delaying a further reduction of policy accommodation will spur additional risk-taking in financial markets that could eventually endanger financial stability. Furthermore, despite three rate increases since December 2016, broad measures of financial conditions have remained accommodative—a state of affairs that might bolster the case for some policy firming at this meeting.
- For all of the above reasons, and given the outlook for inflation beyond this year, policymakers may favor removing some policy accommodation at this meeting. They may view it appropriate to announce that they will begin implementing, in September, the program of gradual reduction in the Federal Reserve's securities holdings that is described in the June 2017 Addendum to the Committee's Policy Normalization Principles and Plans. They may also wish to signal that, while the target range for the federal funds rate is unchanged at this meeting, further increases are likely in the near term if the economy continues to evolve as expected. Moreover, they may wish to indicate that beginning the reduction in the size of the balance sheet will not warrant a flatter path for the federal funds rate going forward.
- Policymakers may also find it prudent for the Committee's statement to include language signaling that further gradual adjustments in the stance of monetary policy likely will be needed to ensure that job growth moderates to a sustainable pace and that inflation stabilizes around the 2 percent objective in the medium term.
- Respondents to the Desk's July surveys place only small odds on the Committee announcing a change to reinvestment policy at this meeting. As a result, a statement like Alternative C may surprise market participants considerably. If they infer that the Committee intends to pursue a less accommodative stance of policy going forward than they had expected given their current outlook for the economy, then medium- and longer-term real interest rates would likely rise, and inflation compensation and equity prices decline. However, if investors see a statement like Alternative C as primarily reflecting an upbeat assessment of the strength of the U.S. expansion then equity prices and inflation compensation might fall less than otherwise, or even rise.

THE CASE FOR ALTERNATIVE A

Economic Conditions and Outlook

- Both headline and core inflation continue to run noticeably below the Committee's 2 percent inflation objective. In every report since March, CPI and PCE price indexes were softer than staff expected. While the weak inflation readings may partly or largely be due to one-off or temporary factors, the staff has revised down its forecast for total and core PCE inflation over the rest of the year to 1.5 percent, to take on board the weakness in some categories—such as housing services and other market-based services—that has been more persistent than anticipated.
- Recent readings on market-based measures of inflation compensation and survey-based measures of longer-term inflation expectations are little changed and remain low by historical standards.
- While the labor market continues to strengthen, wage pressures remain subdued. Job gains have been solid in recent months, but the June reading of average hourly earnings indicated continued softness and the May reading of the Atlanta Fed wage tracker edged down. In addition, revisions to estimates of compensation per hour in the business sector do not point to a noticeable increase in wage pressures. The combination of solid job gains and subdued growth in wages suggests that the labor market has not yet reached maximum employment.
- While spending data received during the intermeeting period point to a pickup in growth of consumer spending in the second quarter relative to the first quarter, retail sales declined in June. Moreover, residential investment has slowed.

Policy Strategy

- Although economic activity has been rising moderately on average in the last few months, the absence of inflation pressures allows the Committee to remain patient in removing accommodation. Taking into account the soft inflation readings of late and the uncertainty surrounding the inflation outlook, policymakers may judge that tighter resource utilization is necessary for inflation to step up. Thus policymakers might want to communicate that an increase in the target range for the federal funds rate will not be warranted until there is evidence that the recent softness in inflation is unlikely to persist. For the same reasons, policymakers may also view it as premature to start implementing changes in the Committee's reinvestment policy.

Alternatives

- Additionally, policymakers may be concerned that removing policy accommodation too quickly may harm the credibility of the Committee's 2 percent inflation objective and of policymakers' statements that positive and negative deviations from this objective are treated symmetrically.

- Moreover, in light of the recent 50 basis point reduction in the staff estimate of the longer-run equilibrium interest rate, policymakers may judge that the current stance of monetary policy is less accommodative than previously thought.[1]

- For all of these reasons, policymakers may now see little need to tighten policy further in the near term and may prefer a statement along the lines of Alternative A.

- Decisions to maintain the target range for the federal funds rate and to continue reinvesting maturing and prepaying securities would be consistent with the expectations of market participants. Financial market quotes and the Desk's July surveys indicate that market participants see no material odds that the Committee will raise the target range at this meeting; and, according to the Desk's July surveys, nearly all respondents attach the highest probability to a change in the reinvestment policy to be announced at the September meeting. However, the downbeat characterization on inflation offered under Alternative A, together with the indication that the Committee will continue to assess the likelihood that recent low readings on inflation will persist, likely would surprise the markets. The indication that a change in reinvestment policy may come "later" this year could also surprise market participants. The expected path for the federal funds rate would likely flatten, and longer-term yields would likely decline.

[1] The staff has lowered its estimate of the longer-run equilibrium interest rate for two reasons: First, to reverse a portion of the fiscal-policy-related increase introduced in the December 2016 Tealbook; and second, to reflect recent model-based estimates that show the longer-run neutral real interest rate has declined. These estimates are reviewed in the Box "The Equilibrium Real Rate in the Longer Run" in Tealbook A.

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IMPLEMENTATION NOTE

Given that none of the Alternatives envisage an increase in the target range for the federal funds rate at this meeting, the draft implementation notes shown on the following pages indicate no changes in the Federal Reserve's administered rates. The Committee's decision either to maintain its current reinvestment policy (as in Alternatives A and B) or to begin implementing the change in reinvestment policy described in the June 2017 Addendum to the Committee's Policy Normalization Principles and Plans (as in Alternative C) will be reflected in the domestic policy directive, which, as usual, will be released as part of the implementation note. In the draft implementation notes that follow, struck-out text indicates language deleted from the June implementation note, bold red underlined text indicates added language, and blue underlined text indicates text that links to websites.

Implementation Note for July 2017 Alternatives A and B

Release Date: July 26, 2017

Decisions Regarding Monetary Policy Implementation

The Federal Reserve has made the following decisions to implement the monetary policy stance announced by the Federal Open Market Committee in its statement on ~~June 14~~ **July 26**, 2017:

- 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** 1.25 percent~~, effective June 15, 2017~~.

- 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 15~~ **July 27**, 2017, 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 to 1-1/4 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 1.00 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 maturing Treasury securities at auction and to continue reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. 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."

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

- 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** 1.75 percent~~, effective June 15, 2017. In taking this action, the Board approved requests to establish that rate submitted by the Boards of Directors of the Federal Reserve Banks of Boston, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, Kansas City, Dallas, and San Francisco~~.

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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.

Implementation Note for July 2017 Alternative C

Release Date: July 26, 2017

Decisions Regarding Monetary Policy Implementation

The Federal Reserve has made the following decisions to implement the monetary policy stance announced by the Federal Open Market Committee in its statement on ~~June 14~~ **July 26**, 2017:

- 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** 1.25 percent~~, effective June 15, 2017~~.

- 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 15~~ **July 27**, 2017, 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 to 1-1/4 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 1.00 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 ~~maturing Treasury securities~~ at auction **Treasury securities maturing during July and August,** and to continue reinvesting ~~principal payments on all agency debt and agency mortgage-backed securities~~ in agency mortgage-backed securities **the principal payments received during July and August from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities**.
>
> **Effective September 1, 2017, 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 $6 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 $4 billion.**"

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.

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

- 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** 1.75 percent~~, effective June 15, 2017. In taking this action, the Board approved requests to establish that rate submitted by the Boards of Directors of the Federal Reserve Banks of Boston, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, Kansas City, Dallas, and San Francisco~~.

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

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Projections

BALANCE SHEET AND INCOME

The staff has prepared projections of the Federal Reserve's balance sheet and key elements of the associated income statement that are consistent with the interest rate paths incorporated in the staff's baseline economic outlook presented in Tealbook A.

The "July Tealbook baseline" scenario incorporates paths for interest rates that are noticeably lower than those in the June Tealbook. The federal funds rate path is lower by about ½ percentage point over the forecast period, with the rate projected to rise to 3.9 percent at the end of 2021 before moving down to about 2.6 percent by the end of the projection period.[1] Longer-term interest rates are markedly lower than in the June Tealbook, reflecting both the downward revision to the projected path of short-term interest rates and a decrease in projected term premiums.

The key changes to our baseline projection that result from these revisions, explained in detail below, are as follows: The size of the balance sheet normalizes one quarter earlier, in 2021:Q4, due to slightly faster MBS prepayments; annual remittances to the Treasury are higher through 2023, but lower further out, with cumulative remittances through the projection period about unchanged; and unrealized losses on the SOMA portfolio are smaller throughout the forecast period.

The key policy assumptions associated with the projections are highlighted below.

- ***Reinvestment policy:*** Consistent with the Committee's June 2017 Addendum to its Policy Normalization Principles and Plans, we assume that when the FOMC decides to change its reinvestment policy, it will instruct the Desk to reinvest principal repayments received from Treasury and agency securities held in the SOMA portfolio only to the extent that those payments exceed gradually rising dollar caps. As specified in that Addendum, we assume that the cap on redemptions of Treasury securities will rise, in quarterly steps, from an initial value of $6 billion per month to a fully phased-in value of $30 billion per month, and the cap on monthly reductions

[1] See the box "The Equilibrium Real Rate in the Longer Run" in Tealbook A for a discussion of some of the estimates of the real federal funds rate in the long run.

Balance Sheet & Income

of holdings of agency debt and MBS will rise from an initial value of $4 billion per month to $20 billion per month. Once the caps reach their respective fully phased-in values, they will remain in place until the size of the balance sheet is normalized, implying that the Federal Reserve's securities holdings will continue to decline in a gradual and predictable manner.[2] The change in reinvestment policy is assumed to be announced at the September 2017 FOMC meeting and implemented at the beginning of October, at which time the target range for the federal funds rate is projected to be 1¼ to 1½ percent. Shifting the date for the program initiation a few months earlier or later leads to only negligible changes to the projections for the balance sheet and income.

- ***Longer-run reserve balances:*** As in our June projections, we assume that the longer-run level of reserve balances is $500 billion.[3] There is a great deal of uncertainty about the longer-run level of reserves, which could be affected by factors such as structural changes in the banking system, the effects of regulation on banks' demand for reserves, and the Committee's ultimate choice of a long-run operating framework. The actual longer-run level of reserves may turn out to be appreciably smaller or larger than the staff assumption.

Key features of the balance sheet and income projections are described below:

- ***SOMA redemptions***. As shown in the upper left panel of the exhibit titled "Total Assets and Selected Balance Sheet Items," once the fully phased-in cap on redemptions of $30 billion is in place, reinvestment of some principal from maturing Treasury securities would occur mostly in the middle month of each quarter, when large amounts of such securities held in the SOMA will mature. In contrast, the $20 billion fully phased-in cap for agency securities is not projected to bind.

[2] The size of the balance sheet is assumed to be normalized when the Desk is required to resume purchases of Treasury securities so as to maintain the desired longer-run level of reserve balances while accommodating the expansion of other key liability items such as Federal Reserve notes in circulation, Federal Reserve Bank capital, the Treasury General Account, and reverse repurchase agreements associated with foreign official and international accounts (the foreign repo pool).

[3] Some other noteworthy assumptions concerning our projections of liabilities are as follows: Federal Reserve notes in circulation are assumed to increase at the same rate as nominal GDP; the Treasury General Account is assumed to be steady at $150 billion; the foreign repo pool and balances in the accounts of designated financial market utilities (DFMUs) remain at their June 30, 2017, levels of about $250 billion and $75 billion, respectively; and take-up at daily overnight RRP operations is assumed to run at $100 billion until the level of reserve balances reaches $1 trillion—a value within $500 billion of its assumed longer-run level—and then to decline to zero over the course of one year.

MBS paydowns, which are uncertain, are projected to run at a fairly steady monthly pace, even though, as shown by the blue bars in the figure, receipts and reinvestments of principal from MBS securities have historically displayed considerable variability. Realized MBS paydowns will reflect the evolution of interest rates and other factors, and thus could differ significantly from projected values.

Total redemptions during the first 12 months after the implementation of the change in reinvestment policy (October 2017 to September 2018) are projected to be $293 billion. Cumulative redemptions over the period from the onset of the phase-in until the time when the size of the balance sheet is normalized are projected to be $1.5 trillion, of which about $900 billion is in Treasury securities and $600 billion in agency securities.

- ***Balance sheet.*** Normalization of the size of the balance sheet is projected to occur in the fourth quarter of 2021, one quarter earlier than projected in the June Tealbook (see the exhibit titled “Total Assets and Selected Balance Sheet Items” and the table that follows the exhibit). The balance sheet normalizes earlier in the current Tealbook projection because of the slightly faster pay-down of MBS holdings that results from the lower path of mortgage rates. At the time reserve balances reach $500 billion, total assets are projected to stand at roughly $2.9 trillion, with about $2.8 trillion in total SOMA securities holdings composed of $1.6 trillion of Treasury securities and $1.2 trillion of MBS. Total assets and SOMA holdings rise thereafter, keeping pace with the projected increases in Federal Reserve notes in circulation and Federal Reserve Bank capital.

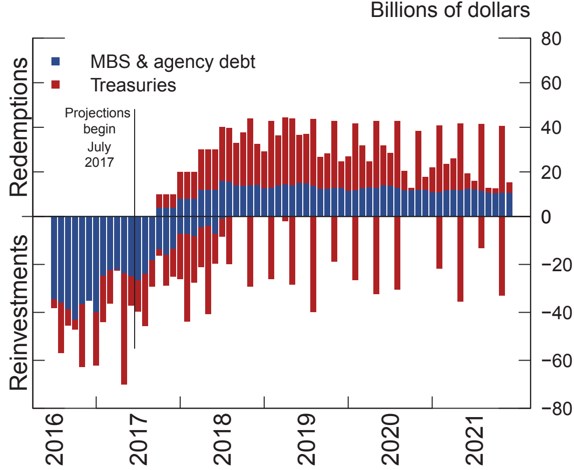
When the size of the balance sheet is normalized, assets and liabilities are each projected to stand at roughly 12½ percent of nominal GDP, down from about 25 percent at its peak. Focusing on liabilities, the assumed $500 billion longer-run level of reserve balances would amount to 2 percent of nominal GDP in 2021; this share declines modestly over the remainder of the forecast period as GDP continues to grow. Federal Reserve notes in circulation are assumed to remain 8½ percent of nominal GDP. Other liabilities, including the Treasury’s General Account, the foreign repo pool, and DFMU balances, amount to roughly 2 percent of GDP. Prior to the financial crisis, the balance sheet equaled about 6 percent of nominal GDP, with liabilities almost entirely composed of Federal Reserve notes in circulation.

Balance Sheet & Income

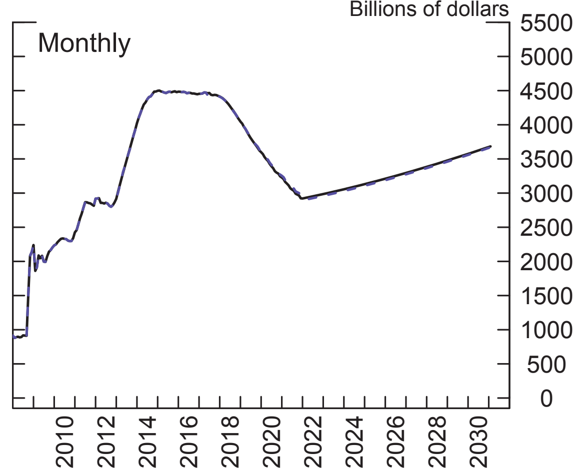
Total Assets and Selected Balance Sheet Items

July Tealbook baseline — June Tealbook baseline

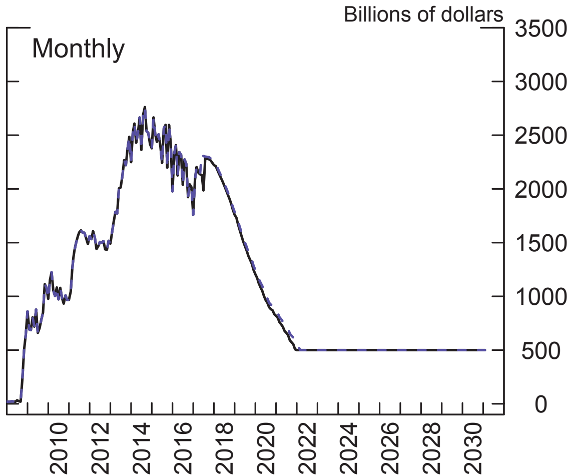
SOMA Redemptions and Reinvestments



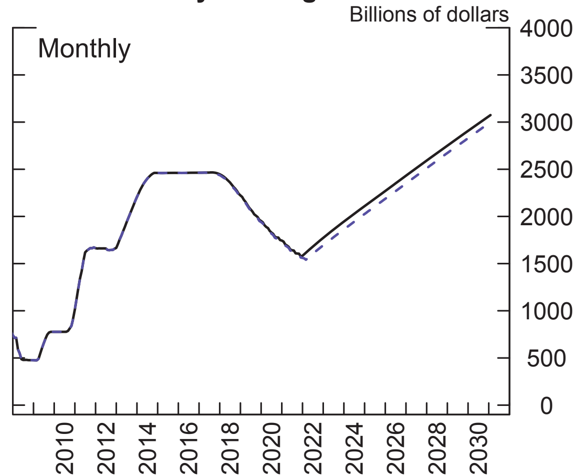
Total Assets



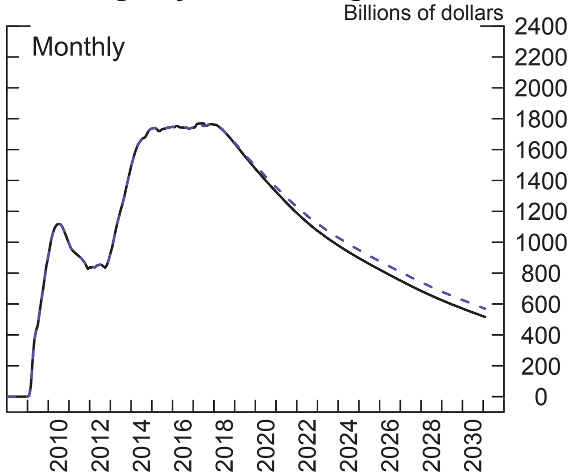
Reserve Balances



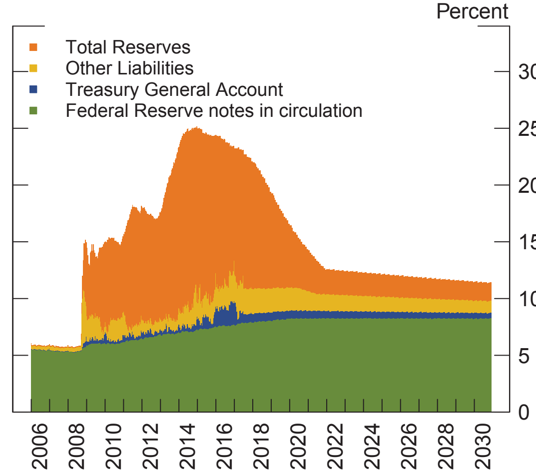
SOMA Treasury Holdings



SOMA Agency MBS Holdings



Liabilities as a Share of GDP



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

	Jun 30, 2017	2017	2019	2021	2023	2025	2030
Total assets	4,466	4,413	3,599	2,921	3,055	3,210	3,674
Selected assets							
Loans and other credit extensions*	5	0	0	0	0	0	0
Securities held outright	4,243	4,214	3,430	2,776	2,927	3,095	3,584
U.S. Treasury securities	2,465	2,449	1,952	1,584	1,945	2,270	3,061
Agency debt securities	8	4	2	2	2	2	2
Agency mortgage-backed securities	1,770	1,761	1,476	1,189	979	823	521
Unamortized premiums	166	159	125	99	81	67	40
Unamortized discounts	-15	-14	-11	-9	-7	-6	-4
Total other assets	45	47	47	47	47	47	47
Total liabilities	4,425	4,372	3,555	2,873	3,003	3,153	3,603
Selected liabilities							
Federal Reserve notes in circulation	1,515	1,565	1,763	1,888	2,018	2,168	2,618
Reverse repurchase agreements	650	350	350	250	250	250	250
Deposits with Federal Reserve Banks	2,326	2,452	1,436	730	730	730	730
Reserve balances held by depository institutions	1,986	2,221	1,206	500	500	500	500
U.S. Treasury, General Account	181	150	150	150	150	150	150
Other deposits	159	80	80	80	80	80	80
Earnings remittances due to the U.S. Treasury	2	0	0	0	0	0	0
Total Federal Reserve Bank capital**	41	41	44	48	52	57	71

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.

Balance Sheet & Income

- ***Federal Reserve remittances.*** Remittances to the Treasury are projected to decline from $92 billion in 2016 to about $78 billion this year (see the "Income Projections" exhibit). The step-down reflects higher interest expense resulting from the recent increases in the target range for the federal funds rate and the associated increases in interest on reserves as well as the projection for further rate hikes this year.[4] Remittances are projected to continue to decline in coming years, reaching a trough of $36 billion in 2020, as the size of the SOMA portfolio decreases and the target range for the federal funds rate moves up further. Subsequently, remittances gradually increase as Treasury securities are added to the SOMA portfolio to match the expansion of currency. The Federal Reserve's cumulative remittances from 2009 through 2025 are about $1.1 trillion.

  Projected cumulative remittances from 2017 through 2023 are $27 billion higher than in the June Tealbook, reflecting lower interest expense due to the lower projected path of the federal funds rate. After the size of the balance sheet is normalized, securities are added to the SOMA portfolio at yields lower than projected in June, which reduces interest income. This downward revision to interest income is larger than the reduction in interest expense after 2023, resulting in remittances to the Treasury that are lower than previously projected. On net, cumulative remittances to the Treasury through the projection period are $3 billion lower than in the June Tealbook. No deferred asset is projected.[5]

- ***Unrealized gains or losses.*** The staff estimates that the SOMA portfolio was in a net unrealized gain position of about $91 billion at the end of June.[6] The net unrealized gain or loss position of the portfolio going forward will depend primarily on the path of longer-term interest rates. In the July Tealbook, these rates are expected to rise over the next couple of years, and as a result, the portfolio is projected to shift to an unrealized loss position at the start of next year. The portfolio is expected to record a peak unrealized loss of $120 billion in 2019:Q3. This is about $100 billion smaller

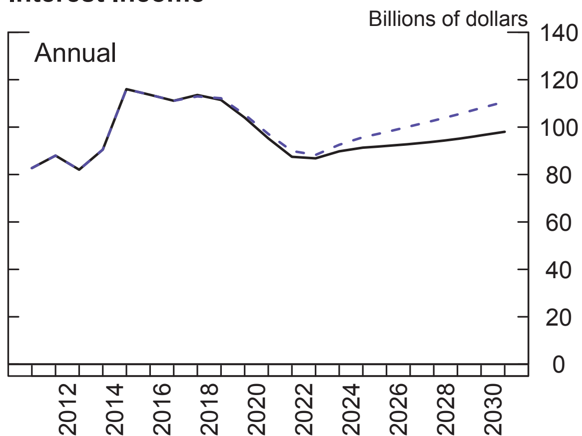
[4] We continue to assume that the FOMC will set a 25 basis-point-wide target range for the federal funds rate. We also continue to assume that the interest rate paid on excess reserve balances and the offering rate on overnight reverse repurchase agreements (ON RRPs) will be set at the top and the bottom of the range, respectively.

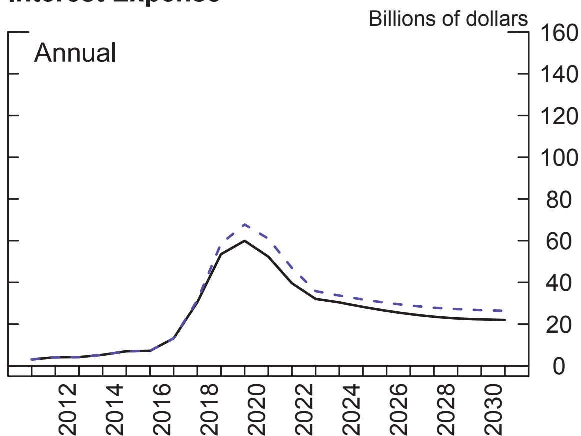
[5] In the event that a Federal Reserve Bank's earnings fall short of the amount necessary to cover its operating costs and pay dividends, a deferred asset would be recorded as a claim against future earnings remittances due to the U.S. Treasury.

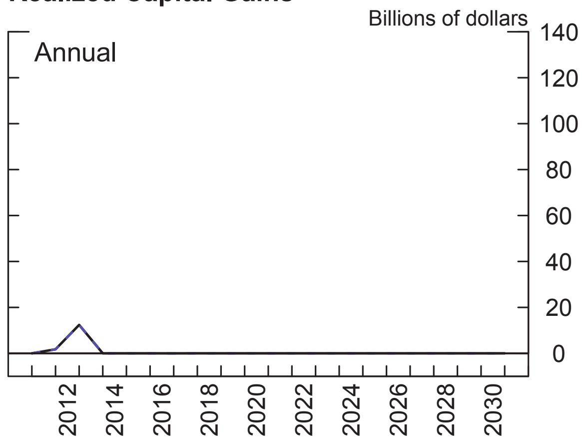
[6] The Federal Reserve reports the quarter-end net unrealized gain/loss position of the SOMA portfolio to the public in the "Federal Reserve Banks Combined Quarterly Financial Reports," available on the Board's website at http://www.federalreserve.gov/monetarypolicy/bst_fedfinancials.htm#quarterly.

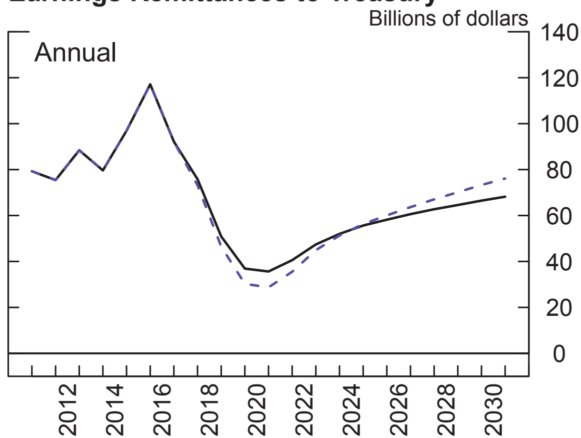
Income Projections

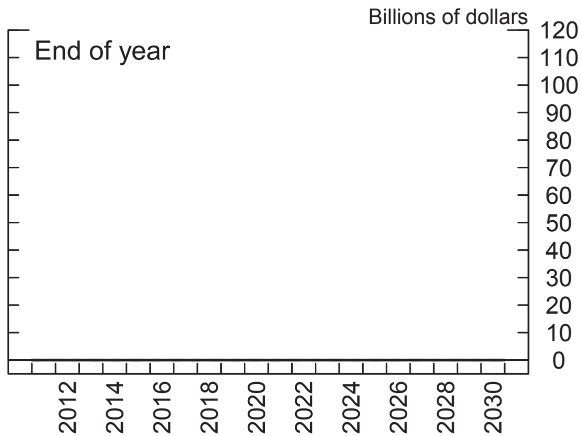
July Tealbook baseline — June Tealbook baseline

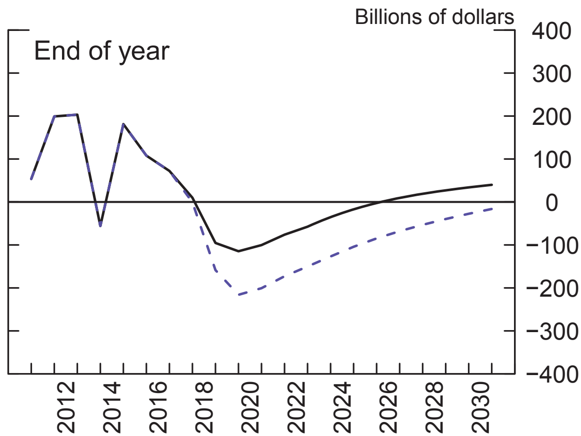












than in the June Tealbook baseline as a result of the currently forecasted lower path for longer-term interest rates. Of the overall projected peak unrealized loss, about $29 billion is attributable to holdings of Treasury securities and $91 billion to holdings of agency MBS. The unrealized loss position subsequently narrows and returns to an unrealized gain position by the end of the projection period for two reasons: First, the value of securities acquired under successive large-scale asset purchase programs (LSAPs) returns to par as those securities approach maturity; second, securities purchased after normalization are projected to increase in value above par as interest rates approach their longer-run levels.

- ***Term premium effects.*** As shown in the table "Projections for the 10-Year Treasury Term Premium Effect," the $4.2 trillion of securities held in the SOMA are estimated to be currently reducing the term premium in the 10-year Treasury yield (and thus the level of that yield) by 90 basis points. This effect, little changed from the previous Tealbook, is projected to become gradually less negative over time.[7] The evolution of the estimated term premium effect depends importantly on the difference between the expected path of the Federal Reserve's balance sheet over coming years and a benchmark counterfactual projection for the balance sheet that excludes the effects of asset purchases.[8] The effect gradually fades over time, reflecting the convergence of the balance sheet to the path implied by the counterfactual projection.

- ***SOMA characteristics.*** The weighted-average duration of the SOMA Treasury portfolio is currently about 6¼ years (see the top panel of "Projections for the Characteristics of SOMA Holdings" exhibit). The weighted-average duration is projected to decline slightly this year as the securities in the portfolio approach

[7] The term premium effect in the Tealbook B projections is about the same as in June because the assumed evolution of the SOMA portfolio is about unchanged. June Tealbook B incorporated a new assumed path for the balance sheet based on the information included in the Addendum that was released after the June meeting and an upward revision to the assumed longer-run level of reserve balances. However, July Tealbook A includes a downward revision to the term premium effect. This revision reflects the fact that the June Tealbook A did not incorporate these new balance sheet assumptions. Consequently, Tealbook A now includes a downward revision to the term premium effect as its path for the balance sheet "catches up" to the higher path incorporated in Tealbook B.

[8] In the benchmark counterfactual balance sheet projection, the staff continues to assume a longer-run level of reserves of $100 billion.

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

Date	July Tealbook baseline	June Tealbook baseline
	Quarterly Averages	
2017:Q3	-90	-91
Q4	-87	-88
2018:Q4	-74	-75
2019:Q4	-63	-64
2020:Q4	-55	-56
2021:Q4	-49	-49
2022:Q4	-44	-44
2023:Q4	-41	-41
2024:Q4	-38	-37
2025:Q4	-35	-34
2026:Q4	-32	-31
2027:Q4	-30	-29
2028:Q4	-28	-27
2029:Q4	-26	-24
2030:Q4	-24	-23

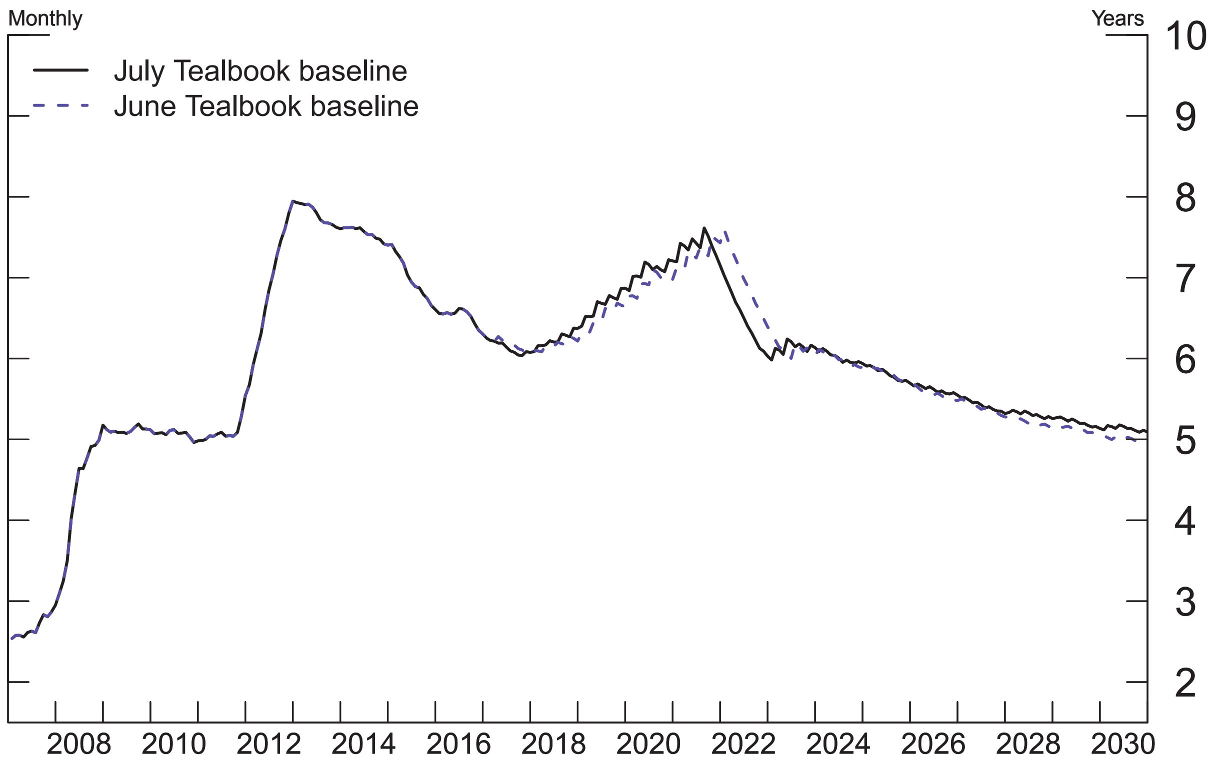
maturity, and to rise subsequently until the size of the balance sheet is normalized in late 2021.[9]

After reaching its peak, duration is projected to decline as the Desk purchases Treasury securities to keep pace with the increase in Federal Reserve notes in circulation and Federal Reserve Bank capital, as well as the ongoing principal repayments of MBS. The duration contour in this later portion of the projection is based on the assumption that the Federal Reserve will limit its purchases to Treasury bills until they account for one-third of the Treasury portfolio, close to the pre-crisis composition (currently the SOMA portfolio holds no Treasury bills). Thereafter, purchases of Treasury securities are assumed to be spread across the maturity spectrum (see the bottom panel, "Maturity Composition of SOMA Treasury Portfolio").

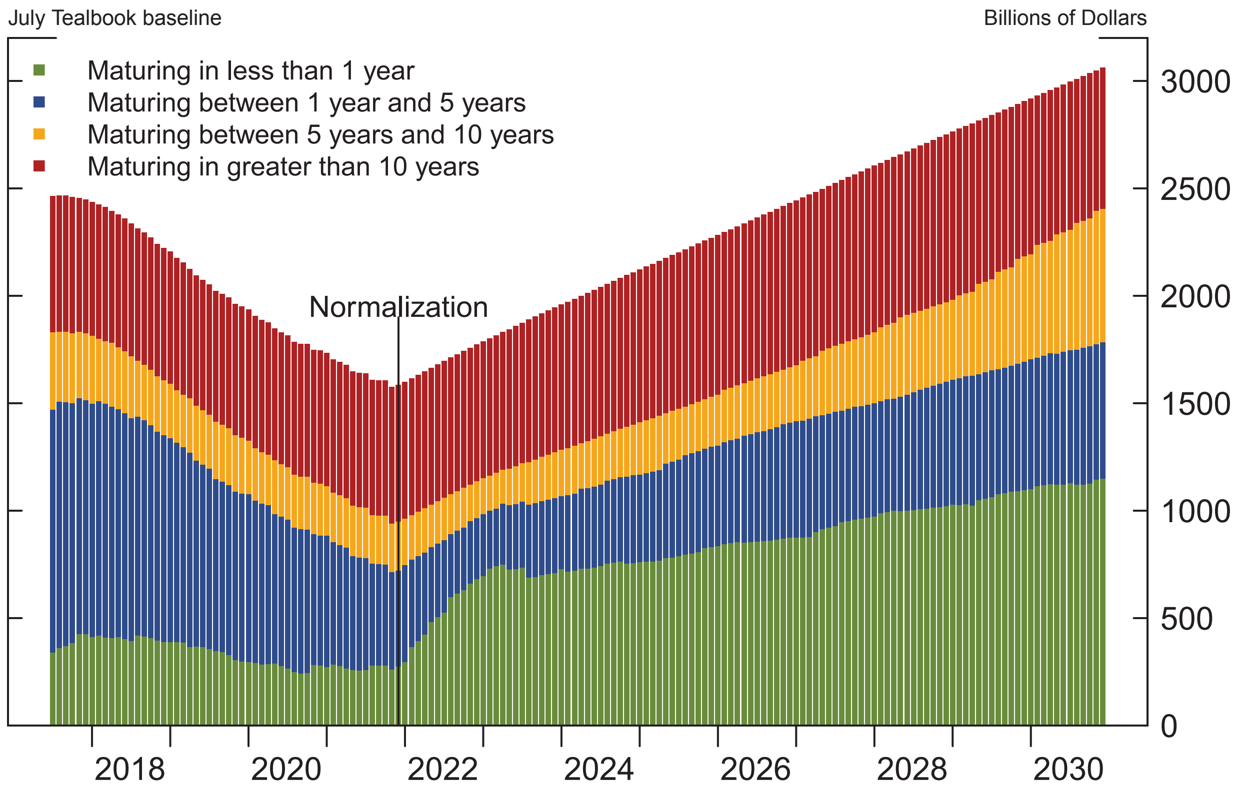
[9] The rise in portfolio duration starts in 2018 when the pace of runoffs picks up and longer-tenor securities account for a larger share of the remaining portfolio; duration increases until the size of the balance sheet is normalized.

Projections for the Characteristics of SOMA Holdings

SOMA Weighted−Average Treasury Duration



Maturity Composition of SOMA Treasury Portfolio



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Abbreviations

ABS	asset-backed securities
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
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)
TGA	U.S. Treasury’s General Account
TIPS	Treasury inflation-protected securities
TPE	Term premium effects