Prefatory Note

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

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

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Report to the FOMC on Economic Conditions and Monetary Policy

Book B

Monetary Policy: Strategies and Alternatives

April 25, 2013

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

Monetary Policy Strategies

The top panel of the first exhibit, "Policy Rules and the Staff Projection," provides near-term prescriptions for the federal funds rate from six policy rules: the Taylor (1993) rule, the Taylor (1999) rule, the inertial Taylor (1999) rule, the outcome-based rule, the first-difference rule, and the nominal income targeting rule. These prescriptions take as given the staff's baseline projections for real activity and inflation in 2013 and 2014. (Medium-term prescriptions derived from dynamic simulations of the rules are discussed below.) As shown in the left-hand columns, four of the six rules keep the federal funds rate at the effective lower bound in both the second and third quarters of 2013. The Taylor (1993) rule, which puts relatively little weight on the output gap, prescribes a federal funds rate of about 100 basis points this quarter and 130 basis points next quarter. The first-difference rule, which responds to the expected change in the output gap, prescribes a federal funds rate of about 20 basis points this quarter and 50 basis points next quarter.

The right-hand columns display the near-term prescriptions in the absence of the lower-bound constraint on the federal funds rate.[1] For the next two quarters, the inertial Taylor (1999) rule and the outcome-based rule prescribe federal funds rates that are near zero, while the Taylor (1999) rule and the nominal income targeting rule prescribe markedly negative values for the federal funds rate. The more-accommodative prescriptions arising from the latter two rules reflect their stronger short-run response to the staff's estimate of the output gap, which remains appreciably negative.

The Tealbook baseline projections for the output gap and inflation are shown in the bottom half of the exhibit, titled "Key Elements of the Staff Projection." As described in Book A of the Tealbook, the estimated output gap is 20 to 30 basis points narrower through the first quarter of 2016 than in the March Tealbook, largely reflecting modest downward revisions to levels of potential real GDP over recent years. In contrast, the staff forecast for future growth in potential output is essentially unrevised, as is the outlook for inflation.

[1] Although the rule prescriptions are not constrained to be at or above the lower bound, the inertial Taylor (1999) rule, the outcome-based rule, the nominal income targeting rule, and the first-difference rule all place substantial weight on the lagged actual federal funds rate, which is subject to the lower-bound constraint.

Strategies

Policy Rules and the Staff Projection

Near-Term Prescriptions of Selected Policy Rules

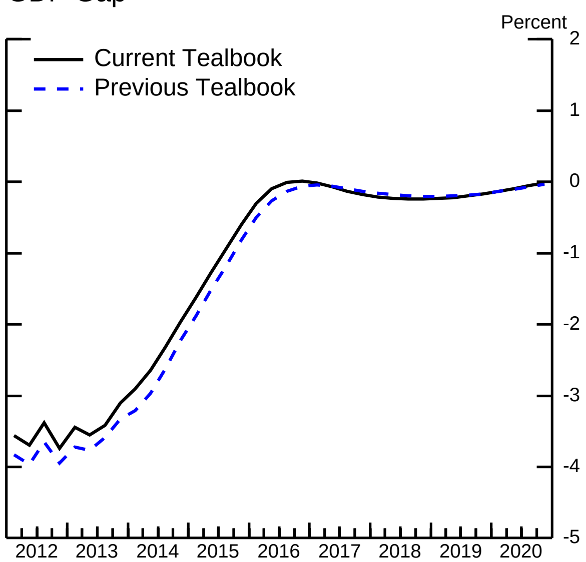
	Constrained Policy 2013Q2	Constrained Policy 2013Q3	Unconstrained Policy 2013Q2	Unconstrained Policy 2013Q3
Taylor (1993) rule	**1.00**	**1.28**	**1.00**	**1.28**
Previous Tealbook	*1.03*	*1.35*	*1.03*	*1.35*
Taylor (1999) rule	**0.13**	**0.13**	**–0.74**	**–0.40**
Previous Tealbook	*0.13*	*0.13*	*–0.82*	*–0.41*
Inertial Taylor (1999) rule	**0.13**	**0.13**	**0.01**	**–0.05**
Previous Tealbook	*0.13*	*0.13*	*0.00*	*–0.07*
Outcome-based rule	**0.13**	**0.13**	**–0.08**	**–0.16**
Previous Tealbook	*0.13*	*0.13*	*–0.06*	*–0.10*
First-difference rule	**0.21**	**0.49**	**0.21**	**0.49**
Previous Tealbook	*0.22*	*0.46*	*0.22*	*0.46*
Nominal income targeting rule	**0.13**	**0.13**	**–0.57**	**–1.05**
Previous Tealbook	*0.13*	*0.13*	*–0.55*	*–1.01*

Memo: Equilibrium and Actual Real Federal Funds Rate

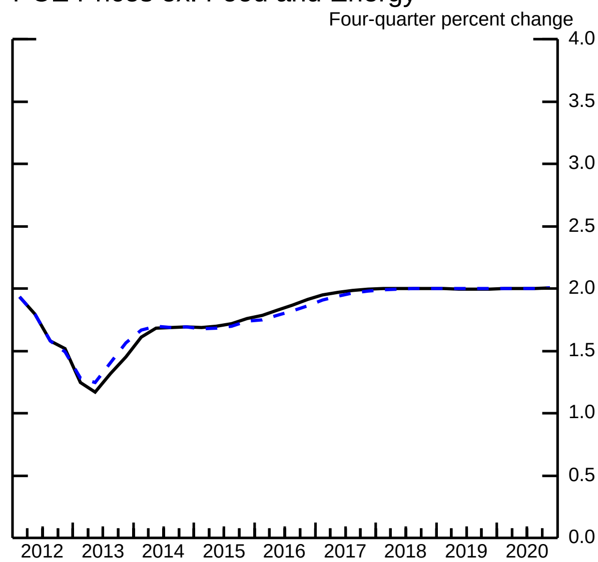
	Current Tealbook	*Current Quarter Estimate as of Previous Tealbook*	*Previous Tealbook*
Tealbook-consistent FRB/US *r** estimate	–1.54	–1.67	*–1.76*
Actual real federal funds rate	–1.12		*–1.36*

Key Elements of the Staff Projection

GDP Gap



PCE Prices ex. Food and Energy



Estimates of *r** may change at the beginning of a quarter even when the staff outlook is unchanged because the twelve-quarter horizon covered by the calculation has rolled forward one quarter. Therefore, whenever the Tealbook is published early in the quarter, the memo includes a third column labeled "Current Quarter Estimate as of Previous Tealbook."

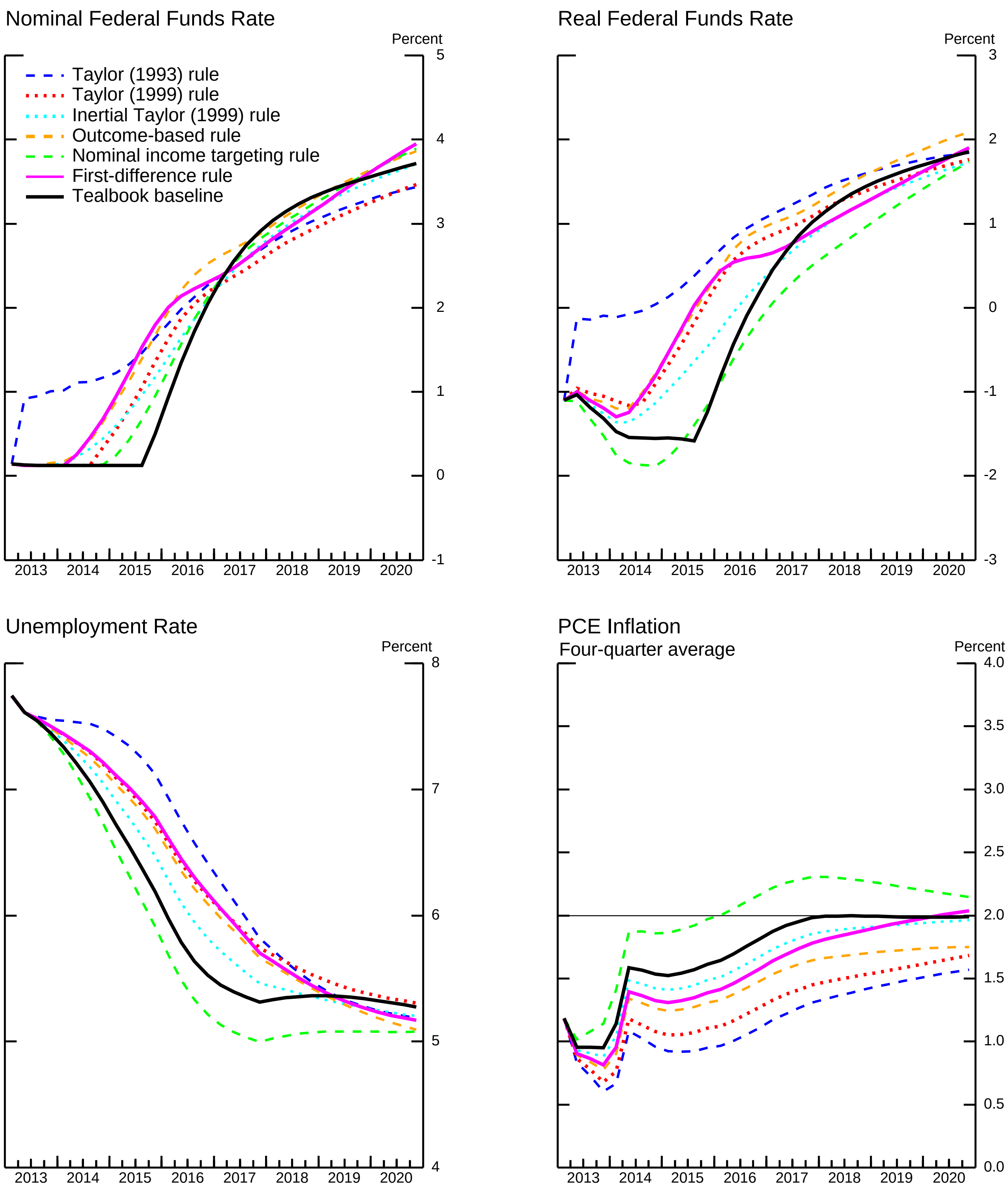
The top panel of the first exhibit also reports the Tealbook-consistent estimate of short-run *r**, which is generated by the FRB/US model after adjusting the model to replicate the staff's economic forecast. The short-run *r** estimate corresponds to the real federal funds rate that, if maintained, would return output to potential in 12 quarters. Consistent with the staff's revised assessment of the output gap, the *r** estimate for the current quarter is about 10 basis points higher than the current quarter estimate as of the March Tealbook. As has been true since October of 2008, the estimate of *r**—currently about −1.5 percent—remains below the estimated actual real federal funds rate of about −1.1 percent. Since last September, the estimated value of *r** has risen about 0.9 percentage point, reflecting (among other things) a larger-than-anticipated improvement in labor market conditions, additional asset purchases, and the moving 12-quarter evaluation window.

The second exhibit, "Policy Rule Simulations without Thresholds," reports dynamic simulations of the FRB/US model that incorporate endogenous responses of inflation and the output gap to having the federal funds rate follow the paths prescribed by the different policy rules, under the assumption that the funds rate is constrained by the effective lower bound.[2] (Alternative policy rule simulations augmented with thresholds are discussed below.) Each rule is applied from the second quarter of 2013 onward, under the assumptions that financial market participants as well as price- and wage-setters believe that the FOMC will follow that rule, and that agents fully understand and anticipate the implications of the rule for future real activity, inflation, and interest rates. The exhibit also displays the implications of following the Tealbook baseline policy, which keeps the federal funds rate at its effective lower bound of 12.5 basis points as long as the unemployment rate is above 6.5 percent and average inflation five to eight quarters hence is projected to be less than 2.5 percent; after either of these variables crosses its threshold, the federal funds rate in the baseline projection follows the prescription of the inertial Taylor (1999) rule.

[2] The staff's baseline forecast incorporates the macroeconomic effects of the large-scale asset purchase programs that the FOMC has undertaken in recent years and now assumes that the FOMC will purchase a total of $750 billion in longer-term Treasury securities and agency MBS during 2013; it also incorporates some learning on the part of financial market participants as they gradually come to recognize that cumulative purchases will not be as large as they currently expect. Based on these assumptions, all of the policy rule simulations discussed here and on later pages incorporate the projected effects of these balance sheet policies; the rules themselves are not directly adjusted for the effects of balance sheet policies.

Strategies

Policy Rule Simulations without Thresholds



Note: The policy rule simulations in this exhibit are based on rules that respond to core inflation. This choice of rule specification was made in light of the tendency for current and near-term core inflation rates to outperform headline inflation rates as predictors of the medium-term behavior of headline inflation.

Under the baseline policy, the unemployment rate falls below its threshold during the third quarter of 2015; with the resulting switch to the inertial Taylor rule, the federal funds rate rises above ¼ percent in the fourth quarter of 2015, the same quarter as in the March Tealbook. Subsequently, the federal funds rate increases steadily to 3 percent by the beginning of 2018 and then slowly rises to nearly 3¾ percent by the end of 2020. The unemployment rate is expected to gradually decline to just above the staff's estimate of the long-term natural rate of unemployment of 5¼ percent by 2018.[3] Headline inflation rises gradually and settles in at 2 percent from late-2017 on.

Without thresholds, the different policy rules all call for tightening to begin appreciably earlier than under the Tealbook baseline. As a result, most of the rules cause the real federal funds rate to be persistently higher than in the baseline forecast, thereby resulting in higher unemployment and lower inflation through most of the decade. The exception to this pattern is the nominal income targeting rule. Because this policy promises to keep the real federal funds rate persistently below baseline later in the decade, it generates stronger future real activity and higher future inflation. Indeed, in the simulations, the nominal income targeting rule generates inflation above the 2 percent goal and unemployment below the natural rate for several years late in the decade. Because the public fully anticipates these developments, long-term real interest rates are lower today than under the baseline policy, which in turn makes overall financial conditions more accommodative immediately and stimulates real activity in the near term. In addition, greater resource utilization in the short run and higher expected inflation in the future act to boost near-term inflation. These results depend importantly on the assumption that policymakers will adhere to the rule in the future and that policymakers and the public fully understand the implications of this commitment for the path of the economy.

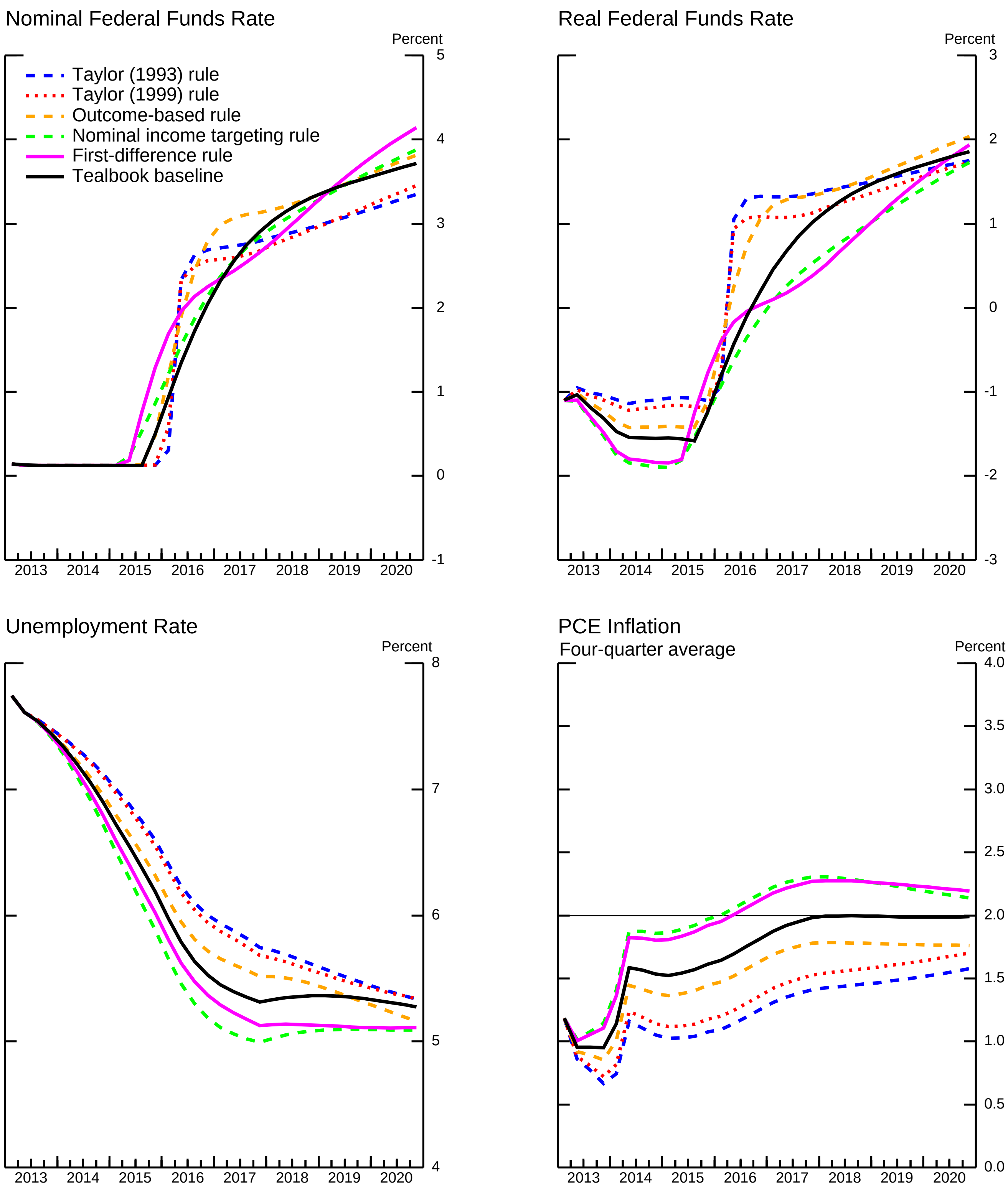
The third exhibit, "Policy Rule Simulations with Thresholds," displays dynamic simulations in which policy rules are subject to the thresholds that the Committee adopted in December 2012.[4] For each of the rules, the thresholds are imposed by keeping the federal funds rate at its effective lower bound of 12.5 basis points as long as the unemployment rate is above 6.5 percent and average inflation five to eight quarters hence

[3] The staff's estimate of the effective natural rate of unemployment declines from about 6 percent in the fourth quarter of 2013 to 5¼ percent by the end of 2017. It is assumed to remain at this level thereafter.

[4] Because the inertial Taylor (1999) with thresholds and the Tealbook baseline are one and the same, their results are not shown separately.

Strategies

Policy Rule Simulations with Thresholds



Note: The policy rule simulations in this exhibit are based on rules that respond to core inflation. This choice of rule specification was made in light of the tendency for current and near-term core inflation rates to outperform headline inflation rates as predictors of the medium-term behavior of headline inflation.

is projected to be less than 2.5 percent. Financial market participants and price- and wage-setters are assumed to understand that policy will switch to the specified rule when one of the threshold conditions is crossed and to view this switch as permanent and fully credible. In each of the simulations discussed below, crossing the unemployment threshold turns out to be the catalyst for switching to the specified rule.

The simulations with thresholds bring out several important properties of the rules. First, imposing the thresholds postpones the departure of the federal funds rate from the effective lower bound for all five rules. In all but one instance, the departure is postponed by a year or more; for the nominal income targeting rule, the delay is a single quarter. In these simulations, a later departure from the lower bound results in more rapid convergence to maximum employment but typically has little effect on the path of inflation.[5] Second, the conduct of policy after the threshold is crossed exerts a major influence on the amount of stimulus implied by the threshold strategy. In particular, post-crossing policy rules that entail a more gradual increase in the federal funds rate, such as the nominal income targeting rule and the first-difference rule, imply a more rapid decline in the unemployment rate before the threshold is crossed. As a result, these rules lead to an earlier crossing of the threshold and an earlier departure of the federal funds rate from the effective lower bound. Third, the effectiveness of threshold-augmented rules rests heavily on policymakers' ability to make a credible commitment to follow a particular rule after a threshold is crossed, and on the private sector's ability to anticipate the paths for the federal funds rate, real activity, and inflation implied by that rule.

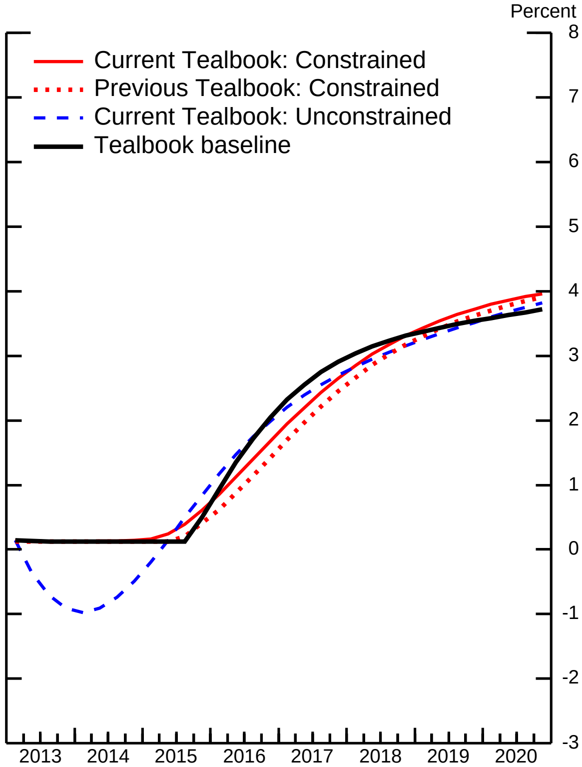
The fourth exhibit, "Constrained vs. Unconstrained Optimal Control Policy," compares the optimal control simulations derived using this Tealbook's baseline forecast with those based on the March forecast.[6] Policymakers are assumed to place equal weights on keeping headline PCE inflation close to the Committee's 2 percent goal, on keeping the unemployment rate close to the staff's estimate of the effective natural rate of unemployment, and on minimizing changes in the federal funds rate.

[5] An exception is the case of the first difference rule, in which the thresholds combined with the rule's high degree of interest-rate smoothing imply that policy will remain accommodative for an extended period of time, which boosts expected future inflation and in turn near-term inflation.

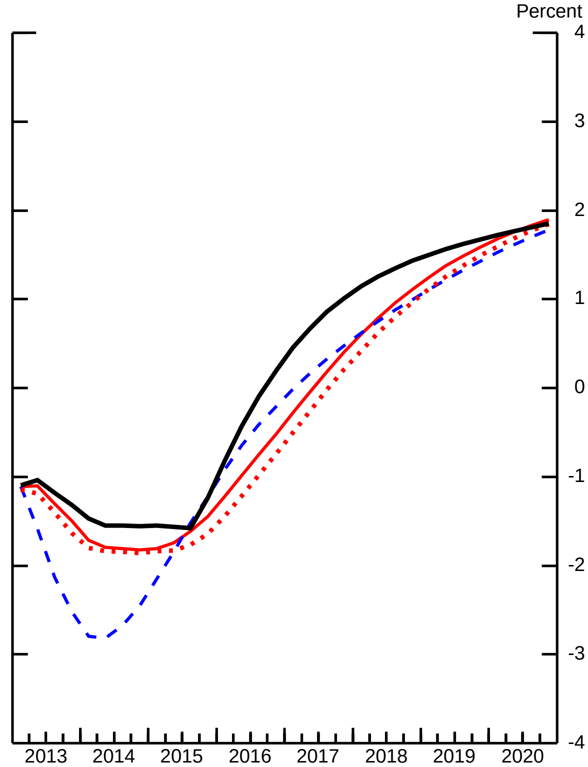
[6] The optimal control policy simulations incorporate the assumptions about underlying economic conditions used in the staff's baseline forecast, as well as the assumptions about balance sheet policies described in footnote 2. The optimal control simulations do not incorporate thresholds.

Constrained vs. Unconstrained Optimal Control Policy

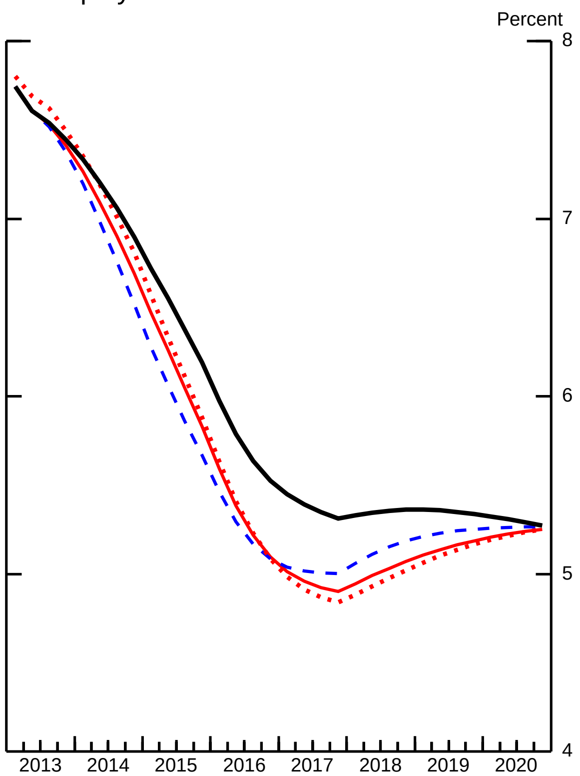
Nominal Federal Funds Rate



Real Federal Funds Rate

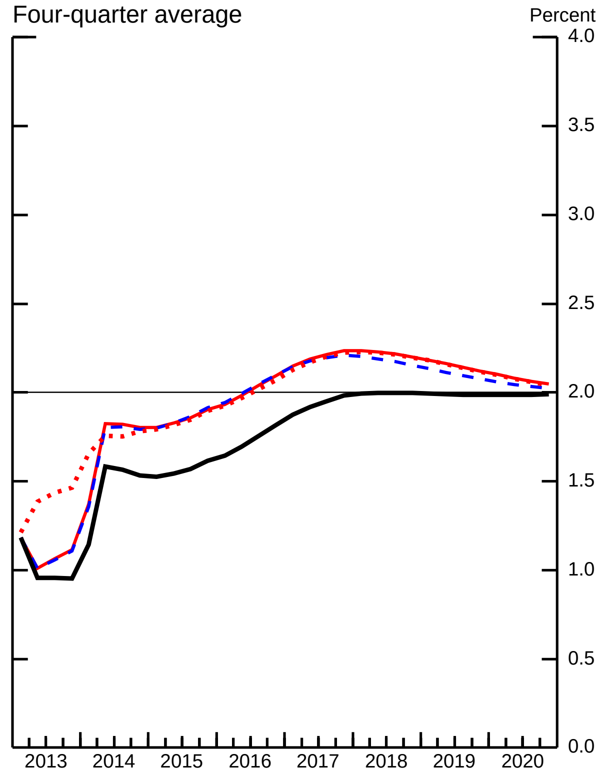


Unemployment Rate



PCE Inflation

Four-quarter average



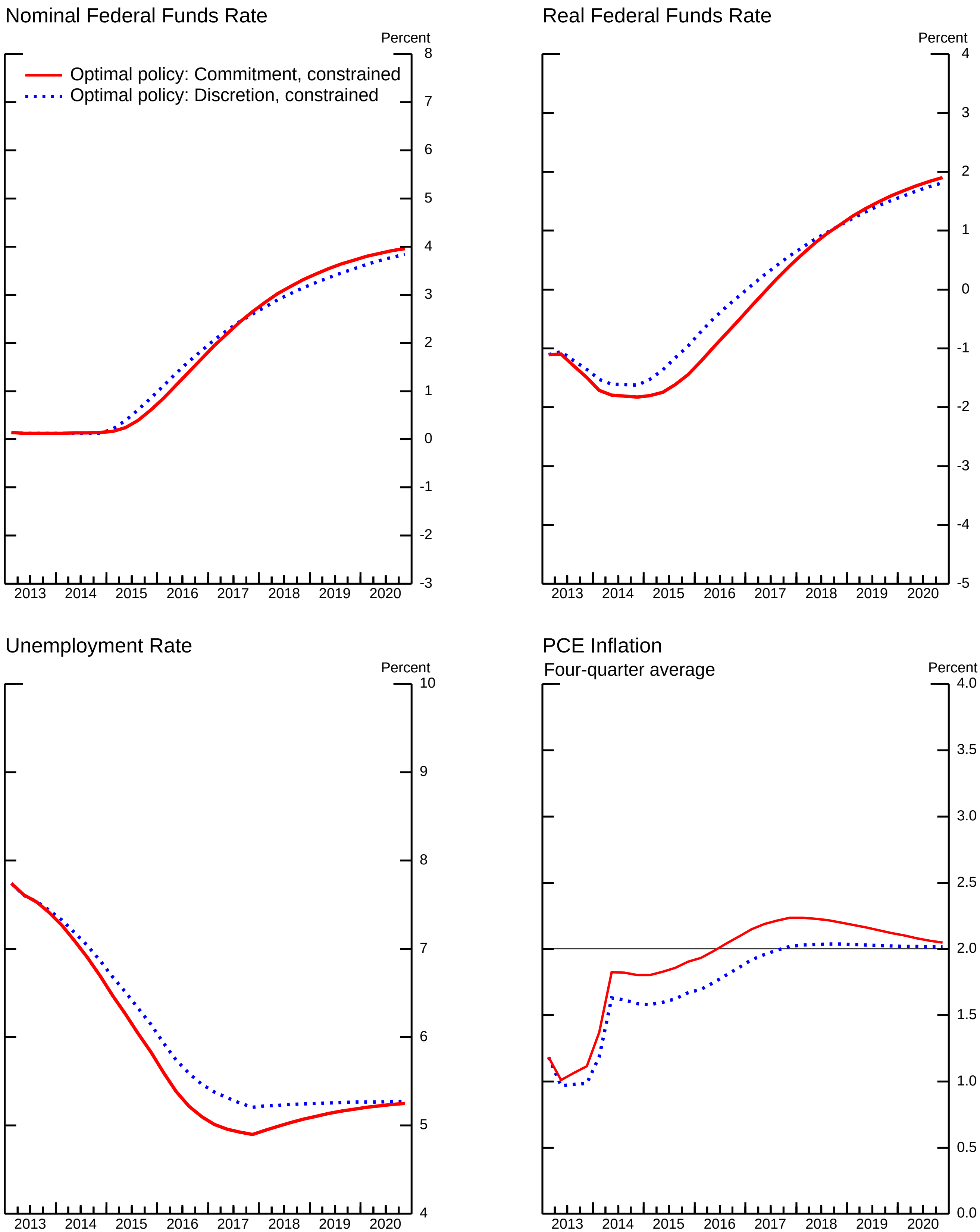
The simulations indicate that, with the federal funds rate constrained to remain positive, the optimal control path rises above the effective lower bound in the third quarter of 2015, one quarter before liftoff in the staff's current baseline forecast and in the optimal control exercise shown in the March Tealbook. Subsequently, the optimal control path for the federal funds rate rises to 3 percent by the middle of 2018 and to just below 4 percent by the end of 2020.[7]

Although optimal control implies an earlier departure from the lower bound than the staff's baseline outlook, it generates a lower average path for the real federal funds rate that promotes a stronger recovery and an earlier achievement of the Committee's assumed objectives. In particular, the unemployment rate drops below 6.5 percent in the first quarter of 2015 and falls to about 6 percent by the time the federal funds rate leaves the effective lower bound; thereafter, the unemployment rate declines to 4.9 percent by the end of 2017, temporarily undershooting the staff's estimate of the long-term natural rate of unemployment. Inflation reaches the Committee's 2 percent objective by the second half of 2016 and subsequently overshoots it by about ¼ percentage point before gradually moving back toward 2 percent. The earlier achievement of the Committee's assumed objectives occurs because, given current circumstances, the optimal control policy credibly promises to remain highly accommodative for even longer than under the baseline policy, thereby yielding more favorable near-term expectational effects on financial conditions, real activity, and inflation.

In the absence of the lower-bound constraint, the optimal control path for the federal funds rate would decline to about −1 percent by the beginning of 2014 and become positive again in the second quarter of 2015. The unconstrained policy would bring the unemployment rate down a little faster over the next few years and subsequently would keep the unemployment rate a little closer to the natural rate than would be the case under the constrained policy. The path for inflation is quite similar for the unconstrained and constrained policies.

[7] Although the loss function uses headline inflation instead of core inflation, the real federal funds rate shown in the upper right panel of the exhibit, as in the other simulations reported in this section, is calculated as the difference between the nominal federal funds rate and a four-quarter moving average of core PCE inflation. Core PCE inflation is used to compute the real rate for this illustrative purpose because it provides a less volatile measure of inflation expectations than does a four-quarter moving average of headline inflation.

Optimal Control Policy: Commitment vs. Discretion



The optimal control policy concept presented in "Constrained vs. Unconstrained Optimal Control Policy," corresponds to a commitment policy under which policymakers make choices today that effectively constrain policy choices in future periods. The fifth exhibit, "Optimal Control Policy: Commitment vs. Discretion," compares the commitment results with the outcomes simulated from an alternative optimality concept—discretion. Under discretion, policymakers cannot credibly commit to carrying out a plan that requires them to make future choices that would be suboptimal at that future time, limiting their ability to influence private-sector expectations regarding the federal funds rate and other variables. Instead, the private sector knows that future Committees will always reoptimize without regard for past policymakers' promises, and this behavior leads to less stimulative policy in current circumstances. Accordingly, under discretion, the Committee raises the federal funds rate a bit sooner and keeps monetary policy somewhat less accommodative than under commitment, so the unemployment rate does not fall as much below its natural rate and inflation does not rise as much above the 2 percent objective.

The final two exhibits, "Outcomes under Alternative Policies without Thresholds" and "Outcomes under Alternative Policies with Thresholds," tabulate the simulation results for key variables under each policy rule discussed above, with and without thresholds.

Strategies

Outcomes under Alternative Policies without Thresholds

(Percent change, annual rate, from end of preceding period except as noted)

Measure and scenario	2012 H2	2013	2014	2015	2016	2017
Real GDP						
Extended Tealbook baseline[1]	1.7	2.6	3.2	3.5	2.9	2.0
Taylor (1993)	1.7	2.1	2.2	3.0	3.0	2.7
Taylor (1999)	1.7	2.4	2.7	3.1	2.8	2.4
Inertial Taylor (1999)	1.7	2.5	2.9	3.3	2.9	2.3
Outcome based	1.7	2.4	2.7	3.1	2.8	2.5
First difference	1.7	2.4	2.6	3.0	2.9	2.5
Nominal income targeting	1.7	2.7	3.5	3.7	3.0	2.1
Constrained optimal control	1.7	2.7	3.6	3.8	3.1	2.0
Unemployment rate[2]						
Extended Tealbook baseline[1]	7.8	7.4	6.9	6.2	5.5	5.3
Taylor (1993)	7.8	7.6	7.5	7.1	6.4	5.8
Taylor (1999)	7.8	7.5	7.2	6.7	6.2	5.7
Inertial Taylor (1999)	7.8	7.5	7.0	6.5	5.8	5.5
Outcome based	7.8	7.5	7.2	6.7	6.1	5.7
First difference	7.8	7.5	7.2	6.8	6.2	5.7
Nominal income targeting	7.8	7.4	6.7	5.9	5.2	5.0
Constrained optimal control	7.8	7.4	6.7	5.8	5.1	4.9
Total PCE prices						
Extended Tealbook baseline[1]	1.6	1.0	1.5	1.6	1.8	2.0
Taylor (1993)	1.6	0.6	1.0	1.0	1.1	1.3
Taylor (1999)	1.6	0.7	1.1	1.1	1.3	1.5
Inertial Taylor (1999)	1.6	0.9	1.4	1.5	1.7	1.9
Outcome based	1.6	0.8	1.3	1.3	1.5	1.6
First difference	1.6	0.8	1.3	1.4	1.6	1.8
Nominal income targeting	1.6	1.1	1.9	2.0	2.2	2.3
Constrained optimal control	1.6	1.1	1.8	1.9	2.1	2.2
Core PCE prices						
Extended Tealbook baseline[1]	1.1	1.5	1.7	1.8	1.9	2.0
Taylor (1993)	1.1	1.1	1.1	1.1	1.2	1.3
Taylor (1999)	1.1	1.2	1.2	1.3	1.4	1.5
Inertial Taylor (1999)	1.1	1.4	1.6	1.6	1.8	1.9
Outcome based	1.1	1.3	1.4	1.5	1.6	1.7
First difference	1.1	1.3	1.5	1.5	1.7	1.8
Nominal income targeting	1.1	1.6	2.0	2.1	2.3	2.3
Constrained optimal control	1.1	1.6	2.0	2.1	2.2	2.2
Federal funds rate[2]						
Extended Tealbook baseline[1]	0.2	0.1	0.1	0.5	2.0	2.9
Taylor (1993)	0.2	1.0	1.2	1.6	2.3	2.7
Taylor (1999)	0.2	0.1	0.3	1.4	2.2	2.6
Inertial Taylor (1999)	0.2	0.1	0.4	1.2	2.1	2.7
Outcome based	0.2	0.2	0.6	1.7	2.5	2.9
First difference	0.2	0.1	0.7	1.8	2.3	2.7
Nominal income targeting	0.2	0.1	0.1	0.9	2.1	2.8
Constrained optimal control	0.2	0.1	0.1	0.6	1.7	2.7

1. Policy in the Tealbook baseline keeps the federal funds rate at its effective lower bound of 12.5 basis points as long as the unemployment rate is above 6.5 percent and projected one-year-ahead inflation is less than 2.5 percent. Once either threshold is crossed, the federal funds rate follows the prescription of the inertial Taylor (1999) rule.
2. Percent, average for the final quarter of the period.

Strategies

Outcomes under Alternative Policies with Thresholds[1]

(Percent change, annual rate, from end of preceding period except as noted)

Measure and scenario	2012 H2	2013	2014	2015	2016	2017
Real GDP						
Extended Tealbook baseline[1]	1.7	2.6	3.2	3.5	2.9	2.0
Taylor (1993)	1.7	2.4	2.8	3.2	2.7	2.1
Taylor (1999)	1.7	2.4	2.8	3.3	2.7	2.2
Outcome based	1.7	2.5	3.1	3.4	2.7	2.0
First difference	1.7	2.6	3.4	3.6	2.9	2.2
Nominal income targeting	1.7	2.7	3.6	3.7	2.9	2.0
Constrained optimal control	1.7	2.7	3.6	3.8	3.1	2.0
Unemployment rate[2]						
Extended Tealbook baseline[1]	7.8	7.4	6.9	6.2	5.5	5.3
Taylor (1993)	7.8	7.5	7.1	6.6	6.0	5.7
Taylor (1999)	7.8	7.5	7.1	6.6	5.9	5.7
Outcome based	7.8	7.5	7.0	6.3	5.7	5.5
First difference	7.8	7.4	6.8	6.0	5.4	5.1
Nominal income targeting	7.8	7.4	6.7	5.9	5.2	5.0
Constrained optimal control	7.8	7.4	6.7	5.8	5.1	4.9
Total PCE prices						
Extended Tealbook baseline[1]	1.6	1.0	1.5	1.6	1.8	2.0
Taylor (1993)	1.6	0.7	1.1	1.1	1.3	1.4
Taylor (1999)	1.6	0.7	1.1	1.2	1.4	1.5
Outcome based	1.6	0.9	1.4	1.4	1.6	1.8
First difference	1.6	1.1	1.8	1.9	2.1	2.3
Nominal income targeting	1.6	1.1	1.9	2.0	2.2	2.3
Constrained optimal control	1.6	1.1	1.8	1.9	2.1	2.2
Core PCE prices						
Extended Tealbook baseline[1]	1.1	1.5	1.7	1.8	1.9	2.0
Taylor (1993)	1.1	1.2	1.2	1.2	1.4	1.4
Taylor (1999)	1.1	1.2	1.3	1.3	1.5	1.5
Outcome based	1.1	1.4	1.5	1.6	1.7	1.8
First difference	1.1	1.6	2.0	2.1	2.2	2.3
Nominal income targeting	1.1	1.6	2.0	2.1	2.3	2.3
Constrained optimal control	1.1	1.6	2.0	2.1	2.2	2.2
Federal funds rate[2]						
Extended Tealbook baseline[1]	0.2	0.1	0.1	0.5	2.0	2.9
Taylor (1993)	0.2	0.1	0.1	0.1	2.7	2.8
Taylor (1999)	0.2	0.1	0.1	0.1	2.6	2.7
Outcome based	0.2	0.1	0.1	0.5	2.8	3.1
First difference	0.2	0.1	0.1	1.3	2.3	2.7
Nominal income targeting	0.2	0.1	0.1	0.9	2.1	2.8
Constrained optimal control	0.2	0.1	0.1	0.6	1.7	2.7

1. With the exception of constrained optimal control, monetary policy is specified to keep the federal funds rate at its effective lower bound of 12.5 basis points as long as the unemployment rate is above 6.5 percent and projected one-year-ahead inflation is less than 2.5 percent. Once either of these thresholds is crossed, the federal funds rate follows the prescriptions of the specified rule. Policy in the Tealbook baseline also uses these threshold conditions and switches to the inertial Taylor (1999) rule once either of these thresholds is crossed.
2. Percent, average for the final quarter of the period.

Strategies

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Appendix

POLICY RULES USED IN "MONETARY POLICY STRATEGIES"

The table below gives the expressions for the selected policy rules used in "Monetary Policy Strategies." In the table, R_t denotes the nominal federal funds rate for quarter *t*, while the right-hand-side variables include the staff's projection of trailing four-quarter core PCE inflation for the current quarter and three quarters ahead (π_t and $\pi_{t+3|t}$), the output gap estimate for the current period as well as its one-quarter-ahead forecast (gap_t and $gap_{t+1|t}$), and the forecast of the three-quarter-ahead annual change in the output gap ($\Delta^4 gap_{t+3|t}$). The value of policymakers' long-run inflation objective, denoted π^*, is 2 percent. The nominal income targeting rule responds to the nominal income gap, which is defined as the difference between nominal income yn_t (100 times the log of the level of nominal GDP) and a target value yn_t^* (100 times the log of target nominal GDP). Target nominal GDP in 2007:Q4 is set equal to the staff's estimate of potential real GDP in that quarter multiplied by the GDP deflator in that quarter; subsequently, target nominal GDP grows 2 percentage points per year faster than the staff's estimate of potential GDP.

Taylor (1993) rule	$R_t = 2 + \pi_t + 0.5(\pi_t - \pi^*) + 0.5gap_t$
Taylor (1999) rule	$R_t = 2 + \pi_t + 0.5(\pi_t - \pi^*) + gap_t$
Inertial Taylor (1999) rule	$R_t = 0.85R_{t-1} + 0.15(2 + \pi_t + 0.5(\pi_t - \pi^*) + gap_t)$
Outcome-based rule	$R_t = 1.2R_{t-1} - 0.39R_{t-2} + 0.19[0.54 + 1.73\pi_t + 3.66gap_t - 2.72gap_{t-1}]$
First-difference rule	$R_t = R_{t-1} + 0.5(\pi_{t+3\|t} - \pi^*) + 0.5\Delta^4 gap_{t+3\|t}$
Nominal income targeting rule	$R_t = 0.75R_{t-1} + 0.25(2 + \pi_t + yn_t - yn_t^*)$

The first two of the selected rules were studied by Taylor (1993, 1999), while the inertial Taylor (1999) rule has featured prominently in recent analysis by Board staff.[1] The outcome-based rule uses policy reactions estimated using real-time data over the sample 1988:Q1–2006:Q4. The intercept of the outcome-based rule was chosen so that it is consistent with a 2 percent long-run inflation objective and a long-run real interest rate of 2 percent, a value used in the FRB/US model.[2] The intercepts of the Taylor (1993, 1999) rules, and the long-run

[1] See Erceg and others (2012).

[2] For the January 2013 Tealbook, the staff revised the long-run value of the real interest rate from 2¼ percent to 2 percent. The FRB/US model as well as the intercepts of the different policy rules have been adjusted to reflect this change.

intercept of the inertial Taylor (1999) rule, are set at 2 percent for the same reason. The 2 percent real rate estimate also enters the long-run intercept of the nominal income targeting rule. The prescriptions of the first difference rule do not depend on the level of the output gap or the long-run, quarterly real interest rate; see Orphanides (2003).

Near-term prescriptions from these rules are calculated using Tealbook projections for inflation and the output gap. The inertial Taylor (1999) rule, the first-difference rule, the estimated outcome-based rule, and the nominal income targeting rule include the lagged policy rate as a right-hand-side variable. When the Tealbook is published early in the quarter, the lines denoted "Previous Tealbook" report rule prescriptions based on the previous Tealbook's staff outlook, jumping off from the actual value of the lagged funds rate in the previous quarter. When the Tealbook is published late in the quarter, the lines denoted "Previous Tealbook Outlook" report rule prescriptions based on the previous Tealbook's staff outlook, but jumping off from the average value for the policy rate thus far this quarter.

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Estimates of the Equilibrium and Actual Real Rates

An estimate of the equilibrium real rate appears as a memo item in the first exhibit, "Policy Rules and the Staff Projection." The concept of the short-run equilibrium real rate underlying the estimate corresponds to the level of the real federal funds rate that is consistent with output reaching potential in twelve quarters using the projection for the economy of FRB/US, the staff's large-scale econometric model of the U.S. economy. This estimate depends on a very broad array of economic factors, some of which take the form of projected values of the model's exogenous variables. The estimate reported is the "Tealbook-consistent" estimate of r^*, which is generated after the paths of exogenous variables in the FRB/US model are adjusted so that they match those in the extended Tealbook forecast. Model simulations then determine the value of the real federal funds rate that closes the output gap conditional on the exogenous variables in the extended baseline forecast.

The estimated actual real federal funds rate reported in the exhibit is constructed as the difference between the federal funds rate and the trailing four-quarter change in the core PCE price index. The federal funds rate is specified as the midpoint of the target range for the federal funds rate on the Tealbook Book B publication date.

FRB/US Model Simulations

The exhibits of "Monetary Policy Strategies" that report results from simulations of alternative policies are derived from dynamic simulations of the FRB/US model. The simulated policy rule is assumed to be in force over the whole period covered by the simulation. For the optimal control simulations, the dotted line labeled "Previous Tealbook" is derived from the optimal control simulations, when applied to the previous Tealbook projection.

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Monetary Policy Alternatives

This Tealbook presents three policy alternatives—labeled A, B, and C—for the Committee's consideration. All three would continue to increase the Federal Reserve's holdings of agency-backed MBS and longer-term Treasury securities, but at different rates: Alternative B would continue securities purchases at the pace that the Committee specified in its March statement ($85 billion per month, in total); Alternative A would increase the pace to a total of $100 billion per month; and Alternative C would expand asset holdings at a slower pace of $60 billion per month. The three draft statements again repeat the stopping condition that the Committee "will continue its purchases of Treasury and agency mortgage-backed securities, and employ its other policy tools as appropriate, until the outlook for the labor market has improved substantially in a context of price stability." They also reiterate that "in determining the size, pace, and composition of its asset purchases, the Committee will continue to take appropriate account of the likely efficacy and costs of such purchases as well as the extent of progress toward its economic objectives." All three alternatives would maintain the 0 to ¼ percent target range and threshold-based forward guidance for the federal funds rate. Alternatives B and C would keep the unemployment rate threshold at 6½ percent, while Alternative A would lower that threshold to 5½ percent and state that the Committee "intends to maintain" a highly accommodative policy for a considerable time (rather than "expects that" a highly accommodative policy will be appropriate for a considerable time, as in Alternatives B and C). All of the alternatives would retain the 2½ percent threshold for projected inflation between one and two years ahead. And all would keep the language indicating that the Committee will also consider other information, including additional measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments, when making decisions about how long to maintain such a level of accommodation.

The draft statement for Alternative B is unchanged from the March statement except for updating the summary of incoming economic information. In particular, it begins by observing that "economic activity has been expanding at a moderate pace" and goes on to indicate that labor market conditions "have shown some improvement in recent months, on balance," but the unemployment rate remains elevated. In contrast, the draft statement for Alternative A states that the "pace of improvement in labor market conditions appears to have slowed." The draft statement for Alternative C offers a more positive characterization of the incoming data, saying that they "confirm" a return to moderate economic growth. Moreover, the draft statement for Alternative C, while acknowledging that the unemployment rate remains elevated, emphasizes the decline in the unemployment rate and observes that "other indicators of labor market conditions have shown additional improvement in recent months." All the alternatives again indicate that household spending and business fixed investment have advanced and that the housing sector has strengthened further. Alternatives A and B acknowledge that "fiscal policy is restraining economic growth," while Alternative C indicates that fiscal policy "is somewhat more restrictive." Alternatives B and C indicate that inflation "has been running somewhat below the Committee's longer-run objective, apart from temporary variations that largely reflect fluctuations in energy prices," while Alternative A says inflation has been running "below" (rather than "somewhat below") the longer-run goal. All three say, as in previous statements, that longer-term inflation expectations have remained stable.

Alternative B repeats the March statement's assessment of the medium-term outlook, indicating that, with appropriate policy accommodation, the Committee expects that economic growth will proceed at a moderate pace and the unemployment rate will decline gradually toward mandate-consistent levels. In light of its more positive reading of the recent economic data, Alternative C states that, with appropriate policy accommodation, economic growth "will proceed at a moderate pace in coming quarters and then pick up," and that the unemployment rate "will continue to decline" toward mandate-consistent levels. In contrast, Alternative A says that, "absent further policy accommodation," economic growth "might not be strong enough to generate sustained improvement in labor market conditions."

With respect to the outlook for inflation, Alternative B maintains the formulation used in March, stating that the Committee "anticipates that inflation over the medium term likely will run at or below its 2 percent objective." Alternative A indicates that, without further policy accommodation, medium-term inflation "likely would continue to run below" the Committee's 2 percent objective, while Alternative C says that inflation "will run close to" the 2 percent objective over the medium term. Finally, the draft statements for Alternatives A and B, like the March statement, refer to downside risks to the economic outlook, while Alternative C says that the Committee "sees the risks to both economic growth and inflation as roughly balanced."

The following table summarizes key elements of the alternative statements. The summary table is followed by complete drafts of the three statements and then by arguments for each alternative.

Alternatives

Table 1: Overview of Policy Alternatives for May 1 FOMC Statement

Selected Elements	March Statement	April-May Alternatives A	April-May Alternatives B	April-May Alternatives C
Economic Outlook				
Outlook	with appropriate policy accommodation, growth will proceed at a moderate pace and the unemployment rate will gradually decline inflation likely will run at or below 2 percent	without further policy accommodation, economic growth might not be strong enough to generate a sustained improvement in labor market conditions and that inflation over the medium term likely would continue to run below its 2 percent objective	unchanged	with appropriate policy accommodation, economic growth will proceed at a moderate pace in coming quarters and then pick up, and the unemployment rate will continue to decline inflation over the medium term likely will run close to its 2 percent objective
Balance Sheet Policies				
Agency MBS	$40 billion per month	$45 billion per month	unchanged	$30 billion per month
Longer-term Treasuries	$45 billion per month	$55 billion per month	unchanged	$30 billion per month
Rationale for Purchases	to support a stronger recovery and ensure inflation consistent with dual mandate	unchanged		based on the improvement in its outlook for the labor market since last September
Securities Reinvestment	reinvest principal payments from agency debt and agency MBS into agency MBS	unchanged		
	roll over maturing Treasuries	unchanged		
Guidance	if outlook for labor market does not improve substantially, will continue purchases, and employ other policy tools as appropriate, until such improvement is achieved	unchanged		
	will continue to take appropriate account of the likely efficacy and costs of such purchases as well as the extent of progress toward its economic objectives	unchanged		
Federal Funds Rate				
Target	0 to ¼ percent	unchanged		
Guidance	for a considerable time after purchases end and recovery strengthens	unchanged		
	at least as long as unemployment rate is above 6½ percent, inflation one to two years ahead is no more than 2½ percent, and inflation expectations remain well anchored	at least as long as unemployment rate is above 5½ percent…	unchanged	
	will consider other information; will take balanced approach to removing accommodation	unchanged		

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MARCH FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in January suggests a return to moderate economic growth following a pause late last year. Labor market conditions have shown signs of improvement in recent months but the unemployment rate remains elevated. Household spending and business fixed investment advanced, and the housing sector has strengthened further, but fiscal policy has become somewhat more restrictive. Inflation has been running somewhat below the Committee's longer-run objective, apart from temporary variations that largely reflect fluctuations in energy prices. Longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic growth will proceed at a moderate pace and the unemployment rate will gradually decline toward levels the Committee judges consistent with its dual mandate. The Committee continues to see downside risks to the economic outlook. The Committee also anticipates that inflation over the medium term likely will run at or below its 2 percent objective.

3. To support a stronger economic recovery and to help ensure that inflation, over time, is at the rate most consistent with its dual mandate, the Committee decided to continue purchasing additional agency mortgage-backed securities at a pace of $40 billion per month and longer-term Treasury securities at a pace of $45 billion per month. 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. Taken together, these actions should maintain downward pressure on longer-term interest rates, support mortgage markets, and help to make broader financial conditions more accommodative.

4. The Committee will closely monitor incoming information on economic and financial developments in coming months. The Committee will continue its purchases of Treasury and agency mortgage-backed securities, and employ its other policy tools as appropriate, until the outlook for the labor market has improved substantially in a context of price stability. In determining the size, pace, and composition of its asset purchases, the Committee will continue to take appropriate account of the likely efficacy and costs of such purchases as well as the extent of progress toward its economic objectives.

5. To support continued progress toward maximum employment and price stability, the Committee expects that a highly accommodative stance of monetary policy will remain appropriate for a considerable time after the asset purchase program ends and the economic recovery strengthens. In particular, the Committee decided to keep the target range for the federal funds rate at 0 to ¼ percent and currently anticipates that this exceptionally low range for the federal funds rate will be appropriate at least as long as the unemployment rate remains above 6½ percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations

continue to be well anchored. In determining how long to maintain a highly accommodative stance of monetary policy, the Committee will also consider other information, including additional measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments. When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent.

FOMC STATEMENT—APRIL-MAY 2013 ALTERNATIVE A

1. Information received since the Federal Open Market Committee met in ~~January~~ **March** suggests ~~a return to moderate~~ **that** economic ~~growth following a pause late last year~~ **activity has been expanding at a moderate pace, on balance, in recent months**. **However, the pace of improvement in** labor market conditions ~~have shown signs of improvement in recent months but~~ **appears to have slowed, and** the unemployment rate remains elevated. Household spending and business fixed investment advanced, and the housing sector has strengthened further, but fiscal policy ~~has become somewhat more restrictive~~ **is restraining economic growth**. Inflation has been running ~~somewhat~~ below the Committee's longer-run objective, apart from temporary variations that largely reflect fluctuations in energy prices. Longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee ~~expects~~ **judges** that, ~~with appropriate~~ **without further** policy accommodation, economic growth ~~will proceed at a moderate pace and the unemployment rate will gradually decline toward levels the Committee judges consistent with its dual mandate~~ **might not be strong enough to generate a sustained improvement in labor market conditions and** ~~The Committee also anticipates~~ that inflation over the medium term likely ~~will~~ **would continue to** run below its 2 percent objective. **Moreover,** the Committee continues to see downside risks to the economic outlook.

3. To support a stronger economic recovery and to help ensure that inflation, over time, is at the rate most consistent with its dual mandate, the Committee ~~decided to continue purchasing additional~~ **will increase the pace at which it purchases** agency mortgage-backed securities ~~at a pace of $40~~ **to [$45]** billion per month and longer-term Treasury securities ~~at a pace of $45~~ **to [$55]** billion per month. 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. Taken together, these actions **will increase the Committee's holdings of longer-term securities more quickly and** should ~~maintain~~ **put additional** downward pressure on longer-term interest rates, support mortgage markets, and help to make broader financial conditions more accommodative.

4. The Committee will closely monitor incoming information on economic and financial developments in coming months. The Committee will continue its purchases of Treasury and agency mortgage-backed securities, and employ its other policy tools as appropriate, until the outlook for the labor market has improved substantially in a context of price stability. In determining the size, pace, and composition of its asset purchases, the Committee will continue to take appropriate account of the likely efficacy and costs of such purchases as well as the extent of progress toward its economic objectives.

5. **Moreover,** to support ~~continued~~ **faster** progress toward maximum employment and price stability, the Committee ~~expects that~~ **intends to maintain** a highly accommodative stance of monetary policy ~~will remain appropriate~~ for a considerable time after the asset purchase program ends and the economic recovery strengthens. In particular, the Committee decided to keep the target range for the federal funds rate at 0 to ¼ percent and ~~currently anticipates that~~ **now intends to retain** this exceptionally low range for the federal funds rate ~~will be appropriate~~ at least as long as the unemployment rate remains above ~~6½~~ **5½** percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored. In determining how long to maintain a highly accommodative stance of monetary policy, the Committee will also consider other information, including additional measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments. When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent.

FOMC STATEMENT—APRIL-MAY 2013 ALTERNATIVE B

1. Information received since the Federal Open Market Committee met in ~~January~~ **March** suggests ~~a return to moderate~~ **that** economic ~~growth following a pause late last year~~ **activity has been expanding at a moderate pace**. Labor market conditions have shown ~~signs of~~ **some** improvement in recent months, **on balance,** but the unemployment rate remains elevated. Household spending and business fixed investment advanced, and the housing sector has strengthened further, but fiscal policy ~~has become somewhat more restrictive~~ **is restraining economic growth**. Inflation has been running somewhat below the Committee's longer-run objective, apart from temporary variations that largely reflect fluctuations in energy prices. Longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic growth will proceed at a moderate pace and the unemployment rate will gradually decline toward levels the Committee judges consistent with its dual mandate. The Committee continues to see downside risks to the economic outlook. The Committee also anticipates that inflation over the medium term likely will run at or below its 2 percent objective.

3. To support a stronger economic recovery and to help ensure that inflation, over time, is at the rate most consistent with its dual mandate, the Committee decided to continue purchasing additional agency mortgage-backed securities at a pace of $40 billion per month and longer-term Treasury securities at a pace of $45 billion per month. 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. Taken together, these actions should maintain downward pressure on longer-term interest rates, support mortgage markets, and help to make broader financial conditions more accommodative.

4. The Committee will closely monitor incoming information on economic and financial developments in coming months. The Committee will continue its purchases of Treasury and agency mortgage-backed securities, and employ its other policy tools as appropriate, until the outlook for the labor market has improved substantially in a context of price stability. In determining the size, pace, and composition of its asset purchases, the Committee will continue to take appropriate account of the likely efficacy and costs of such purchases as well as the extent of progress toward its economic objectives.

5. To support continued progress toward maximum employment and price stability, the Committee expects that a highly accommodative stance of monetary policy will remain appropriate for a considerable time after the asset purchase program ends and the economic recovery strengthens. In particular, the Committee decided to keep the target range for the federal funds rate at 0 to ¼ percent and currently anticipates that this exceptionally low range for the federal funds rate will be appropriate at least as

long as the unemployment rate remains above 6½ percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored. In determining how long to maintain a highly accommodative stance of monetary policy, the Committee will also consider other information, including additional measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments. When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent.

FOMC STATEMENT—APRIL-MAY 2013 ALTERNATIVE C

1. Information received since the Federal Open Market Committee met in ~~January~~ **March** ~~suggests~~ **confirms** a return to moderate economic growth following a pause late last year. ~~Labor market conditions have shown signs of improvement in recent months but the unemployment rate remains elevated.~~ **Although the unemployment rate remains elevated, it has declined further, and other indicators of labor market conditions have shown additional improvement in recent months.** Household spending and business fixed investment advanced, and the housing sector has strengthened further, but fiscal policy ~~has become~~ **is** somewhat more restrictive. Inflation has been running somewhat below the Committee's longer-run objective, apart from temporary variations that largely reflect fluctuations in energy prices. Longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic growth will proceed at a moderate pace **in coming quarters and then pick up,** and the unemployment rate will ~~gradually~~ **continue to** decline toward levels the Committee judges consistent with its dual mandate. ~~The Committee continues to see downside risks to the economic outlook~~. The Committee also anticipates that inflation over the medium term likely will run ~~at or below~~ **close to** its 2 percent objective. **The Committee sees the risks to both economic growth and inflation as roughly balanced.**

3. ~~To support a stronger economic recovery and to help ensure that inflation, over time, is at the rate most consistent with its dual mandate,~~ **Based on the improvement in its outlook for the labor market since last September, the Committee decided to expand its asset holdings at a slower pace. In particular,** the Committee ~~decided to continue purchasing~~ **will purchase** additional agency mortgage-backed securities at a pace of ~~$40~~ **[$30]** billion per month and longer-term Treasury securities at a pace of ~~$45~~ **[$30]** billion per month. 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. Taken together, these actions **will increase the Committee's holdings of longer-term securities by $60 billion per month and** should ~~maintain~~ **sustain** downward pressure on longer-term interest rates, support mortgage markets, and help to ~~make~~ **keep** broader financial conditions more accommodative.

4. The Committee will closely monitor incoming information on economic and financial developments in coming months. The Committee will continue its purchases of Treasury and agency mortgage-backed securities, and employ its other policy tools as appropriate, until the outlook for the labor market has improved substantially in a context of price stability. In determining the size, pace, and composition of its asset purchases, the Committee will continue to take appropriate account of the likely efficacy and costs of such purchases as well as the extent of progress toward its economic objectives.

5. To support continued progress toward maximum employment and price stability, the Committee expects that a highly accommodative stance of monetary policy will remain appropriate for a considerable time after the asset purchase program ends and the economic recovery strengthens. In particular, the Committee decided to keep the target range for the federal funds rate at 0 to ¼ percent and currently anticipates that this exceptionally low range for the federal funds rate will be appropriate at least as long as the unemployment rate remains above 6½ percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored. In determining how long to maintain a highly accommodative stance of monetary policy, the Committee will also consider other information, including additional measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments. When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent.

THE CASE FOR ALTERNATIVE B

The Committee may see the information received during the intermeeting period as pointing, on balance, to essentially the same medium-run paths for economic activity and unemployment that it expected at the time of the March meeting. The information received during the intermeeting period has been mixed. The most recent readings on household spending and employment have been disappointing while other data indicate further improvement in the housing sector and aggregate economic activity is estimated to have increased at a solid pace during the first quarter. Moreover, broader trends in the data over the past few months show moderate gains in payroll employment and a gradual decline in the unemployment rate. Looking ahead, policymakers may be concerned that the effects of sequestration are likely to reduce economic growth in coming quarters, but see little effect on the medium-term outlook, particularly in light of more favorable financial conditions. In short, they may not yet see substantial improvement in the outlook for the labor market. In addition, they may anticipate that, with the U.S. economy still operating below potential, and with energy and commodity prices generally having declined from their earlier peaks, inflation is likely to remain somewhat below levels judged most consistent with the dual mandate, aside from short-run variations that reflect fluctuations in energy prices. Furthermore, based on current information regarding the likely efficacy and costs of asset purchases, policymakers may conclude that the potential benefits of continuing to purchase longer-term securities at the current pace outweigh the costs. If so, they might wish to continue expanding the Federal Reserve’s holdings of longer-term securities at the same pace as in recent months, and choose to make an announcement along the lines of Alternative B.

Some participants might see the recent data as disappointing, and as increasing the likelihood that it will become appropriate to adopt a still-more accommodative policy stance to generate a substantial improvement in labor market conditions and raise inflation toward 2 percent in coming years. They may judge that the likely benefits of a larger—and longer-lasting—flow of asset purchases that results in a considerable further expansion of the Federal Reserve’s securities holdings would outweigh the likely costs. They also may judge that it would be appropriate to lower the unemployment rate threshold in the Committee’s forward guidance as another way to make policy more accommodative. Nevertheless, in view of the inherent noisiness of monthly data, policymakers may decide to maintain the stance of policy embodied in Alternative B until more data are in hand.

Some other participants may judge that the economic recovery has become self-sustaining despite temporary restraining factors, and that moving toward a less accommodative policy stance would likely be appropriate to avoid the risks of an undesirable increase in inflation over the medium run. However, with the unemployment rate still well above participants' estimates of its long-run normal level, recent gains in payrolls only moderate, and inflation apparently quite subdued, they may not see a need to slow the pace of purchases immediately. Some participants might judge that continuing the current pace of asset purchases is likely to provide some additional accommodation, but also see the size of the balance sheet as approaching the level beyond which the potential costs of further expansion would outweigh potential benefits, and thus want to slow or end purchases soon. But they may be reluctant to slow purchases without clear evidence of sustained improvement in labor market conditions and so prefer to continue the current rate of purchases for now in the expectation that the economic data will improve in coming months.

A policy decision along the lines of Alternative B would be largely in line with the expectations of market participants and so would probably have little impact on market participants' expectations about future asset purchases and the target federal funds rate or on market prices. According to the Desk's latest survey, primary dealers do not see major changes in the statement as likely at this meeting, though they anticipate some recognition of the disappointing economic data. In particular, the median dealer expects the Committee to continue purchasing agency-backed MBS at a pace of $40 billion per month and longer-term Treasury securities at a pace of $45 billion per month. The median dealer also expects purchases to continue at their current pace through the end of this year, followed by some tapering during the first quarter of next year, raising the total amount of longer-term securities held in the SOMA by about $1.3 trillion relative to their level at the end of 2012. In addition, the survey indicates that the median dealer continues to anticipate that the Committee will maintain its current target for the federal funds rate until the third quarter of 2015.

THE CASE FOR ALTERNATIVE A

Some participants may believe that without a shift to a still more-accommodative policy stance, economic growth will not be adequate to return the unemployment rate to its mandate-consistent level within the next few years. In particular, they may expect that economic activity is unlikely to expand at an above-potential rate in coming quarters, particularly in light of the substantial near-term fiscal drag now expected. Participants also may judge that inflation has not only been running persistently below target but also that it has being trending lower since last fall and is likely to continue edging down. Moreover, they may read current indicators of the health of labor markets, including the decline in the labor force participation rate, the persistence of a high level of long-duration unemployment, and the still-elevated unemployment rate as showing only modest improvement in labor market conditions. With the inflation outlook subdued and progress in restoring maximum employment unsatisfactory, some policymakers may conclude that a balanced approach to achieving both sides of the dual mandate requires additional monetary stimulus.

In addition to an unsatisfactory modal outlook, policymakers may also judge that downside risks to that outlook—whether from U.S. fiscal issues or financial and economic conditions abroad—remain sizable. Moreover, continued uncertainty about fiscal policy could restrain household spending and business investment over the rest of this year more significantly than appears to have been the case thus far. In addition, with the recent reduction in oil prices likely to reduce headline inflation further in the near term, and against a backdrop of still-substantial resource slack and contained wage costs, policymakers may see increasing downside risks to the outlook for inflation; they may also see little risk that inflation or inflation expectations will move up. As a result, with the federal funds rate at its effective lower bound, some participants may want to add more accommodation now in order to put the economy on a stronger footing in the event that greater headwinds materialize in the near or medium term.

If policymakers wished to provide additional accommodation, relative to Alternative B, they might prefer Alternative A, under which the pace of purchases is stepped up and the threshold for the unemployment rate in the forward guidance is lowered to 5½ percent. Some participants may judge that increasing the Federal Reserve’s holdings of longer-term securities more quickly would result in market participants’ raising their estimates of the total amount the Federal Reserve will buy and therefore lead to a reduction in longer-term interest rates. That reduction would provide additional support to interest-sensitive sectors, and could, in particular, help strengthen the ongoing recovery in the housing sector. They may expect that more robust growth in the housing sector would increase consumer confidence and support consumer spending, given the importance of housing wealth to consumers’ balance sheets. These participants may view the benefits of greater purchases as likely to outweigh the costs. In addition, some participants may judge that lowering the threshold for the unemployment rate in the Committee’s forward guidance for the federal funds rate from 6½ to 5½ percent—thereby indicating a determination to keep short-term interest rates near zero longer even longer than investors currently anticipate—would be an effective way of reinforcing the greater accommodation today. Consequently, they may prefer the forward guidance in Alternative A, which modifies the forward guidance not only by reducing the unemployment threshold but also by saying that the Committee “intends to maintain” (rather than “currently anticipates”) a highly accommodative policy stance to support “faster progress” toward maximum employment and price stability.

An announcement like Alternative A, which increases purchases of agency mortgage-backed securities and longer-term Treasury securities to a combined pace of $100 billion per month, would come as a considerable surprise to market participants. According to the Desk survey, no dealer’s modal forecast anticipates the announcement of such a program at the current meeting. Hence, in response to a statement like Alternative A, investors likely would increase their expectations for the total amount of securities that the Federal Reserve will acquire under its flow-based program. Moreover, dealers do not appear to expect any change in the threshold language; consequently, the 5½ percent unemployment threshold in Alternative A would signal a longer period of very low short-term interest rates than dealers currently expect. Therefore, longer-term interest rates likely would decline, inflation compensation and equity prices might rise, and the exchange value of the dollar probably would decline. If, however, investors read the statement of Alternative A as indicating that the FOMC has become more pessimistic about the outlook for economic growth and employment than market participants had been assuming, equity prices might not rise or could even decline. In addition, changing one of the numerical thresholds so soon after their adoption might create some confusion among investors about the extent to which the Committee feels bound by its forward guidance, potentially boosting the volatility of asset prices and the risk premiums built into market yields.

THE CASE FOR ALTERNATIVE C

Some participants might see the recent data as confirming moderate economic growth, even in the face of more restrictive fiscal policy, and conclude that the economic recovery is on a firm footing. Moreover, they may anticipate that economic growth will pick up over time as the near-term effects of the shift in fiscal policy wane. In support of that view, policymakers might point to the average of recent months' employment growth, the solid increase in consumer spending in the first quarter, and further signs of improvement in the housing market. Indeed, after smoothing through the month-to-month fluctuations in recent data, policymakers may see the economic recovery as having achieved a self-sustaining course that is likely to be associated with ongoing improvements in labor market conditions. In addition, they may judge that the level of potential output is lower than the staff estimates, that the risks to economic growth are roughly balanced, and that overall financial conditions in the United States are highly supportive of economic growth. As a result, they may no longer see it as appropriate to purchase securities at the current pace.

Some participants may view a reduction in the pace of purchases as an appropriate response to the improvement in the economic outlook since September. Alternatively, some policymakers may be skeptical that the downward pressure on longer-term interest rates from the current program of purchases of Treasury securities and agency MBS is substantial, or that it is having a significant effect on macroeconomic outcomes. And while inflation expectations have remained well anchored to date, some policymakers might nonetheless be concerned that the Federal Reserve's large and growing balance sheet tilts the risks toward higher expected inflation, perhaps because the size of the balance sheet could be seen by the public as making exit from policy accommodation difficult. Participants may also worry that further purchases by the Federal Reserve when longer-term interest rates are already quite low could lead to excessive risk-taking in financial markets. Such behavior might undermine financial stability over time, thereby putting the achievement of the dual mandate at risk, particularly if supervisory tools are not sufficiently effective to avoid such an outcome.

For these reasons, policymakers might consider it appropriate to begin scaling back purchases at this meeting and to point to an improvement in the outlook for labor market conditions since the Committee began the flow-based asset purchase program as a way of communicating to the public that the program is probably nearing its end.[1] Some

[1] For an analysis of several issues to consider when contemplating an adjustment of the pace of asset purchases in response to changes in the economic outlook or in the assessment of the efficacy and costs of purchases, see the memo titled "Changing the Pace of Asset Purchases" (by S. Carpenter, W. English, S. Meyer, W. Nelson, D. Reifschneider, and R. Tetlow of the Federal Reserve Board, and J. Egelhof, S. Friedman, L. Logan, and S. Potter of the Federal Reserve Bank of New York) that was sent to the Committee on April 22, 2013.

participants may favor bringing the program to an end quickly, but they might judge that tapering purchases would be better than an immediate cessation of the program, on the grounds that an abrupt end could trigger significant though short-lived disruptions in financial markets. If so, they might prefer a statement like Alternative C.

The Desk's survey indicates that the median dealer expects purchases of longer-term securities to continue at their present pace until the end of this year, then at a slower pace during the early part of next year. Accordingly, a statement like Alternative C likely would come as a considerable surprise to market participants. The slower pace of purchases likely would be seen as signaling smaller total asset purchases than investors had expected, and so probably cause longer-term yields to rise. However, this upward movement might be attenuated to some degree by the indication, in paragraph 4, that the Committee will continue to take account of the extent of progress toward its economic objectives as it determines the size, pace, and composition of its asset purchases. The extent to which longer-term interest rates would increase would also depend on how the policy decision affects investors' outlook for the economy and, in light of the quantitative thresholds, for the federal funds rate. That said, on balance longer-term interest rates could rise substantially, equity prices likely would fall, and the dollar would probably appreciate.

DIRECTIVE

The directive that was issued in March appears on the next page, followed by drafts for an April-May directive that correspond to each of the policy alternatives. The directive for Alternative B is unchanged; the drafts for Alternatives A and C suggest modest updates to make the language of the directive consistent with the corresponding post-meeting statement.

The draft directive for Alternative B instructs the Desk to continue purchasing additional agency mortgage-backed securities at a pace of about $40 billion per month and to continue purchasing longer-term Treasury securities at a pace of about $45 billion per month. The draft directive for Alternative A directs the Desk to purchase additional agency mortgage-backed securities at a pace of about $45 billion per month, and to purchase longer-term Treasury securities at a pace of about $55 billion per month, beginning in May. The draft directive for Alternative C instructs the Desk to purchase agency mortgage-backed securities at a pace of about $30 billion per month, and to purchase longer-term Treasury securities at a pace of about $30 billion per month, beginning in May. All three of the draft directives direct the Desk to maintain the current 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.

March Directive

Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Desk is directed to continue purchasing longer-term Treasury securities at a pace of about $45 billion per month and to continue purchasing agency mortgage-backed securities at a pace of about $40 billion per month. 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. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

Alternatives

Directive for April-May 2013 Alternative A

Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. **Beginning with the month of May,** the Desk is directed to ~~continue purchasing~~ **purchase** longer-term Treasury securities at a pace of about ~~$45~~ **$55** billion per month and ~~continue purchasing~~ **purchase** agency mortgage-backed securities at a pace of about ~~$40~~ **$45** billion per month. 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. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

Directive for April-May 2013 Alternative B

Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Desk is directed to continue purchasing longer-term Treasury securities at a pace of about $45 billion per month and to continue purchasing agency mortgage-backed securities at a pace of about $40 billion per month. 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. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

Directive for April-May 2013 Alternative C

Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. **Beginning with the month of May,** the Desk is directed to ~~continue purchasing~~ **purchase** longer-term Treasury securities at a pace of about ~~$45~~ **$30** billion per month and to ~~continue purchasing~~ **purchase** agency mortgage-backed securities at a pace of about ~~$40~~ **$30** billion per month. 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. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

Projections

DEBT, BANK CREDIT, AND MONEY

Domestic nonfinancial sector debt is projected to have increased at an annual rate of 5¼ percent in the first quarter of 2013, driven by a significant expansion in federal government debt and a moderate rise in private nonfinancial debt. We expect growth in domestic nonfinancial debt to average 3½ percent over the remainder of the forecast period, slower than its pace in the first quarter, as federal debt advances less rapidly and private debt decelerates a bit. Nonfinancial business debt is expected to increase at a moderate pace over the forecast period, reflecting favorable financing conditions and increasing capital expenditures; growth in this debt aggregate slows somewhat over the forecast period in response to the projected rise in interest rates. After contracting for the past five years, the level of home mortgage debt is anticipated to bottom out in 2013 and edge up during the subsequent two years. Rising house prices and declining foreclosures should help support the modest projected expansion in home mortgage debt, although continued tight credit conditions for borrowers with subpar credit scores and the overhang of negative home equity are anticipated to damp the increase. Meanwhile, we project consumer credit to accelerate over the forecast period, from a growth rate of 6¾ percent in the first quarter of this year to about 7¾ percent in 2015, driven by continued strong demand for student loans and a pickup in spending on consumer durables.

Commercial bank credit is anticipated to increase at a moderate pace over the forecast period, slightly faster than its 3¾ percent rate of expansion in 2012. The rapid growth in commercial and industrial loans in recent quarters is expected to moderate over the next few years to a level more in line with the rise in nominal GDP. In contrast, real estate and consumer loans are projected to rise at a gradually increasing pace. In particular, the staff anticipates that commercial real estate loans, after decreasing every year since 2009, will increase modestly this year and then accelerate a bit through the end of the forecast period as high vacancy rates on certain property types edge lower and the credit quality of existing loans in this sector improves somewhat. Similarly, the expansions in both residential real estate and consumer loans on banks' books, which are currently weak, are expected to pick up as standards and terms on such loans gradually ease for some borrowers and an improvement in household balance sheets boosts demand. Meanwhile, the growth rate in banks' securities holdings is expected to be a bit below that posted in 2012, because deposits are projected to ebb and demand for bank loans to strengthen.

On balance, M2 is projected to increase at a pace below that of nominal income over the forecast period. For the remainder of 2013 and through 2014, we expect growth of M2 and its largest component, liquid deposits, to moderate relative to the rapid expansion observed over recent years, with a gradual improvement in global financial conditions encouraging investors to shift their portfolios away from the safe and liquid assets in M2 toward riskier financial assets. M2 is expected to contract in the second half of 2015 in response to the projected increase in short-term market interest rates and the accompanying rise in the opportunity cost of holding money.

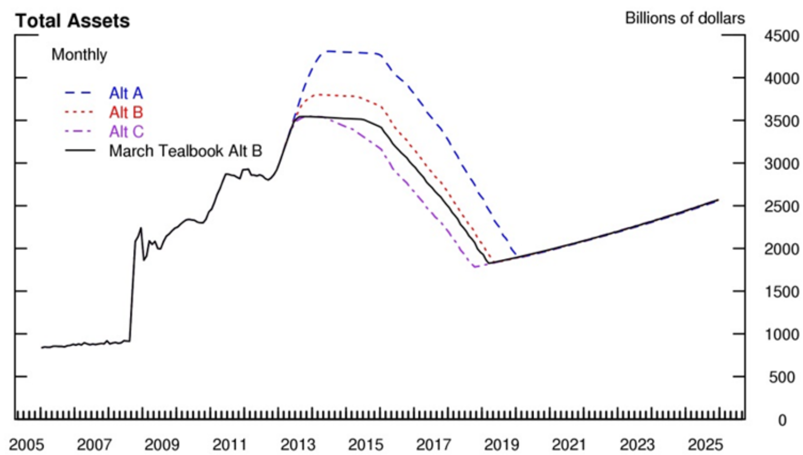
Growth Rates for M2	
(Percent, seasonally adjusted annual rate)	
Monthly Growth Rates	Tealbook Forecast*
Jan-13	4.3
Feb-13	-3.1
Mar-13	4.0
Apr-13	6.5
May-13	1.9
Jun-13	1.8
Jul-13	1.8
Aug-13	2.0
Sep-13	2.2
Oct-13	2.8
Nov-13	2.6
Dec-13	2.8
Quarterly Growth Rates	
2013 Q1	4.7
2013 Q2	3.3
2013 Q3	1.9
2013 Q4	2.6
2014 Q1	2.4
2014 Q2	2.6
2014 Q3	2.8
2014 Q4	2.9
2015 Q1	3.0
2015 Q2	2.9
2015 Q3	-0.3
2015 Q4	-1.9
Annual Growth Rates	
2012	7.5
2013	3.1
2014	2.7
2015	0.9

*This forecast is consistent with nominal GDP and interest rates in the Tealbook forecast. Actual data through April 15, 2013; projections thereafter.

Projections

BALANCE SHEET AND MONETARY BASE

The staff has prepared three scenarios for the Federal Reserve's balance sheet that correspond to interpretations of Alternatives A, B, and C. All three alternatives include additional asset purchases, though the pace and amount of purchases differ.[1] Alternative B continues purchases at the current pace through June; purchases are then tapered to zero by year-end. Alternative A increases the pace of purchases beginning in May and continues the purchases somewhat longer, while Alternative C decreases the pace and ends purchases earlier. All three alternatives maintain the 0 to ¼ percent target range for the federal funds rate and retain threshold-based forward guidance for the funds rate based on the unemployment rate and the outlook for inflation.



Projections under each scenario are based on assumptions about the trajectory of various components of the balance sheet.[2] Details of these assumptions, as well as

[1] The Committee is assumed to continue rolling over maturing Treasury securities at auction and reinvesting principal payments from agency MBS and agency debt securities into agency MBS until six months before the first increase in the federal funds rate. The effect of assuming that maturing Treasury securities are rolled over at auction is very modest; as a result of the maturity extension program, there are currently less than $5 billion of Treasury securities in the SOMA portfolio that mature before January 2016.

[2] The projections assume that the Committee follows an exit strategy consistent with the principles articulated in the minutes of the June 2011 FOMC meeting. Other strategies, such as not selling MBS or selling short-dated Treasury securities, could be considered. See the memo titled "Possible Revisions to the Committee's Exit Strategy Principles" (by J. Clouse, W. English, J. Faust, E. Klee, L. Logan, and S. Meyer of the Federal Reserve Board and J. Remache and S. Potter of the Federal Reserve Bank of New York) that was sent to the Committee on April 22, 2013, for more on this issue. The implications for the evolution of the balance sheet associated with possible revisions to the exit strategy principles are found in the March 5, 2013, memo by K. Femia, J. Ihrig, J. Kandrac, E. Klee, C. Miller, and J. Remache, titled "Exit Strategy Considerations."

Projections

projections for each major component of the balance sheet, can be found in the Appendix that follows this section.[3]

For the balance sheet scenario that corresponds to Alternative B, the Committee is assumed to continue expanding its holdings of agency MBS by $40 billion per month and of longer-term Treasury securities by $45 billion per month through June 2013. Unlike in March, when purchases were assumed to end at mid-year, the staff's baseline forecast—and our assumption for Alternative B—now assumes that purchases continue to year-end, but at a steadily decreasing pace. These purchases total $750 billion in 2013. This scenario might be viewed as consistent with the description of asset purchases in the statement language of Alternative B.[4] Overall, under this scenario, SOMA securities holdings will be about $3.5 trillion at the end of December 2013.

In the Alternative B scenario, we assume that the first increase in the target federal funds rate is in October 2015, as in the staff forecast in Tealbook Book A.[5] Given the exit strategy principles adopted by the Committee in June 2011, the date of liftoff is a key determinant of the trajectory of the balance sheet. In April 2015, six months before the first increase in the target federal funds rate, all reinvestment is assumed to cease, and the SOMA portfolio begins to contract. In April 2016, six months after the initial increase in the target federal funds rate, the Committee begins to sell its holdings of agency securities at a pace that reduces the amount of these securities in the portfolio to zero over five years, that is, by March 2021. Through these redemptions and sales, the

[3] The entire expected path of the portfolio has implications for the evolution of interest rates, the economy, and Federal Reserve income. If market participants have different expectations for the size, pace, and composition of purchases and for the exit strategy than assumed in these scenarios, the effects on interest rates, economic activity, and Federal Reserve income will differ from those presented here.

[4] The statement indicates that the Committee intends to continue its asset purchases until the outlook for the labor market has improved substantially in a context of price stability. It also notes that the Committee will continue to "take appropriate account of the likely efficacy and costs of such purchases as well as the extent of progress toward its economic objectives." If the economy evolves as the staff projects, by late 2013 there will be accumulating evidence of a pickup in economic growth and an outlook for substantial improvement in the unemployment rate, which is projected to decline from nearly 7½ percent in late 2013 to a bit below 7¼ percent in mid-2014 and to just under 7 percent in late 2014. Alternatively, by late 2013, the Committee could end the purchase program based on its assessment of the likely efficacy and costs of additional asset purchases.

[5] At the time of liftoff, the unemployment rate is projected to be about 6¼ percent, and core PCE inflation is expected to be 1¾ percent. This liftoff date for the federal funds rate is in the same quarter as that assumed in the balance sheet projections for Alternative B in the March Tealbook.

size of the portfolio is normalized by May 2019.[6,7] The balance sheet then begins to expand, with increases in SOMA holdings essentially matching the growth of currency in circulation and Federal Reserve Bank capital. Total assets are $2.6 trillion at the end of 2025.

The additional asset purchases increase the level of SOMA holdings and reserve balances from their already elevated levels. Sales of agency MBS after the first increase in the federal funds rate are projected to result in realized capital losses.[8] These capital losses, in conjunction with the rise in interest expense on reserve balances, substantially reduce Federal Reserve net income; however, Federal Reserve remittances to the Treasury are projected to remain positive but low, and no deferred asset is recorded.

In the scenario for Alternative A, the Committee is assumed to step up the pace of purchases of longer-term Treasury securities to $55 billion per month and of additional agency MBS to $45 billion per month beginning with the month of May through the third quarter of this year. At the beginning of the fourth quarter, the Committee is assumed to begin to reduce the pace, and in early 2014 it ends the purchase program. These purchases total about $1.25 trillion in 2013 and early 2014. This scenario might be viewed as consistent with the descriptions of asset purchases in the statement language of Alternative A.[9] In this scenario, SOMA securities holdings increase to a peak of slightly more than $4 trillion. In the Alternative A scenario, the first increase in the target federal funds rate occurs in mid-2016, consistent with the reduction in the threshold for the

Projections

[6] Temporary reserve draining tools (reverse repurchase agreements and term deposits) are not modeled in any of the scenarios presented. Use of these tools would result in a shift in the composition of Federal Reserve liabilities—a decline in reserve balances and a corresponding increase in reverse repurchase agreements or term deposits—but would not produce an overall change in the size of the balance sheet.

[7] The size of the balance sheet is assumed to be normalized when the securities portfolio reverts to its longer-run trend level, determined largely by currency in circulation plus Federal Reserve capital and a projected steady-state level of reserve balances. The projected timing of the normalization of the size of the balance sheet depends importantly on the level of reserve balances that is assumed to be necessary to conduct monetary policy; currently, we assume that level of reserve balances to be $25 billion. A higher steady-state level for reserve balances would, all else equal, lead to an earlier normalization of the size of the balance sheet.

[8] Under Reserve Bank accounting, securities held in the domestic SOMA portfolio are recorded on an amortized cost basis. As a result, realized losses and gains on securities sold affect the Federal Reserve's reported net income; unrealized losses and gains are not reflected in net income.

[9] Under the staff's baseline forecast, the unemployment rate will have fallen to 7¼ percent early in 2014, and real GDP will be expanding at an annual rate of about 2¾ percent. Moreover, the unemployment rate is projected to decline to just under 7 percent by late 2014 and to 6¼ by late 2015. Alternative A provides more policy accommodation than assumed in the staff forecast, suggesting an even stronger outlook.

unemployment rate to 5½ percent and the added monetary stimulus from the increased asset purchases in this alternative. In late 2015, all reinvestments are projected to cease and the SOMA portfolio begins to contract. Six months after the liftoff of the federal funds rate, sales of agency securities begin; they continue for five years. The size of the portfolio is normalized a little more than three years after the start of sales, slightly longer than the timeframe anticipated in the June 2011 exit strategy principles.[10]

The additional purchases of securities in this scenario substantially boost the level of the SOMA portfolio and reserve balances. As the federal funds rate rises after liftoff, the interest expense on reserve balances increases quickly. The interest expense and losses realized on the sales of agency MBS result in an operating loss, which causes remittances to the Treasury to cease and a small deferred asset to be recorded on the balance sheet for several years, peaking at about $7 billion.

For the scenario that corresponds to Alternative C, the Committee immediately announces a decrease in the pace of purchases of both longer-term Treasury securities and additional agency MBS to $30 billion per month.[11] The Committee is assumed to further reduce the pace in subsequent meetings and to cease purchases by the end of September. Purchases total about $500 billion in 2013.[12] In this scenario, the federal

[10] In Alternative A, MBS are sold over a five-year period in order to be consistent with the timing assumed in Alternative B. If sales were assumed to be completed over about four and a half years, the portfolio would normalize in three years, within the timeframe noted in the 2011 exit strategy principles. However, the sales pace implied by this strategy could be near the maximum pace that would be sustainable without disrupting market functioning.

[11] The staff assumes that the main effect of asset purchases on financial conditions comes from the expected size and composition of the Federal Reserve's portfolio over time. As a result, the macroeconomic effects of a change in the pace of purchases will depend importantly on how the change influences investors' expectations of the evolution of the overall size and composition of the Federal Reserve's portfolio. For reference, see the memo titled "Changing the Pace of Asset Purchases" (by S. Carpenter, W. English, S. Meyer, W. Nelson, D. Reifschneider, and R. Tetlow of the Federal Reserve Board, and J. Egelhof, S. Friedman, L. Logan, and S. Potter of the Federal Reserve Bank of New York) that was sent to the Committee on April 22, 2013.

[12] The scaling back of the asset purchase program may be seen as consistent with policymakers seeing the economic recovery as having reached a self-sustaining course based on the improvement in its outlook for the labor market since last September when the Committee first tied its decision about additional asset purchases to the outlook for labor market conditions. Alternatively, by September 2013, the Committee could end the purchase program based on its assessment that the prospective costs of further purchases are significant.

funds rate is assumed to lift off about one year earlier than in Alternative B.[13] Corresponding to this earlier increase in the federal funds rate, reinvestment of principal from maturing or prepaying securities ends and redemptions begin in 2014, and the portfolio begins to contract. Sales of agency securities commence six months after liftoff and last for five years. SOMA securities holdings in this scenario peak at $3.3 trillion, and the size of the balance sheet is normalized about one-half year earlier than under Alternative B.

There are differences across the scenarios' peak amount of reserve balances and the level of reserve balances at liftoff, which are directly related to the magnitude of assumed asset purchases.[14] Reserve balances peak at about $2.9 trillion, $2.3 trillion, and $2.1 trillion under Alternatives A, B, and C, respectively. When the federal funds rate lifts off from its lower bound, reserve balances are $2.5 trillion, $2.2 trillion, and $2 trillion under Alternatives A, B, and C, respectively.

In the scenario corresponding to Alternative B, the monetary base increases significantly from 2012 to 2013 because of the purchase program and the accompanying increase in reserve balances. Once exit begins, the monetary base shrinks rapidly through mid-2019, primarily reflecting a decline in reserve balances as securities are redeemed and sold. Starting in late 2019, after reserve balances are assumed to have stabilized at $25 billion, the monetary base begins to expand, in line with the growth of currency in circulation. Under Alternative A, the monetary base increases even more quickly from 2012 to 2014 than under Alternative B as the level of reserve balances climbs in concert with the expansion of the Federal Reserve's balance sheet. The monetary base then contracts during the exit period until the size of the portfolio is normalized. Under Alternative C, the monetary base increases from 2012 to 2013 because of the purchase program and then contracts, on net, until about one quarter after the size of the portfolio is normalized.

[13] The scenario assumes that the Committee raises the federal funds rate before either the threshold for the unemployment rate or the threshold for projected inflation is crossed, perhaps because policymakers are concerned that longer-term inflation expectations would become unanchored if policy is not tightened or because the Committee concludes that continuing to keep the federal funds rate target at the zero lower bound would undermine future financial stability.

[14] The level of reserve balances is also contingent on the evolution of other balance sheet items.

Growth Rates for the Monetary Base

Date	Alternative B	Alternative A	Alternative C	March Alternative B
Percent, annual rate				
Monthly				
Dec-12	13.7	13.7	13.7	13.7
Jan-13	21.5	21.5	21.5	21.5
Feb-13	37.1	37.1	37.1	37.3
Mar-13	42.6	42.6	42.6	56.1
Apr-13	29.2	29.4	29.0	30.3
May-13	48.7	50.9	45.3	36.2
Jun-13	51.7	56.0	44.2	51.5
Jul-13	23.1	30.7	14.0	17.3
Aug-13	33.8	45.3	21.1	17.5
Quarterly				
2012 Q4	-0.5	-0.5	-0.5	-0.5
2013 Q1	25.1	25.1	25.1	26.7
2013 Q2	41.3	42.4	39.5	41.8
2013 Q3	35.7	44.0	25.5	25.8
2013 Q4	15.3	31.5	3.6	-0.1
2014 Q1	4.4	20.8	-2.2	-1.7
2014 Q2	0.7	12.6	-1.2	0.6
2014 Q3	2.4	4.7	-1.5	0.8
Annual - Q4 to Q4				
2012	0.3	0.3	0.3	0.3
2013	32.6	40.8	25.3	25.4
2014	1.3	9.2	-1.2	-0.9
2015	-1.2	-0.8	-7.1	-2.0
2016	-13.0	-8.0	-16.1	-11.6
2017	-16.6	-14.6	-18.5	-16.7
2018	-24.0	-21.5	-24.6	-23.8
2019	-15.8	-27.8	4.0	-9.6
2020	4.5	-5.4	4.6	4.3
2021	4.6	4.4	4.7	4.5
2022	4.6	4.5	4.6	4.5
2023	4.5	4.4	4.5	4.5
2024	4.4	4.4	4.4	4.4
2025	4.4	4.4	4.4	4.4

Note: Not seasonally adjusted.

Projections

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Appendix

This appendix presents the assumptions underlying the projections provided in the section titled "Balance Sheet and Monetary Base," as well as projections for each major component of the balance sheet.

GENERAL ASSUMPTIONS

The balance sheet projections are constructed at a monthly frequency from April 2013 to December 2025. The few balance sheet items that are not discussed below are assumed to be constant over the projection period at the level observed on March 29, 2013. The projections for all major asset and liability categories under each scenario are summarized in the tables that follow the bullet points.

The Tealbook projections for the scenario corresponding to Alternative B assume that the target federal funds rate begins to increase in October 2015. This date of liftoff is consistent with the current staff economic forecast and the thresholds described in the March 2013 FOMC statement, and it is in the same quarter as assumed in the balance sheet projections for Alternative B in the March Tealbook. In the projections for the scenario corresponding to Alternative A, the first increase in the target federal funds rate occurs in mid-2016, consistent with the reduction in the threshold for the unemployment rate to 5½ percent and the added monetary stimulus from the increased asset purchases described in the proposed Alternative A statement language. The projections for the scenario corresponding to Alternative C assume the target federal funds rate lifts off about one year earlier than in Alternative B. In each case, the balance sheet projections assume no use of short-term draining tools to achieve the projected path for the target federal funds rate.[1]

Projections

[1] If term deposits or reverse repurchase agreements were used to drain reserves prior to raising the federal funds rate, the composition of liabilities would change: Increases in term deposits and reverse repurchase agreements would be matched by corresponding declines in reserve balances. Presumably, these draining tools would be wound down as the balance sheet returns to its steady state growth path, so that the projected paths for Treasury securities presented here remain valid.

ASSETS

Treasury Securities, Agency Mortgage-Backed Securities (MBS), and Agency Debt Securities

- The assumptions under Alternative B are:
  - The Committee is assumed to continue expanding its holdings of agency MBS by $40 billion per month and of longer-term Treasury securities by $45 billion per month through June 2013. After June 2013, purchases are assumed to continue, but at a steadily decreasing rate, concluding by the end of the year. The Treasury securities purchased are assumed to have an average duration of about nine years. The purchases in 2013 expand the SOMA portfolio's holdings of longer-term securities by about $750 billion.
  - The FOMC continues to reinvest the proceeds from principal payments on its agency securities holdings in agency MBS.
  - Starting in April 2015—six months prior to the assumed increase in the target federal funds rate—all securities are allowed to roll off the portfolio as they mature or prepay.
  - The Federal Reserve begins to sell agency MBS and agency debt securities in April 2016, six months after the assumed date of the first increase in the target federal funds rate. Holdings of agency securities are reduced over five years and reach zero by March 2021.
  - For agency MBS, the rate of prepayment is based on staff models using estimates of housing market factors from one of the Desk's analytical providers, long-run average prepayment speeds of MBS, and interest rate projections from the Tealbook.[2] The projected rate of prepayment is sensitive to these underlying assumptions.

- In the scenario corresponding to Alternative A, the Committee is assumed to increase the monthly pace of purchases to $55 billion of longer-term Treasury securities and $45 billion of additional agency MBS beginning with the month of May through September 2013. After September 2013, the pace of purchases slows, and purchases end in April 2014. The Treasury securities purchased are assumed to have an average duration of about nine years. These purchases expand the SOMA portfolio's holdings of longer-term securities by about $1.25 trillion in 2013 and early 2014. In addition, the Committee is assumed to maintain its existing policy of reinvesting principal payments from its holdings of agency debt and agency MBS in agency MBS. Starting in late 2015, principal payments from all securities are allowed to roll off the portfolio. Sales of agency securities begin six months after the liftoff of the federal funds rate and continue for five years.

[2] Projected prepayments of agency MBS reflect interest rate projections as of April 22, 2013.

- In the scenario corresponding to Alternative C, the Committee is assumed to decrease the monthly pace of purchases to $30 billion of longer-term Treasury securities and $30 billion of additional agency MBS beginning with the month of May 2013. After May, the pace of purchases slows further, and purchases end in September 2013. The Treasury securities purchased are assumed to have an average duration of about nine years. These purchases expand the SOMA portfolio's holdings of longer-term securities by about $500 billion in 2013. The FOMC continues to reinvest the proceeds from principal payments on its agency securities holdings in agency MBS until early 2014. Thereafter, all securities are allowed to roll off the portfolio as they mature or prepay. The Federal Reserve begins to sell agency MBS and agency debt securities six months after liftoff. Holdings of agency securities are reduced over five years and reach zero by 2020.
- Because current and expected interest rates in the near term are below the average coupon rate on outstanding Treasury securities, the market value at which the Federal Reserve purchases securities will generally exceed their face value, with a larger premium for longer-maturity securities. As a result, in Alternatives A, B, and C, premiums are boosted by roughly $35 billion, $17 billion, and $8 billion, respectively, by the time asset purchases end relative to a scenario without these Treasury securities purchases. The increase in premiums is reflected in higher total assets and in higher reserve balances.
- The current and near-term market values of new agency MBS purchases are assumed to be 4 percent above face value. As a result, for Alternatives A, B, and C, the $445 billion, $270 billion, and $134 billion of agency MBS purchases, respectively, will cause premiums on the Federal Reserve's balance sheet to rise by roughly $18 billion, $11 billion, and $5 billion, respectively, relative to a scenario without these MBS purchases. The increase in premiums is reflected in higher total assets and in higher reserve balances.
- The asset purchases put downward pressure on longer-term market interest rates, including primary and secondary mortgage rates.
- The level of central bank liquidity swaps is assumed to decline, as draws under the recent foreign central bank swap auctions mature, and is projected to return to zero by the end of 2014.
- In all three scenarios, once reserve balances drop to $25 billion, the Desk begins to purchase Treasury bills to maintain this level of reserve balances going forward. Purchases of bills continue until such securities comprise one-third of the Federal Reserve's total Treasury securities holdings—about the average share prior to the crisis. Once this share is reached, the Federal Reserve buys coupon securities in addition to bills to maintain an approximate composition of the portfolio of one-third bills and two-thirds coupon securities.
- The level of foreign currency denominated assets held in the SOMA portfolio is assumed to stay constant at $24 billion.

Liquidity Programs and Credit Facilities

- Credit through the Term Asset-Backed Securities Loan Facility (TALF) declines to zero by the end of 2015, reflecting loan maturities and prepayments.
- The assets held by TALF LLC decline from about $400 million currently to zero in 2015. Assets held by TALF LLC consist of investments of commitment fees collected by the LLC. On January 15, the Board of Governors approved the elimination of the U.S. Treasury's funding commitment and the repayment of the initial funding amount plus accrued interest. Additionally, the Board of Governors approved the disbursement of contingent interest payments from TALF LLC to Treasury and FRBNY that equal, approximately, the excess of the TALF LLC cash balance over the amount of outstanding TALF loans. The first payment occurred in February, and additional payments are expected to occur on a monthly basis. In this projection, the LLC is assumed not to purchase any asset-backed securities. (It would have to make such purchases if an asset-backed security were received by the Federal Reserve Bank of New York in connection with a decision of a borrower not to repay a TALF loan.)
- The assets held by Maiden Lane LLC decline to zero in 2016.

LIABILITIES AND CAPITAL

- Federal Reserve notes in circulation are assumed to grow at an average annual rate of 6 percent through 2015, in line with the staff forecast. Afterwards, Federal Reserve notes in circulation grow at the same rate as nominal GDP in the extended Tealbook projection.
- The level of reverse repurchase agreements (RRPs) is assumed to be around $100 billion, about the average level of RRPs associated with foreign official and international accounts observed over the past three years.
- Balances held in the U.S. Treasury's General Account (TGA) follow recent patterns until the assumed initial increase in the target federal funds rate in each alternative. At that point, the TGA drops back to its historical target level of $5 billion as it is assumed that the Treasury will implement a new cash management system and invest funds in excess of $5 billion. The TGA remains constant at $5 billion over the remainder of the forecast period.
- Federal Reserve capital grows 15 percent per year, in line with the average rate of the past ten years.[3]
- In general, increases in the level of Federal Reserve assets are matched by higher levels of reserve balances. All else equal, increases in the levels of liability items, such as

[3] The annual growth rate of capital affects the date of normalization of the size of the balance sheet, the size of the SOMA portfolio, and the level of annual remittances to the Treasury. Growth in Reserve Bank capital has been modest over the past two years; if Federal Reserve capital were assumed to grow at 10 percent per year, the normalization date would be roughly unchanged, the size of SOMA would be a bit smaller after normalization, and annual remittances would, on net, be modestly larger.

Federal Reserve notes in circulation or other liabilities, or increases in the level of Reserve Bank capital, drain reserve balances. When increases in these liability or capital items would otherwise cause reserve balances to fall below $25 billion, purchases of Treasury securities are assumed in order to maintain that level of reserve balances.

- In the event that a Federal Reserve Bank's earnings fall short of the amount necessary to cover operating costs, pay dividends, and equate surplus to capital paid-in, a deferred asset would be recorded. This deferred asset is reported on the liability side of the balance sheet as "Interest on Federal Reserve notes due to U.S. Treasury." This liability takes on a positive value when weekly cumulative earnings have not yet been distributed to the Treasury and takes on a negative value when earnings fall short of the expenses listed above. In Alternative A, a small deferred asset is recorded on the balance sheet for several years, peaking at about $7 billion.

TERM PREMIUM EFFECTS[4]

- Under Alternative A, the term premium effect on the yield of the ten-year Treasury note is negative 123 basis points in the current quarter. The effect wanes over time as the length of time the securities will be held by the Federal Reserve shortens and as securities subsequently roll off the portfolio or are sold until the size of the portfolio is normalized.[5]
- Under Alternative B, the contemporaneous term premium effect is negative 114 basis points. This estimate is between the term premium effect associated with $1.25 trillion of purchases in 2013 and 2014 and the term premium effect associated with $750 billion of purchases in 2013. By the fourth quarter of this year, as market participants come to realize that the purchases will end in December, the term premium effect converges to one associated with $750 billion of purchases in 2013. Over the remainder of the projection period, the term premium effect declines slowly toward zero, reflecting the actual and anticipated normalization of the portfolio.
- Under Alternative C, the term premium effect is negative 84 basis points. The effect is less negative than in Alternative B because there are fewer securities purchases in 2013 and the liftoff date is earlier so asset sales begin sooner than under Alternatives B and A.

Projections

[4] Staff estimates include all current and projected asset purchases and use the model outlined in the appendix of the memo titled "Possible MBS Large-Scale Asset Purchase Program" written by staff at the Federal Reserve Bank of New York and the Board of Governors and sent to the Committee on January 18, 2012. More details of the model can be found in "Term Structure Modeling with Supply Factors and the Federal Reserve's Large Scale Asset Purchase Programs" by C. Li and M. Wei, FEDS working paper #37, 2012.

[5] The staff projection of the term premium effect assumes that the Committee follows an exit strategy consistent with the exit principles articulated in the minutes of the June 2011 FOMC meeting. If market participants anticipate a different exit strategy, the staff estimate of the term premium effect may not be the same as those priced in market rates. For example, if market participants believe agency MBS will not be sold, then the term premium effect implicit in market rates will be more negative than the staff's estimate.

10-Year Treasury Term Premium Effect				
Date	Alternative B	Alternative A	Alternative C	March Alternative B
Basis Points				
Quarterly Averages				
2013 Q2	-114	-123	-84	-98
2013 Q3	-101	-119	-79	-87
2013 Q4	-91	-114	-74	-82
2014 Q1	-86	-109	-69	-77
2014 Q2	-80	-103	-64	-72
2014 Q3	-75	-97	-59	-68
2014 Q4	-70	-91	-55	-63
2015 Q1	-65	-85	-50	-58
2015 Q2	-60	-80	-46	-54
2015 Q3	-56	-74	-42	-50
2015 Q4	-51	-69	-38	-46
2016 Q4	-36	-50	-26	-32
2017 Q4	-24	-34	-18	-22
2018 Q4	-17	-24	-13	-16
2019 Q4	-13	-17	-12	-12
2020 Q4	-12	-14	-11	-11
2021 Q4	-11	-13	-10	-10
2022 Q4	-9	-11	-9	-8
2023 Q4	-7	-8	-7	-6
2024 Q4	-5	-6	-5	-5
2025 Q4	-4	-5	-4	-3

Federal Reserve Balance Sheet
End-of-Year Projections -- Alternative B

Billions of dollars

	Mar 29, 2013	2013	2015	2017	2019	2021	2023	2025
Total assets	3,207	3,771	3,675	2,683	1,882	2,081	2,307	2,564
Selected assets								
Liquidity programs for financial firms	8	8	0	0	0	0	0	0
Primary, secondary, and seasonal credit	0	0	0	0	0	0	0	0
Central bank liquidity swaps	8	8	0	0	0	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	1	0	0	0	0	0	0	0
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC	1	1	0	0	0	0	0	0
Securities held outright	2,939	3,486	3,436	2,497	1,740	1,965	2,202	2,468
U.S. Treasury securities	1,796	2,017	2,013	1,611	1,398	1,965	2,202	2,468
Agency debt securities	72	57	33	4	2	0	0	0
Agency mortgage-backed securities	1,071	1,412	1,390	882	339	0	0	0
Net portfolio holdings of TALF LLC	0	0	0	0	0	0	0	0
Total other assets	257	275	239	186	142	115	105	96
Total liabilities	3,152	3,708	3,592	2,573	1,737	1,888	2,053	2,227
Selected liabilities								
Federal Reserve notes in circulation	1,134	1,183	1,333	1,458	1,588	1,740	1,904	2,079
Reverse repurchase agreements	105	100	100	100	100	100	100	100
Deposits with Federal Reserve Banks	1,900	2,414	2,148	1,005	39	39	39	39
Reserve balances held by depository institutions	1,791	2,313	2,134	991	25	25	25	25
U.S. Treasury, General Account	79	93	5	5	5	5	5	5
Other Deposits	30	9	9	9	9	9	9	9
Interest on Federal Reserve Notes due to U.S. Treasury	2	0	0	0	0	0	0	0
Total capital	55	63	83	110	146	192	255	337

Source: Federal Reserve H.4.1 statistical releases and staff calculations.
Note: Components may not sum to totals due to rounding.

Projections

Federal Reserve Balance Sheet
End-of-Year Projections -- Alternative A

Billions of dollars

	Mar 29, 2013	2013	2015	2017	2019	2021	2023	2025
Total assets	3,207	4,067	4,273	3,301	1,952	2,078	2,301	2,557
Selected assets								
Liquidity programs for financial firms	8	8	0	0	0	0	0	0
Primary, secondary, and seasonal credit	0	0	0	0	0	0	0	0
Central bank liquidity swaps	8	8	0	0	0	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	1	0	0	0	0	0	0	0
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC	1	1	0	0	0	0	0	0
Securities held outright	2,939	3,763	4,007	3,090	1,793	1,955	2,190	2,456
U.S. Treasury securities	1,796	2,227	2,331	1,926	1,236	1,955	2,190	2,456
Agency debt securities	72	57	33	4	2	0	0	0
Agency mortgage-backed securities	1,071	1,478	1,643	1,160	555	0	0	0
Net portfolio holdings of TALF LLC	0	0	0	0	0	0	0	0
Total other assets	257	295	266	210	159	123	111	100
Total liabilities	3,152	4,004	4,190	3,191	1,807	1,885	2,047	2,220
Selected liabilities								
Federal Reserve notes in circulation	1,134	1,183	1,333	1,465	1,590	1,736	1,898	2,071
Reverse repurchase agreements	105	100	100	100	100	100	100	100
Deposits with Federal Reserve Banks	1,900	2,710	2,746	1,615	114	39	39	39
Reserve balances held by depository institutions	1,791	2,608	2,644	1,600	99	25	25	25
U.S. Treasury, General Account	79	93	93	5	5	5	5	5
Other Deposits	30	9	9	9	9	9	9	9
Interest on Federal Reserve Notes due to U.S. Treasury	2	0	0	0	-7	0	0	0
Total capital	55	63	83	110	146	192	255	337

Source: Federal Reserve H.4.1 statistical releases and staff calculations.
Note: Components may not sum to totals due to rounding.

Projections

Federal Reserve Balance Sheet
End-of-Year Projections -- Alternative C

Billions of dollars

	Mar 29, 2013	2013	2015	2017	2019	2021	2023	2025
Total assets	3,207	3,547	3,184	2,225	1,885	2,086	2,315	2,572
Selected assets								
Liquidity programs for financial firms	8	8	0	0	0	0	0	0
Primary, secondary, and seasonal credit	0	0	0	0	0	0	0	0
Central bank liquidity swaps	8	8	0	0	0	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	1	0	0	0	0	0	0	0
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC	1	1	0	0	0	0	0	0
Securities held outright	2,939	3,276	2,968	2,056	1,755	1,974	2,213	2,479
U.S. Treasury securities	1,796	1,908	1,904	1,506	1,693	1,974	2,213	2,479
Agency debt securities	72	57	33	4	1	0	0	0
Agency mortgage-backed securities	1,071	1,311	1,031	546	61	0	0	0
Net portfolio holdings of TALF LLC	0	0	0	0	0	0	0	0
Total other assets	257	261	216	168	130	112	102	93
Total liabilities	3,152	3,484	3,101	2,115	1,739	1,894	2,060	2,235
Selected liabilities								
Federal Reserve notes in circulation	1,134	1,183	1,333	1,458	1,591	1,746	1,912	2,087
Reverse repurchase agreements	105	100	100	100	100	100	100	100
Deposits with Federal Reserve Banks	1,900	2,190	1,658	547	39	39	39	39
Reserve balances held by depository institutions	1,791	2,088	1,643	533	25	25	25	25
U.S. Treasury, General Account	79	93	5	5	5	5	5	5
Other Deposits	30	9	9	9	9	9	9	9
Interest on Federal Reserve Notes due to U.S. Treasury	2	0	0	0	0	0	0	0
Total capital	55	63	83	110	146	192	255	337

Source: Federal Reserve H.4.1 statistical releases and staff calculations.
Note: Components may not sum to totals due to rounding.

Projections

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Abbreviations

ABCP	asset-backed commercial paper
ABS	asset-backed securities
AFE	advanced foreign economy
BEA	Bureau of Economic Analysis, Department of Commerce
BHC	bank holding company
BOE	Bank of England
BOJ	Bank of Japan
CDS	credit default swaps
C&I	commercial and industrial
CLO	collateralized loan obligation
CMBS	commercial mortgage-backed securities
CP	commercial paper
CRE	commercial real estate
Desk	Open Market Desk
ECB	European Central Bank
EME	emerging market economy
ETF	exchange-traded fund
FDIC	Federal Deposit Insurance Corporation
FOMC	Federal Open Market Committee; also, the Committee
G-7	Group of Seven (Canada, France, Germany, Italy, Japan, U.K., U.S.)
G-20	Group of Twenty (Argentina, Australia, Brazil, Canada, China, European Union, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, U.K., U.S.)
GCF	general collateral finance
GDP	gross domestic product
LIBOR	London interbank offered rate
LSAP	large-scale asset purchase
MBS	mortgage-backed securities

NIPA	national income and product accounts
OIS	overnight index swap
OTC	over-the-counter
PCE	personal consumption expenditures
REIT	real estate investment trust
REO	real estate owned
repo	repurchase agreement
RMBS	residential mortgage-backed securities
RRP	reverse repurchase agreement
SCOOS	Senior Credit Officer Opinion Survey on Dealer Financing Terms
SFA	Supplemental Financing Account
SOMA	System Open Market Account
S&P	Standard & Poor’s
TALF	Term Asset-Backed Securities Loan Facility
TBA	to be announced (for example, TBA market)
TGA	U.S. Treasury’s General Account
TIPS	Treasury inflation-protected securities
TPE	Term premium effects