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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Class I FOMC – Restricted Controlled (FR)

Report to the FOMC on Economic Conditions and Monetary Policy

Book B

Monetary Policy: Strategies and Alternatives

April 21, 2011

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

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Monetary Policy Strategies

All of the staff's estimates of short-run *r**—the real federal funds rate that, if maintained, would return output to its potential in twelve quarters—declined somewhat over the intermeeting period; by historical standards, the estimates remain low, and they are generally below the estimated actual real federal funds rate. These downward revisions reflect a small widening in the staff's estimate of current and projected output gaps.[1] As shown in the first two columns of the table in the exhibit "Equilibrium Real Federal Funds Rate," the estimates of short-run *r** that are conditioned on the staff outlook and estimates of the output gap (the "Tealbook-consistent" estimates generated from the FRB/US model and the EDO model) decreased 40 and 50 basis points, respectively. The estimates of short-run *r** generated from the FRB/US model and the EDO model using their own projections for output and inflation declined 20 and 10 basis points, respectively. The estimates of short-run *r** from the single-equation model and the small structural model have decreased by a slightly larger amount—50 basis points each—as both are more sensitive than the other models to the widening seen since the last round in the staff's estimate of the recent output gap.

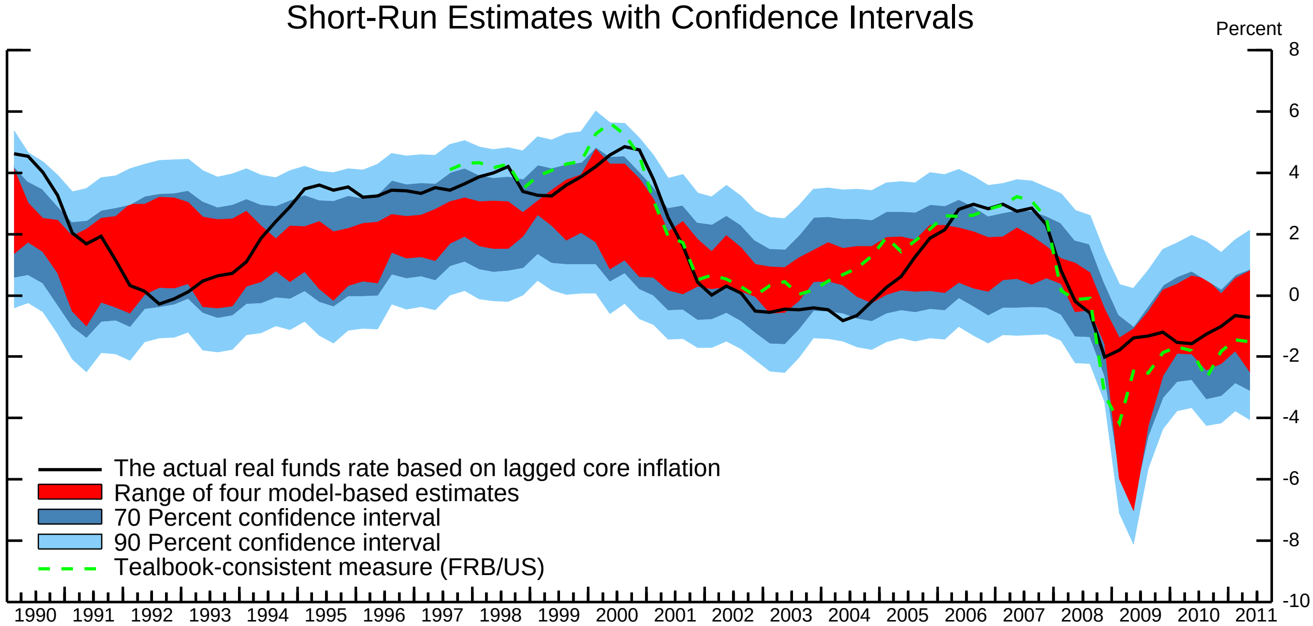
While the staff foresees slightly greater slack in labor and product markets over the next several years than it did in March, the staff has also revised up slightly its projection for core inflation over the next few years. On net, policy prescriptions arising from optimal control simulations of the FRB/US model using the extended staff baseline projection now prescribe somewhat more monetary stimulus than in the last Tealbook, as displayed in the exhibit "Constrained vs. Unconstrained Monetary Policy."[2] In these simulations, policymakers are assumed to place equal weight on keeping core PCE inflation close to 2 percent, on keeping the unemployment rate close to the effective NAIRU, and on minimizing changes in the federal funds rate. As has been true for some time, the simulations indicate that the optimal path of policy is affected significantly by the lower-bound constraint on the nominal federal funds rate. With this constraint imposed, the funds rate does not begin to rise appreciably until the fourth quarter of 2013, the unemployment rate remains above the staff estimate of the effective NAIRU until the

[1] For a discussion of these revisions, see page 25 of Tealbook Book A.

[2] The staff's baseline forecast incorporates the effects of the Federal Reserve's large-scale asset purchases as announced in November, and these effects are held at their baseline levels in the optimal policy simulations.

Equilibrium Real Federal Funds Rate

Short-Run Estimates with Confidence Intervals

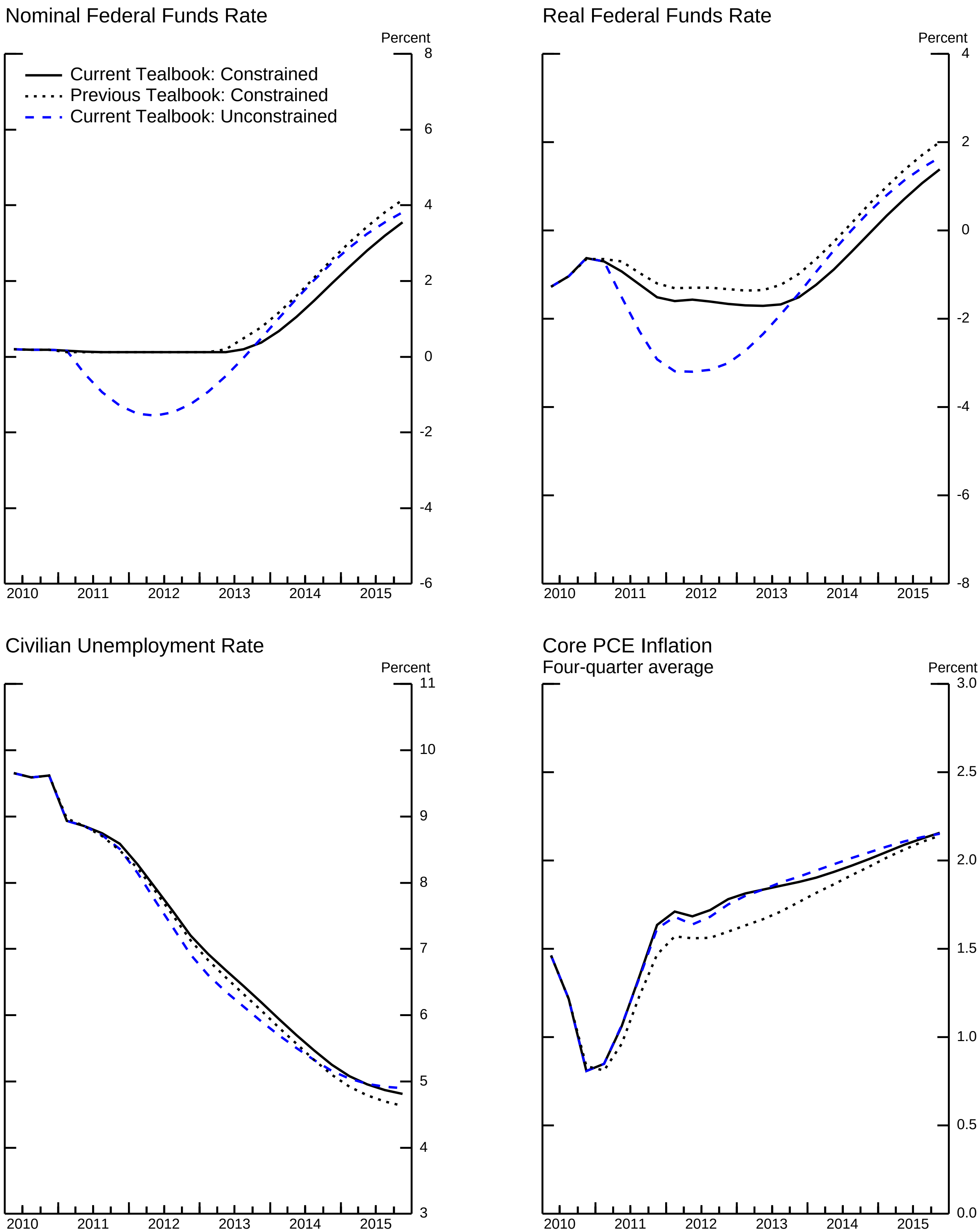


Short-Run and Medium-Run Measures (Percent)

	Current Tealbook	*Current Quarter Estimate as of Previous Tealbook*	*Previous Tealbook*
Short-Run Measures			
Single-equation model	-1.8	*-1.3*	*-1.4*
Small structural model	-1.1	*-0.6*	*-1.2*
EDO model	0.8	*0.9*	*0.7*
FRB/US model	-2.5	*-2.3*	*-2.4*
Confidence intervals for four model-based estimates			
70 percent confidence interval	-3.1 to 0.9		
90 percent confidence interval	-4.1 to 2.1		
Tealbook-consistent measures			
EDO model	-0.3	*0.2*	*-0.3*
FRB/US model	-1.5	*-1.1*	*-1.4*
Medium-Run Measures			
Single-equation model	1.0	*1.1*	*1.1*
Small structural model	1.2	*1.3*	*1.2*
Confidence intervals for two model-based estimates			
70 percent confidence interval	0.2 to 2.0		
90 percent confidence interval	-0.5 to 2.6		
TIPS-based factor model	2.0		*2.0*
Memo			
Actual real federal funds rate	-0.7		*-0.7*

Note: Explanatory Note A provides background information regarding the construction of these measures and confidence intervals. The actual real federal funds rate shown is based on lagged core inflation as a proxy for inflation expectations. For information regarding alternative measures, see Explanatory Note A. 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, this table includes a third column labeled "Current Quarter Estimate as of Previous Tealbook."

Constrained vs. Unconstrained Monetary Policy
(2 Percent Inflation Goal)



third quarter of 2014, and core inflation stays below its target rate until the fourth quarter of 2014 (black solid lines).[3] Reflecting the revisions to the staff forecast, the constrained optimal funds rate path now departs from the effective lower bound about one quarter later than in the March Tealbook. If the nominal funds rate could fall below zero, the optimal nominal funds rate, according to this exercise, would decline to around minus 1.6 percent in the second quarter of 2012, before returning to positive levels by the fourth quarter of 2013 (blue dashed line), thereby yielding a somewhat more favorable macroeconomic scenario than under the constrained simulations.

On net, the staff's revised projections for inflation and the output gap did not significantly alter the funds rate path implied by the estimated outcome-based policy rule, which still shows the federal funds rate edging above its effective lower bound in the third quarter of 2012. As shown in the exhibit "The Policy Outlook in an Uncertain Environment," the path associated with this rule—which forms the basis for the path of the federal funds rate in the staff's baseline forecast—has the funds rate reaching 3.3 percent by the end of 2014, just a little below its value in the last Tealbook.

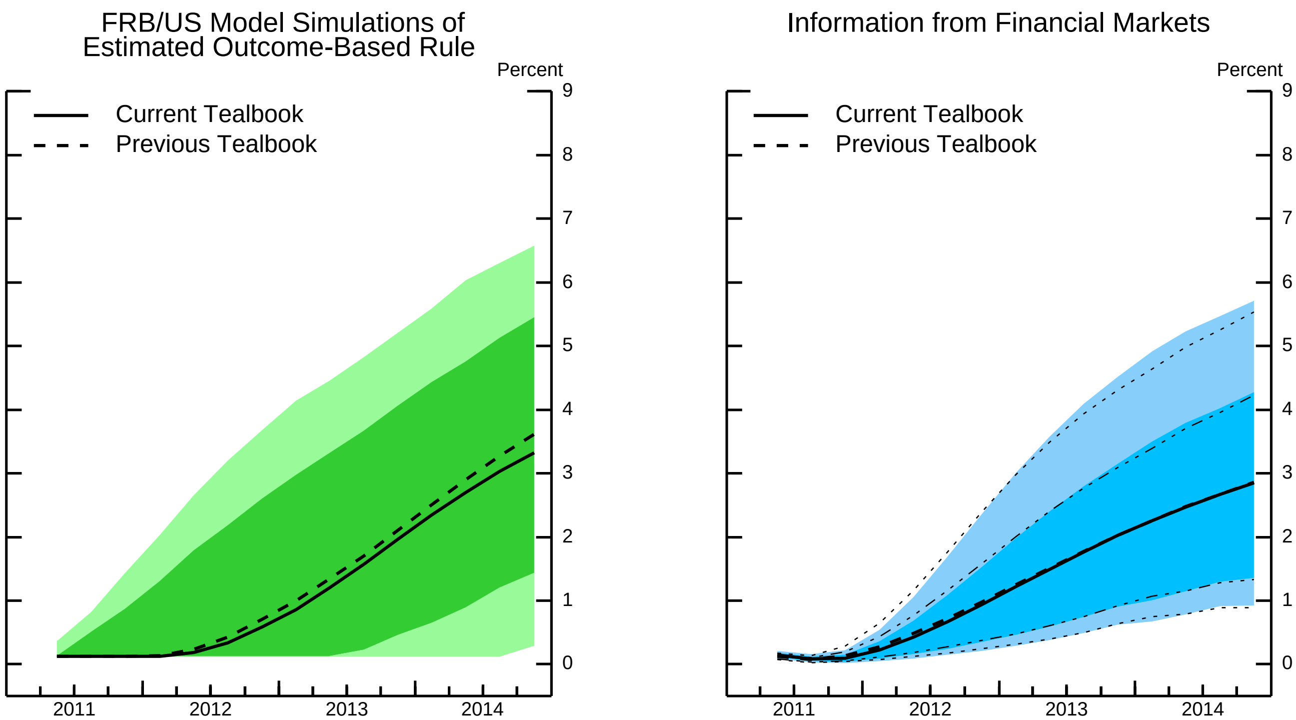
As shown to the right, information from financial markets suggests that there has been little change, on net, in investors' expectations about the path for the federal funds rate since the time of the March Tealbook. Market participants continue to expect the federal funds rate to move above the current target range during the first half of 2012. Thereafter, the funds rate rises gradually toward 2.9 percent by the end of 2014.

The lower panel of the exhibit provides near-term prescriptions from simple policy rules.[4] As shown in the left-hand columns, prescriptions from all of the rules, other than the first-difference rule, remain at the effective lower bound. The right-hand columns display the prescriptions that would arise from these rules in the absence of the lower-bound constraint. Most of the unconstrained rules prescribe a slightly lower federal funds rate than in March, as the widening in the estimate of the current output gap relative to the

[3]The staff's estimate of the effective NAIRU falls from 6½ percent in the fourth quarter of 2010 to 6 percent by the first quarter of 2013, and then to 5¼ percent by the end of 2015, as the extended unemployment benefits expire and labor market functioning progressively improves.

[4] The exhibit displays point-in-time prescriptions from the rules, taking as inputs the staff's baseline forecast, without considering the dynamic effects of different policy prescriptions on the economic outlook. No adjustment to the rules has been made to account for the Federal Reserve's asset holdings. The accompanying box, "Considerations Related to the Pace and Timing of Policy Firming," presents alternative simulations that incorporate the dynamic consequences of different rules for the funds rate path and the associated outcomes for inflation and real activity.

The Policy Outlook in an Uncertain Environment



Note: As in the March Tealbook, the staff baseline projection for the federal funds rate is based on the outcome-based policy rule. Accordingly, the top-left panel does not report a separate series for the staff's projected funds rate. In both panels, the dark and light shading represent the 70 and 90 percent confidence intervals respectively. Financial market quotes are as of April 20.

Near-Term Prescriptions of Simple Policy Rules

	Constrained Policy		Unconstrained Policy	
	2011Q2	2011Q3	2011Q2	2011Q3
Taylor (1993) rule	**0.13**	**0.13**	**-0.49**	**0.03**
Previous Tealbook	*0.13*	*0.13*	*-0.44*	*0.02*
Taylor (1999) rule	**0.13**	**0.13**	**-3.40**	**-2.66**
Previous Tealbook	*0.13*	*0.13*	*-3.17*	*-2.53*
Estimated outcome-based rule	**0.13**	**0.13**	**-0.30**	**-0.56**
Previous Tealbook	*0.13*	*0.13*	*-0.18*	*-0.45*
Estimated forecast-based rule	**0.13**	**0.13**	**-0.05**	**-0.18**
Previous Tealbook	*0.13*	*0.13*	*-0.03*	*-0.16*
First-difference rule	**0.48**	**0.90**	**0.48**	**0.90**
Previous Tealbook	*0.48*	*0.84*	*0.48*	*0.84*

Memo	2011Q2	2011Q3
Staff assumption	0.10	0.13
Fed funds futures	0.10	0.11
Median expectation of primary dealers	0.13	0.13
Blue Chip forecast (April 1, 2011)	0.20	0.20

Note: In calculating the near-term prescriptions of these simple policy rules, policymakers' long-run inflation objective is assumed to be 2 percent. Explanatory Note B provides further background information.

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Considerations Related to the Timing and Pace of Policy Firming

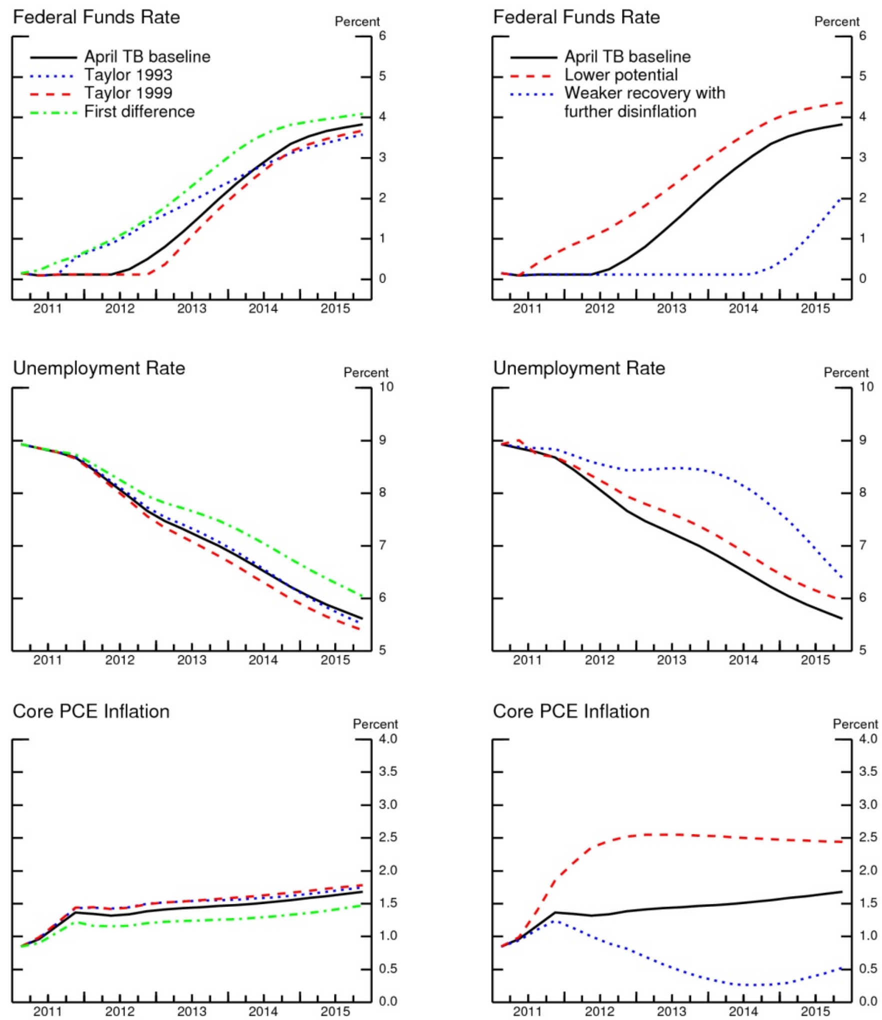
As the economy continues to recover, the Committee will need to begin withdrawing the policy accommodation now in place. Many factors will likely influence the FOMC's decisions on the timing and pace of this tightening, including Committee participants' judgments concerning the appropriate responsiveness of policy to movements in real activity and inflation as well as the actual evolution of economic conditions. Moreover, the Committee will presumably want to balance a variety of risks, including the chance that inflation expectations could begin to drift up in the accommodative policy environment, and the possibility that the recovery could falter and core inflation resume its downward drift at a time when the federal funds rate was still constrained by the lower bound.

To illustrate a few of the considerations involved, we start with a set of FRB/US model simulations in which underlying economic conditions proceed as anticipated in the staff baseline forecast but monetary policy responds to the movements in real activity and inflation in different ways; these simulations are shown in the left-hand panels of the accompanying figure. Unlike the policy rule prescriptions displayed in the exhibit "The Policy Outlook in an Uncertain Environment," these simulations incorporate feedback between the policy rule prescriptions and the forecasts of macroeconomic variables. In one case (blue lines), the funds rate follows the prescriptions of the Taylor (1993) rule, while in another (red lines), policy follows the Taylor (1999) rule. Because the latter rule is twice as responsive as the former to economic slack, it prescribes both a considerably later start to policy firming and a more rapid increase in rates once firming commences. Nevertheless, outcomes for unemployment and inflation are generally quite similar under the two rules because private agents in the FRB/US model recognize that the two rules imply a similar average stance of monetary policy over the longer run. In contrast, economic outcomes are somewhat different under the first-difference rule (green lines), which places no weight on the estimated level of slack and instead sets policy in response to projected inflation and economic growth over the next few quarters. Because this rule prescribes an immediate departure from the effective lower bound and a considerably tighter stance of policy on average over the next five years, it implies both a higher path for the unemployment rate and a lower path for inflation.

The Committee would also presumably wish to recalibrate the stance of policy should underlying economic conditions depart from the trajectories currently anticipated in the baseline projection. This consideration is illustrated in the right-hand panels, which compare the staff baseline projection with two of the alternative scenarios discussed in the "Risks and Uncertainty" section of Book A of the Tealbook; in all cases, the federal funds rate follows the prescriptions of the outcomes-based policy rule. In the "lower potential" scenario, economic slack is less than policymakers initially perceive, leading to higher inflation, weaker real activity, and a more rapid lift-off. In the "weaker recovery with further disinflation" scenario, the recovery stalls and underlying inflation continues to drift down, causing the federal funds rate to remain at the effective lower bound until 2014.

Many factors beyond those featured in these illustrative simulations will likely influence the Committee's decisions regarding the timing and pace of policy firming. Moreover, the simulations presented here focus on changes in the federal funds rate target, taking the trajectory of SOMA holdings of longer-term securities as given. The FOMC could also adjust the overall stance of policy through changes in those holdings, and such changes—as well as the stimulus currently being provided by previous asset purchases—would presumably have implications for the appropriate setting of the funds rate.

Pace and Timing of Policy Firming under Different Scenarios



Note: Results shown on the left, which are all conditioned on the staff's baseline assumptions for underlying economic conditions, report the simulated implications for unemployment, inflation and interest rates of those baseline assumptions when the federal funds rate follows the prescriptions of the indicated policy rule. Results shown in the panels on the right, which all assume that monetary policy follows the prescriptions of the estimated outcomes-based rule, represent different scenarios for the evolution of underlying economic conditions.

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last round generally outweighs the upward revision to the staff's inflation projection.[5] With the exception of the first-difference rule—which responds to the staff's forecast of a narrowing output gap and a slightly higher inflation profile without regard for the still-elevated level of slack—all unconstrained prescriptions take values that are at or below the effective lower bound.

[5] The funds rate prescriptions for the third quarter of 2011 from the Taylor (1993) rule—which places relatively more weight on the prior four-quarter core inflation rate—and from the first-difference rule have marginally increased as a result of the slightly higher staff projection for inflation.

Monetary Policy Alternatives

This Tealbook presents three policy alternatives—labeled A, B, and C—for the Committee's consideration. Under either Alternative A or B, the Committee would state that it will complete, by the end of the current quarter, the intended $600 billion increase in securities holdings that it first announced in November. The draft statement for Alternative B also notes that the Committee will review the size and composition of its securities holdings and that it is prepared to adjust those holdings as needed. In contrast, Alternative A indicates that the Committee is prepared to expand its purchases and extend them beyond the current quarter if necessary. Under Alternative C, the Committee would limit the increase in its holdings to $450 billion; asset purchases for purposes other than reinvesting principal payments would stop soon after the Committee's April meeting. Moreover, Alternative C signals that the Committee is likely to end the reinvestment of principal payments from its securities holdings in the near future. Each of the alternatives would maintain the existing target range for the federal funds rate for the coming intermeeting period. Under Alternative B, the Committee would continue to indicate that it anticipates keeping the funds rate at its effective lower bound for an extended period. Alternative A would provide more explicit forward guidance by stating that the Committee now expects that economic conditions will warrant exceptionally low levels of the funds rate at least through mid-2012. Alternative C would signal that the Committee anticipates raising its target for the federal funds rate sooner than markets currently expect.

The draft statement for Alternative B updates the assessment of current economic conditions by noting that information received over the intermeeting period "indicates that the economic recovery is proceeding at a moderate pace and overall labor market conditions are improving gradually." The statement for Alternative B recognizes that rising prices of oil and other commodities are boosting inflation, but it also notes that "measures of underlying inflation are still subdued." Alternative B (and Alternative C) offers the Committee a choice of stating that longer-term inflation expectations "have remained stable" or that they "have remained generally stable." Alternative B reiterates the observations that the unemployment rate is elevated and that underlying inflation is somewhat low, relative to mandate-consistent levels. In light of this assessment of current conditions and the outlook, the FOMC would maintain its existing policy of reinvesting principal and state that it "will complete purchases of $600 billion of longer-term

Treasury securities by the end of the current quarter." With the intended expansion of the securities portfolio announced in November nearing completion, Alternative B would drop language indicating that the Committee will regularly review "the pace of its securities purchases and the overall size of the asset purchase program." Instead, the Committee would say that it will regularly review "the size and composition of its securities holdings," and that it "is prepared to adjust those holdings as needed to best foster maximum employment and price stability." That wording encompasses a range of possibilities: additional purchases, an end to reinvestment of principal payments, outright sales, and adjustments in the composition of the SOMA portfolio with no change in its size.

Compared with Alternative B, the draft statement for Alternative C presents a more upbeat view of current and prospective economic conditions, stating that incoming information "indicates that the economic recovery is on a firm footing." Moreover, Alternative C notes that the unemployment rate and underlying inflation "have moved somewhat closer" to mandate-consistent levels. The statement for Alternative C, like that for Alternative B, recognizes that rising prices of oil and other commodities are boosting inflation while noting that measures of underlying inflation are still subdued. The Committee could choose whether to characterize longer-term inflation expectations as "stable" or "generally stable." Compared to the other alternatives, Alternative C indicates greater concern about inflation risks by emphasizing the importance of stable longer-term inflation expectations for the inflation outlook. Accordingly, Alternative C would end securities purchases quickly to limit the increase in SOMA holdings to $450 billion.[1] The statement for Alternative C would indicate that the Committee will maintain its reinvestment policy "for now" and that it "will regularly review its reinvestment policy and the level of its securities holdings." These words would signal that reinvestment is likely to end soon and that asset sales might follow. Finally, the Committee would say that it anticipates that economic conditions are likely to warrant exceptionally low levels for the federal funds rate "for some time" rather than for "an extended period." Taken as a whole, Alternative C would indicate that the first steps toward removing policy accommodation and normalizing the balance sheet are likely to come soon and that further steps could follow in short order.

[1] The Desk has been purchasing longer-term Treasury securities at a pace that increases SOMA securities holdings by about $80 billion per month. When the Committee meets on April 26–27, the cumulative increase since November will be about $430 billion. Instructing the Desk to increase holdings by $450 billion would allow it to spread the remaining purchases over a week or two to give dealers and other participants in the Treasury market some time to adjust to the policy surprise.

The Committee's assessment of economic conditions under Alternative A would note that the recovery is proceeding at a moderate pace, but would highlight that growth recently has been slower than anticipated and point to higher energy prices as a possible cause. The draft statement for Alternative A also indicates that overall conditions in the labor market "are improving only gradually." Alternative A acknowledges the pickup in inflation in recent months, but emphasizes that longer-term inflation expectations have remained stable and that measures of underlying inflation are still subdued. While indicating that the Committee continues to anticipate a gradual return to higher levels of resource utilization in a context of price stability, the statement for Alternative A notes an increase in downside risks to the outlook for growth. Accordingly, the Committee would not only say that it "will complete" purchases of $600 billion of longer-term Treasury securities by the end of the current quarter, it also would indicate that it "is prepared to expand and extend the purchase program if needed" to best foster its objectives. Alternative A also contains more explicit forward guidance for the funds rate than the other alternatives, noting that the Committee anticipates that economic conditions "are likely to warrant exceptionally low levels of the federal funds rate at least through mid-2012." Taken together, the language about securities purchases and about the funds rate in this alternative would signal that the Committee is in no hurry to begin reducing policy accommodation, and that its next move could be an easing.

The next two pages contain a table that shows key elements of the alternatives. The table is followed by complete draft statements, then by a summary of the arguments for each alternative.

Alternatives

Table 1: Overview of Alternatives for the April 27 FOMC Statement

<table>
<tr><th rowspan="2">Key Components</th><th rowspan="2">March Statement</th><th colspan="3">April Alternatives</th></tr>
<tr><th>A</th><th>B</th><th>C</th></tr>
<tr><td colspan="5">Economic Activity</td></tr>
<tr><td>Economic Recovery</td><td>is on a firmer footing</td><td>proceeding at a moderate pace, albeit more slowly than had been anticipated</td><td>proceeding at a moderate pace</td><td>on a firm footing</td></tr>
<tr><td rowspan="2">Labor Market</td><td>conditions appear to be improving gradually</td><td>conditions are improving only gradually</td><td>conditions are improving gradually</td><td>conditions are improving</td></tr>
<tr><td>unemployment rate remains elevated</td><td colspan="2">unemployment rate remains elevated</td><td>unemployment rate has moved somewhat closer to mandate-consistent levels</td></tr>
<tr><td>Household Spending</td><td>continues to expand</td><td>continues to expand; increased energy costs may be weighing on consumer purchases</td><td colspan="2">continues to expand</td></tr>
<tr><td colspan="5">Inflation</td></tr>
<tr><td rowspan="4">Recent Developments</td><td>commodity prices have risen significantly since summer; sharp run-up in oil prices in recent weeks</td><td colspan="3">commodity prices have risen significantly since last summer;
further increase in oil prices since March</td></tr>
<tr><td>expectations have remained stable</td><td>while inflation has picked up in recent months, expectations have remained stable</td><td colspan="2">inflation has picked up in recent months, but expectations have remained [generally] stable</td></tr>
<tr><td>measures of underlying inflation have been subdued, continue to be somewhat low</td><td colspan="2">measures of underlying inflation are still subdued, continue to be somewhat low relative to mandate-consistent levels</td><td>measures of underlying inflation are still subdued, have moved somewhat closer to mandate-consistent levels</td></tr>
<tr><td>commodity prices are putting upward pressure on inflation; effects expected to be transitory</td><td colspan="2">commodity prices are putting upward pressure on inflation;
effects expected to be transitory</td><td>commodity prices are boosting overall inflation; expected to be transitory so long as longer-run expectations remain stable</td></tr>
<tr><td colspan="5">Outlook</td></tr>
<tr><td>Outlook</td><td>anticipate gradual return to higher resource utilization with price stability</td><td>although anticipate gradual return to higher resource utilization with price stability, downside risks to outlook for growth have increased</td><td colspan="2">anticipate gradual return to higher resource utilization with price stability</td></tr>
</table>

Table 1: Overview of Alternatives for the April 27 FOMC Statement
(*continued*)

<table>
<tr><th rowspan="2">Key Components</th><th rowspan="2">March Statement</th><th colspan="3">April Alternatives</th></tr>
<tr><th>A</th><th>B</th><th>C</th></tr>
<tr><td colspan="5">Federal Funds Rate Target Range</td></tr>
<tr><td>Intermeeting Period</td><td>0 to ¼ percent</td><td colspan="3">0 to ¼ percent</td></tr>
<tr><td>Forward Guidance</td><td>exceptionally low levels for an extended period</td><td>exceptionally low levels at least through mid-2012</td><td>exceptionally low levels for an extended period</td><td>exceptionally low levels for some time</td></tr>
<tr><td colspan="5">SOMA Portfolio Policy</td></tr>
<tr><td rowspan="2">Approach</td><td>intends to purchase $600 billion of Treasuries by end of 2011:Q2</td><td colspan="2">will complete purchases of $600 billion of Treasuries by end of current quarter</td><td>purchases to date promote appropriate progress toward mandate; complete only $450 billion of the intended $600 billion increase in securities holdings</td></tr>
<tr><td>maintain reinvestment policy</td><td colspan="2">maintain reinvestment policy</td><td>for now, maintain reinvestment policy</td></tr>
<tr><td colspan="5">Future Policy Action</td></tr>
<tr><td>Asset Purchases / Holdings</td><td>will regularly review pace and size of purchases and adjust as needed</td><td>prepared to expand and extend purchases if needed</td><td>will regularly review size and composition of holdings; prepared to adjust holdings as needed</td><td>will regularly review reinvestment policy and level of holdings; will make adjustments as needed</td></tr>
<tr><td>Overall</td><td>will monitor economic outlook and employ policy tools as necessary to support the recovery and to help ensure that inflation, over time, is consistent with mandate</td><td colspan="3">will monitor economic outlook and employ policy tools as necessary to support the recovery and to help ensure that inflation, over time, is consistent with mandate</td></tr>
</table>

March FOMC Statement

1. Information received since the Federal Open Market Committee met in January suggests that the economic recovery is on a firmer footing, and overall conditions in the labor market appear to be improving gradually. Household spending and business spending on equipment and software continue to expand. However, investment in nonresidential structures is still weak, and the housing sector continues to be depressed. Commodity prices have risen significantly since the summer, and concerns about global supplies of crude oil have contributed to a sharp run-up in oil prices in recent weeks. Nonetheless, longer-term inflation expectations have remained stable, and measures of underlying inflation have been subdued.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. Currently, the unemployment rate remains elevated, and measures of underlying inflation continue to be somewhat low, relative to levels that the Committee judges to be consistent, over the longer run, with its dual mandate. The recent increases in the prices of energy and other commodities are currently putting upward pressure on inflation. The Committee expects these effects to be transitory, but it will pay close attention to the evolution of inflation and inflation expectations. The Committee continues to anticipate a gradual return to higher levels of resource utilization in a context of price stability.

3. To promote a stronger pace of economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to continue expanding its holdings of securities as announced in November. In particular, the Committee is maintaining its existing policy of reinvesting principal payments from its securities holdings and intends to purchase $600 billion of longer-term Treasury securities by the end of the second quarter of 2011. The Committee will regularly review the pace of its securities purchases and the overall size of the asset-purchase program in light of incoming information and will adjust the program as needed to best foster maximum employment and price stability.

4. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels for the federal funds rate for an extended period.

5. The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to support the economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate.

APRIL FOMC STATEMENT—ALTERNATIVE A

1. Information received since the Federal Open Market Committee met in ~~January~~ **March** suggests that the economic recovery is ~~on a firmer footing~~ **proceeding at a moderate pace, albeit somewhat more slowly than had been anticipated**, and **that** overall conditions in the labor market ~~appear to be~~ **are** improving **only** gradually. Household spending and business investment in equipment and software continue to expand**, but increased energy costs may be weighing on consumer purchases of non-energy goods and services**. ~~However~~ Investment in nonresidential structures is still weak, and the housing sector continues to be depressed. Commodity prices have risen significantly since ~~the~~ **last** summer, and concerns about global supplies of crude oil have contributed to a ~~sharp run-up~~ **further increase** in oil prices ~~in recent weeks~~ **since the Committee met in March**. ~~Nonetheless,~~ **While inflation has picked up in recent months,** longer-term inflation expectations have remained stable and measures of underlying inflation ~~have been~~ **are still** subdued.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. ~~Currently,~~ The unemployment rate remains elevated, and measures of underlying inflation continue to be somewhat low, relative to levels that the Committee judges to be consistent, over the longer run, with its dual mandate. ~~The recent~~ Increases in the prices of energy and other commodities are ~~currently~~ putting upward pressure on inflation. The Committee expects these effects to be transitory, but it will pay close attention to the evolution of inflation and inflation expectations. **Although** the Committee continues to anticipate a gradual return to higher levels of resource utilization in a context of price stability**, recent developments have increased the downside risks to the outlook for economic growth**.

3. To promote a stronger pace of economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to continue expanding its holdings of securities as announced in November. In particular, the Committee is maintaining its existing policy of reinvesting principal payments from its securities holdings and ~~intends~~ **will complete** ~~to~~ purchase**s of** $600 billion of longer-term Treasury securities by the end of the ~~second~~ **current** quarter~~ of 2011~~. The Committee ~~will regularly review the pace of its securities purchases and the overall size of the asset-purchase program in light of incoming information and will adjust~~ **is prepared to expand and extend the purchase program** ~~the program as~~ **if** needed to best foster maximum employment and price stability.

4. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and ~~continues to~~ **currently** anticipate**s** that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels for the federal funds rate ~~for an extended period~~ **at least through mid-2012**.

5. The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to support the economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate.

April FOMC Statement—Alternative B

1. Information received since the Federal Open Market Committee met in ~~January~~ **March** ~~suggests~~ **indicates** that the economic recovery is ~~on a firmer footing~~ **proceeding at a moderate pace** and overall conditions in the labor market ~~appear to be~~ **are** improving gradually. Household spending and business investment in equipment and software continue to expand. However, investment in nonresidential structures is still weak, and the housing sector continues to be depressed. Commodity prices have risen significantly since ~~the~~ **last** summer, and concerns about global supplies of crude oil have contributed to a ~~sharp run-up~~ **further increase** in oil prices ~~in recent weeks~~ **since the Committee met in March**. ~~Nonetheless,~~ **Inflation has picked up in recent months, but** longer-term inflation expectations have remained **[generally]** stable and measures of underlying inflation ~~have been~~ **are still** subdued.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. ~~Currently,~~ The unemployment rate remains elevated, and measures of underlying inflation continue to be somewhat low, relative to levels that the Committee judges to be consistent, over the longer run, with its dual mandate. ~~The recent~~ Increases in the prices of energy and other commodities are ~~currently~~ putting upward pressure on inflation. The Committee expects these effects to be transitory, but it will pay close attention to the evolution of inflation and inflation expectations. The Committee continues to anticipate a gradual return to higher levels of resource utilization in a context of price stability.

3. To promote a stronger pace of economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to continue expanding its holdings of securities as announced in November. In particular, the Committee is maintaining its existing policy of reinvesting principal payments from its securities holdings and ~~intends to~~ **will complete** purchase**s of** $600 billion of longer-term Treasury securities by the end of the ~~second~~ **current** quarter ~~of 2011~~. The Committee will regularly review the ~~pace~~ **size and composition** of its securities ~~purchases~~ **holdings** ~~and the overall size of the asset-purchase program~~ in light of incoming information and ~~will adjust the program~~ **is prepared to adjust those holdings** as needed to best foster maximum employment and price stability.

4. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels for the federal funds rate for an extended period.

5. The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to support the economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate.

April FOMC Statement—Alternative C

1. Information received since the Federal Open Market Committee met in ~~January~~ **March** ~~suggests~~ **indicates** that the economic recovery is on a firm~~er~~ footing and overall conditions in the labor market ~~appear to be~~ **are** improving ~~gradually~~. Household spending and business investment in equipment and software continue to expand. ~~However, investment in nonresidential structures is still weak, and the housing sector continues to be depressed.~~ Commodity prices have risen significantly since the summer, and concerns about global supplies of crude oil have contributed to a ~~sharp run-up~~ **further increase** in oil prices ~~in recent weeks~~ **since the Committee met in March**. ~~Nonetheless,~~ **Inflation has picked up in recent months, but** longer-term inflation expectations have remained **[generally]** stable and measures of underlying inflation ~~have been~~ **are still** subdued.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. ~~Currently,~~ The unemployment rate ~~remains elevated~~ and measures of underlying inflation ~~continue to be somewhat low, relative~~ **have moved somewhat closer** to levels that the Committee judges to be consistent, over the longer run, with its dual mandate. **However,** ~~The recent~~ increases in the prices of energy and other commodities ~~are currently putting upward pressure on~~ **are boosting overall** inflation. The Committee expects these effects to be transitory **so long as longer-term inflation expectations remain stable**, ~~but~~ **and** it will pay close attention to the evolution of inflation and inflation expectations. The Committee continues to anticipate a gradual return to higher levels of resource utilization in a context of price stability.

3. ~~To promote a stronger pace of economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate~~ **In light of incoming information, the Committee judges that the increase in its holdings of longer-term securities since November is sufficient to promote appropriate progress toward maximum employment and price stability. Accordingly**, the Committee decided today to ~~continue expanding~~ **complete only $450 billion of the intended $600 billion increase in** its holdings of securities ~~as~~ announced in November. ~~In particular~~ **For now**, the Committee is maintaining its existing policy of reinvesting principal payments from its securities holdings ~~and intends to purchase $600 billion of longer-term Treasury securities by the end of the second quarter of 2011~~. **The Committee** will regularly review ~~the pace of its securities purchases and the overall size of the asset-purchase program needed~~ **its reinvestment policy and the level of its securities holdings** in light of incoming information and will ~~adjust the program~~ **make adjustments** as needed to best foster maximum employment and price stability.

4. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and ~~continues to~~ anticipate**s** that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels for the federal funds rate for ~~an extended period~~ **some time**.

5. The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to support the economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate.

Alternatives

THE CASE FOR ALTERNATIVE B

If policymakers' view of the medium-term outlook for real activity and inflation has not changed appreciably since the March meeting, they may judge that it is appropriate to complete the intended $600 billion increase in holdings of longer-term securities. The unemployment rate has come down, but it remains high relative to participants' projections of the longer-run rate of unemployment. While measures of underlying inflation have moved up, reversing a small part of their decline since mid-2008, policymakers may still see underlying inflation as unlikely to exceed mandate-consistent levels, given that longer-term inflation expectations remain within their recent ranges. Accordingly, they might choose to issue a statement along the lines of Alternative B to convey their judgment that the economy is likely to recover at an acceptable pace and that inflation and employment are likely to converge toward mandate-consistent levels over time, and to signal that they do not expect to begin removing policy accommodation in the near term.

The Committee may have interpreted the incoming information on spending, production, and labor markets as suggesting that the economic recovery is progressing broadly in line with expectations. While GDP growth slowed appreciably during the first quarter of this year, much of the slowing appears to have been caused by temporary factors—including a sharp drop in government purchases—that are unlikely to be repeated. Moreover, policymakers, like the staff, may think that the run-up in energy prices in recent months will slow the rise in consumer spending only temporarily, and that growth of real personal consumption expenditures will pick up as employment continues to expand and as energy prices level out. And while fiscal policy may be more restrictive in coming years than previously anticipated, the foreign exchange value of the dollar has declined somewhat further over the intermeeting period and the outlook for economic activity abroad remains positive.

Regarding inflation, although increases in the prices of energy and other commodities are boosting headline inflation, measures of underlying inflation trends have risen much less and remain below levels the Committee considers consistent with its longer-term objectives. Although the global oil market remains volatile, prices in oil futures markets continue to suggest that market participants expect oil prices to stabilize. In addition, wage gains are modest and unit labor costs have changed little in recent quarters. Hence, the Committee may continue to anticipate that the run-up in commodity prices will not lead to a large or persistent increase in inflation. Policymakers may see some risk that recent increases in the prices of oil and other commodities could not only push near-term inflation higher but also lead to a rise in longer-run inflation expectations. However, they may find it reassuring that both survey and market-based measures of longer-term inflation expectations have remained within the ranges observed in recent years. If the Committee judges that the medium-term outlook for real activity and inflation has not changed significantly, it may decide that completing the $600 billion securities purchase program by mid-year but not extending it, as in Alternative B, remains appropriate to support the recovery and to help ensure that inflation, over time, is at a levels consistent with the Committee's dual mandate.

Recent economic developments may have heightened policymakers' concerns about downside risks to the pace and durability of the recovery and about upside risks to inflation. In particular, political unrest in the Middle East and North Africa and the resulting upward pressure on oil prices may have increased the likelihood of an adverse shock to real incomes and to household and business confidence, and thus to private domestic final demand. In addition, policymakers may see a continuing risk of an adverse financial shock originating in markets for sovereign debt. At the same time, they may worry that further gains in oil and commodity prices, and the resulting increase in consumer price inflation, could result in a persistent increase in expected inflation—particularly if the Federal Reserve is perceived to be unduly focused on risks to economic growth and employment. Given these countervailing concerns, the Committee may judge it appropriate to wait for additional information before shifting toward either tighter or easier monetary policy. More broadly, policymakers may have a high bar for changing the securities purchase program at this time because they see fine tuning as undesirable or because they want to minimize financial market volatility. In particular, they may judge that either suddenly discontinuing the current program or unexpectedly signaling that an extension may be necessary to foster continued recovery would be unsettling to financial markets, particularly at a time of heightened uncertainty about the economic outlook.

The Desk's recent survey of primary dealers revealed that all expect the Committee to decide, during its April meeting, to complete $600 billion of securities purchases. The dealers also expect the Committee to update the statement's language about economic conditions but to make no other meaningful changes; in particular, they do not expect an end to reinvestment or a change in the "extended period" language.

Accordingly, a statement along the lines of Alternative B would likely result in little change in bond yields, equity prices, or the foreign exchange value of the dollar.

THE CASE FOR ALTERNATIVE C

Policymakers may see the slower GDP growth in the first quarter of this year as resulting largely or entirely from temporary factors. In addition, they may see the sizable decline in the unemployment rate and brisk growth in manufacturing production in recent months, along with the small rise in underlying inflation trends, as indicating that the recovery is stronger than the spending data suggest and that there is less slack than the staff estimates. If so, they may conclude that bringing securities purchases to a quick close and signaling an earlier-than-expected start to reducing policy accommodation, as in Alternative C, is appropriate.

Although the recent data on economic activity have been somewhat mixed, policymakers may judge that the fundamentals supporting the expansion, including accommodative financial conditions, rising business sentiment, and strong growth abroad, remain in place and are likely to lead to an acceleration in economic activity this year. Indeed, some policymakers may see a sizable probability that real activity will rebound strongly when the temporary factors that have held back spending early this year recede, and will then continue to accelerate, as in the "Stronger Recovery" alternative simulation presented in Book A of the Tealbook. In that scenario, the dynamics of a mutually reinforcing pickup in hiring, stronger spending, and improved credit conditions generate an appreciably stronger recovery, and higher inflation, than in the baseline forecast. Moreover, some policymakers may see less slack in the economy than the unemployment rate might suggest, as in the "Lower Potential" alternative simulation. Even though output growth is slower in that scenario than in the baseline forecast, inflation is noticeably higher, in part because the public believes that policymakers will be slow to recognize the true state of supply-side conditions. To the extent that policymakers assign a high probability to such scenarios, they may judge it appropriate to begin reducing policy accommodation fairly soon.

For now, both survey and market-based measures suggest that longer-term inflation expectations are reasonably well anchored despite the steep run-up in prices of oil and other commodities. However, the Committee may be concerned that such measures are close to the upper ends of the ranges in which they have moved in recent years, and policymakers may see a significant risk that inflation expectations could increase noticeably as real activity accelerates, particularly if commodity prices continue to rise and if inflation pressures abroad push core import prices up further. In light of such risks, participants may view an earlier-than-expected scaling back of policy accommodation as necessary to keep longer-term inflation expectations well anchored. In addition, some participants may find a reduction in policy accommodation attractive because they see evidence of excessive risk-taking and leverage in some parts of the financial system and worry that such excesses could again contribute to financial instability.[2] Accordingly, the Committee may want to limit the increase in its securities holdings to $450 billion, and to modify the statement to signal that an early initiation of steps to tighten policy and normalize the balance sheet is likely, as in Alternative C.

As noted earlier, the Desk's survey of primary dealers suggests that market participants now anticipate the Committee to announce that it will complete the intended $600 billion expansion of its securities holdings and to retain the "extended period" language. A statement that reduces the size of the asset purchase program, drops the "extended period" language, and makes other changes to the statement along the lines of Alternative C, would consequently be a significant surprise to investors. As a result, longer-term interest rates would likely increase, although the Committee's move to tighten policy sooner than investors currently anticipate might lead to some reduction in inflation compensation. Stock prices would likely decline and the foreign exchange value of the dollar would probably increase.

THE CASE FOR ALTERNATIVE A

Policymakers may see the information that has become available since mid-March as indicating that the outlook for growth is less favorable than they had thought, and that downside risks to the pace of the recovery have increased. If so, they may want to signal that they are prepared to provide additional policy accommodation if it is needed to promote outcomes consistent with the FOMC's dual mandate; in particular, they might state that they are prepared to expand asset purchases and extend them beyond June, as in Alternative A. The Committee might also wish to provide more explicit forward guidance about the likely duration of the period of exceptionally low federal funds rates to help keep longer-term rates from rising rapidly as the recovery progresses.

[2] For background on risk-taking and leverage, see the memos on "Asset Valuations" and "Indicators of Trends in Dealer-Intermediated Financing and Leverage" that were sent to the Committee on April 15, 2011.

The Committee may read the recent data as suggesting that the recovery will not be as strong as seemed likely at the time of the March meeting. Indeed, the slowdown in growth of real private final demand in the first quarter of this year may have raised concerns not only about the strength of the recovery but also about its durability. Moreover, the run-up in energy costs may weigh on household confidence and spending, and also reduce equity prices and firms' willingness to hire, as in the "Weaker Recovery" alternative simulation. In addition, fiscal policy appears likely to be somewhat tighter than previously thought, and spending by state and local governments may be weaker. With longer-term inflation expectations remaining reasonably well anchored, policymakers may want to signal that the door is open to expanding and extending the asset purchase program if growth does not pick up as expected. Even if they continue to see a gradual return to higher levels of resource utilization in a context of price stability as the most likely outcome, policymakers may be inclined to adopt a statement along the lines of Alternative A if they see substantial downside risks to growth and, with short-term rates at their effective lower bound, would want to resume asset purchases promptly if growth does not pick up.

Alternatively, policymakers may expect progress toward their longer-run objectives to be disappointingly slow, even under their modal forecasts, and judge that Alternative A appropriately recognizes the likely need for more policy stimulus before long. Though the unemployment rate has come down noticeably, other measures of labor utilization, including the employment-to-population ratio, have improved only gradually. The optimal control simulations presented in the "Monetary Policy Strategies" section of the Tealbook call for near-term policy easing to speed progress toward the Committee's objectives. Policymakers may interpret these results as indicating that additional stimulus could help contribute to higher levels of employment without allowing an excessive rise in inflation. They also may judge that the risks associated with further expansion of the balance sheet are low relative to the benefits. In particular, they may have greater confidence that the Committee's tools for draining reserves will be effective, in light of the primary dealers' assessment (as indicated in their responses to the Desk's most recent survey) that the Federal Reserve could drain up to $500 billion of excess reserves in just six weeks using reverse repurchase and term deposit operations. Moreover, policymakers may read the Treasury's success in selling MBS as indicating that the Committee will be able to sell such securities without adversely affecting market functioning.[3]

The Committee might also want to communicate more explicitly its conditional expectation for the path of the federal funds rate. By stating that it anticipates that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2012, as in Alternative A, the Committee could help limit investor uncertainty and reduce term premiums, and so lower intermediate and longer-term Treasury yields, thereby providing support for aggregate demand.

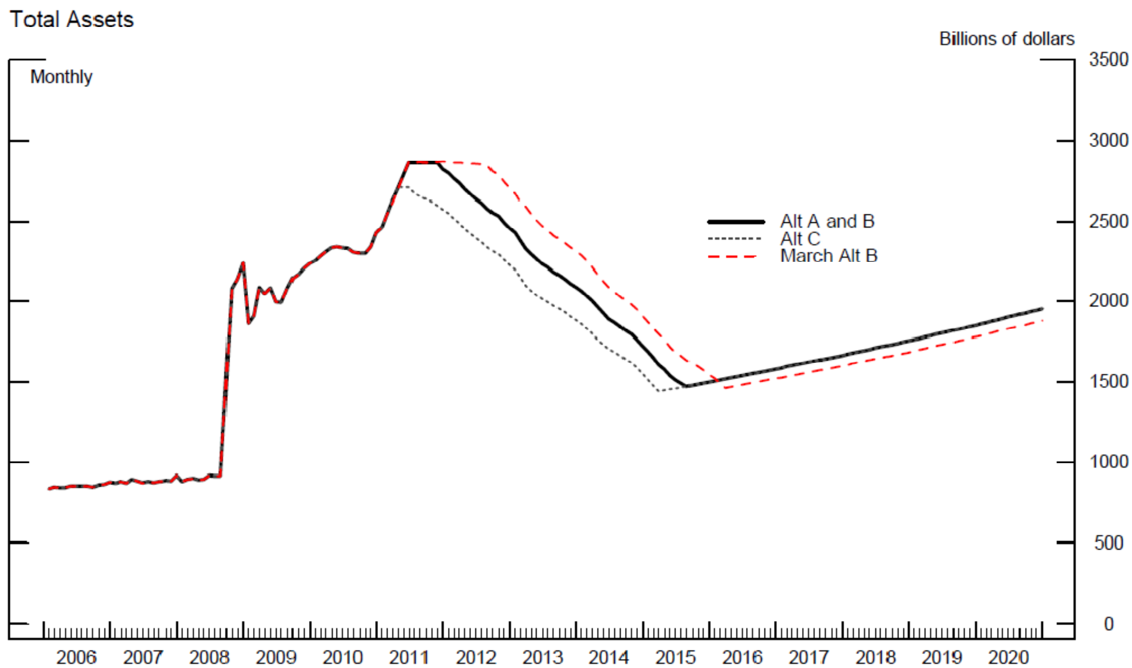
An announcement indicating that the Committee is open to expanding and extending the asset purchase program would surprise market participants. Longer-term yields could decline, although this effect would likely be limited if investors perceived the statement as adding to the upside risks to inflation. Equity prices would probably rise, and the foreign exchange value of the dollar would likely decline.

[3] For further information, see the memo titled "Treasury Sales of Mortgage-Backed Securities" that was sent to the Committee on April 21, 2011.

Alternatives

Long-Run Projections of the Balance Sheet and Monetary Base

The staff has prepared two scenarios for the Federal Reserve's balance sheet that correspond to the policy Alternatives A, B, and C (though the language in the statements differs, Alternatives A and B have the same balance sheet projection). Projections under each scenario are based on assumptions about various components of the balance sheet.[4] Details of these assumptions, as well as projections for each major component of the balance sheet, can be found in Explanatory Note C.



For the scenario that corresponds to Alternatives A and B, we assume that the FOMC completes the intended expansion of its holdings of longer-term securities of $600 billion by the end of the second quarter of 2011. The proceeds from principal repayments from Treasury securities and agency securities continue to be reinvested in Treasury securities until December 2011. Under these assumptions, the size of the balance sheet reaches about $2.9 trillion by the end of the second quarter and remains at about that level until the end of the year. In December, all principal paydowns of securities are assumed to roll off the portfolio, and the balance sheet begins to contract. In March 2013, six months after the assumed rise in the target federal funds rate, the Committee begins to sell its remaining holdings of agency MBS and agency debt securities at a pace that reduces the amount of these securities in the portfolio to zero in five years—that is,

[4] All scenarios assume the same path for the federal funds rate.

by the end of the first quarter of 2018.[5, 6] This action also reduces the size of the balance sheet between 2013 and 2015, though not in a noticeable way as the pace of redemptions is slowing as sales take place.

After reserve balances have reached the assumed $25 billion floor and the U.S. Treasury's Supplementary Financing Account (SFA) has been wound down, the balance sheet begins to expand, with increases in holdings of Treasury securities primarily matching the growth of Federal Reserve capital and notes in circulation.[7] The balance sheet reaches a size of nearly $2 trillion by the end of 2020.[8]

Under Alternative C, the purchases of longer-term Treasury securities are reduced to $450 billion and are assumed to be completed shortly after the upcoming meeting. Additionally, all principal paydowns of securities are allowed to roll off the portfolio beginning in July 2011, as opposed to December 2011, the start date assumed in Alternatives A and B. Sales of agency securities have the same time frame and pace as in Alternatives A and B. The size of the balance sheet peaks around $2.7 trillion when the purchase program ends.

Compared with the March Tealbook baseline projection, total assets in Alternatives A and B are roughly at the same level until December 2011. With the earlier redemption date in this Tealbook, total assets begin to decline in December 2011, and the current projection lies below the March Tealbook projection through 2015. From 2016 and onward, however, when the balance sheet has normalized, the paths for total assets lie a bit above the path in the March Tealbook, reflecting an upward revision in the projection of notes in circulation that is matched by an increase in the size of the SOMA

[5] Given the maturity schedule for agency debt securities, the volume of sales necessary to reduce holdings of these securities to zero over the five year period is minimal.

[6] The tools to drain reserve balances (reverse repurchase agreements and the Term Deposit Facility) are not used 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 term reverse repurchase agreements or term deposits—but would not produce an overall change in the size of the balance sheet.

[7] In the near term, the SFA balance will remain at $5 billion as the level of public debt outstanding that is subject to the federal debt limit approaches the statutory debt ceiling. We assume that once the debt ceiling is raised, the SFA is increased back to $200 billion by September 2011.

[8] The composition of Federal Reserve assets in these projections differs notably at times from historical patterns. Prior to August 2007, U.S. Treasury securities made up 100 percent of the domestic securities portfolio. By contrast, Treasury securities were around 56 percent of the domestic securities portfolio at the end of March 2011. By the end of the first quarter of 2018, Treasury securities are forecasted to account for 100 percent of the domestic securities portfolio under all scenarios.

portfolio. On the liability side of the balance sheet, reserve balances are lower than in the previous Tealbook in the near term, largely reflecting the earlier start of rolling securities off the portfolio.

After expanding in 2011, on net, the monetary base is projected to contract through 2015 in Alternatives A and B, reflecting the decline in Federal Reserve assets and the associated downward trend in reserve balances. Alternative C has the monetary base expand slightly in 2015 as the balance sheet begins to expand.

Growth Rates for the Monetary Base

Date	Alternatives A and B	Alternative C	*Memo*: March Tealbook
		Percent, annual rate	
		Monthly	
Jan-11	23.3	23.3	23.3
Feb-11	57.6	57.6	57.6
Mar-11	99.1	99.1	103.4
Apr-11	81.5	83.4	70.9
May-11	56.6	38.9	44.4
Jun-11	31.7	-5.4	35.8
Jul-11	12.8	-13.9	13.0
Aug-11	-20.8	-35.4	-16.4
Sep-11	-49.4	-62.1	-35.7
Oct-11	-19.4	-29.2	-13.2
Nov-11	5.9	-3.7	4.6
Dec-11	-4.1	-6.2	2.7
		Quarterly	
2011 Q1	37.0	37.0	37.5
2011 Q2	75.4	66.7	69.9
2011 Q3	7.1	-16.1	9.3
2011 Q4	-18.9	-28.7	-12.9
2012 Q1	-6.0	-6.6	0.6
2012 Q2	-12.7	-13.8	-1.4
		Annual - Q4 to Q4	
2011	25.9	13.5	27.3
2012	-11.9	-12.5	-4.1
2013	-18.0	-18.8	-17.5
2014	-20.3	-19.8	-20.2
2015	-7.3	3.9	-21.6

Note: Not seasonally adjusted.

DEBT, BANK CREDIT, AND MONEY FORECASTS

Domestic nonfinancial debt is projected to expand at an annual rate of about 5¼ percent in the second quarter of this year, driven by a rapid expansion in federal government debt and a modest rise in private nonfinancial debt. Although federal government debt is expected to reach its statutory limit this quarter, the staff forecast assumes that the limit will be raised in a timely manner. Domestic nonfinancial debt is expected to continue to increase at an annual rate of 5¼ percent, on average, over the next two years, as a slightly slower expansion of federal debt is offset by a gradual acceleration of private nonfinancial debt. Despite low mortgage rates, home mortgage debt is projected to contract further in 2011 and to be about flat in 2012, as house prices are forecasted to continue their decline, housing demand is projected to remain weak, and lending standards are expected to ease only gradually. Consumer credit is projected to post a small gain this quarter and then to gradually accelerate in coming quarters, driven by rising spending on consumer durables. Nonfinancial business debt is expected to increase at a moderate pace over the forecast period, reflecting the ongoing expansion of capital expenditures.

Commercial bank credit is projected to edge down further in the current quarter, as a continued decline in loans is not quite offset by a rise in securities holdings. Over the remainder of the year, the expansion in bank credit is expected to remain constrained by ongoing balance sheet pressures, still-stringent lending standards, and a lack of demand from high-quality borrowers for certain types of loans. In 2012, however, bank credit is projected to accelerate as the effects of these factors gradually abate. Commercial and industrial loans are projected to increase steadily through the forecast period as a result of continued gains in investment outlays and a further gradual easing of banks' lending standards and terms. Commercial real estate loans are expected to contract throughout the forecast period, reflecting persistently weak market fundamentals and elevated charge-offs, but the rate of decline is anticipated to lessen over time. Residential real estate loans on banks' books are projected to decline through 2011 but expand at a modest pace during 2012, with the gains driven by a projected gradual recovery in housing activity and declines in charge-offs. Consumer loans are also projected to contract during the first half of 2011 and then to increase modestly during the remainder of 2011 and 2012, supported by a pickup in consumer spending on durable goods and reduced losses in credit card portfolios. Banks' securities holdings are forecasted to expand at a moderate pace over 2011 and 2012.

The growth rate of M2 is projected to edge down over 2011 and 2012. The deceleration in M2 is based on the view that households will continue to shift their portfolios toward higher-yielding investments outside of M2 throughout this year and into the first half of next year as risks to the economic outlook ease. M2 expands a bit faster in the second half of 2012 as this portfolio reallocation is completed, but growth in M2 is tempered by a rise in the opportunity cost of money associated with the projected firming of monetary policy at that time. Within M2, small time deposits and retail money market funds are projected to decline at a diminishing rate through 2012, while the rise in liquid deposits is expected to moderate from the robust pace seen over 2009 and 2010. Currency is expected to expand at around its long-run average rate over the forecast period.

M2 Growth Rates
(Percent, seasonally adjusted annual rate)

Monthly Growth Rates	**Tealbook Forecast***
Sep-10	6.6
Oct-10	5.5
Nov-10	5.1
Dec-10	4.0
Jan-11	2.7
Feb-11	7.4
Mar-11	3.0
Apr-11	3.2
May-11	3.2
Jun-11	2.5
Jul-11	2.5
Aug-11	1.9
Sep-11	1.9
Quarterly Growth Rates	
2010 Q3	4.5
2010 Q4	5.6
2011 Q1	4.4
2011 Q2	3.6
2011 Q3	2.4
Annual Growth Rates	
2009	5.0
2010	3.2
2011	3.0
2012	2.8

* This forecast is consistent with nominal GDP and interest rates in the Tealbook forecast. Actual data through March 2011; projections thereafter.

DIRECTIVE

The March directive appears below. Drafts for an April directive corresponding to each of the three policy alternatives appear on subsequent pages. The Directives for Alternatives A and B would instruct the Desk to continue purchasing longer-term Treasury securities to implement the intended $600 billion increase in the SOMA's securities holdings by the end of June 2011 while also continuing the current policy of reinvesting principal payments on SOMA securities. The directive for Alternative C calls for an increase in the SOMA's holdings totaling $450 billion, and for continuing the current policy of reinvesting principal payments.

March 2011 FOMC Directive

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, 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 execute purchases of longer-term Treasury securities in order to increase the total face value of domestic securities held in the System Open Market Account to approximately $2.6 trillion by the end of June 2011. The Committee also directs the Desk to reinvest principal payments from agency debt and agency mortgage-backed securities in longer-term Treasury 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.

April 2011 FOMC Directive — Alternative A

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, 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 execute purchases of longer-term Treasury securities in order to increase the total face value of domestic securities held in the System Open Market Account to approximately $2.6 trillion by the end of June 2011. The Committee also directs the Desk to reinvest principal payments from agency debt and agency mortgage-backed securities in longer-term Treasury 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.

April 2011 FOMC Directive — Alternative B

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, 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 execute purchases of longer-term Treasury securities in order to increase the total face value of domestic securities held in the System Open Market Account to approximately $2.6 trillion by the end of June 2011. The Committee also directs the Desk to reinvest principal payments from agency debt and agency mortgage-backed securities in longer-term Treasury 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.

April 2011 FOMC Directive — Alternative C

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, 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 execute purchases of longer-term Treasury securities in order to increase the total face value of domestic securities held in the System Open Market Account to approximately ~~$2.6~~ **$2.5** trillion by **mid-May** 2011. The Committee also directs the Desk to reinvest principal payments from agency debt and agency mortgage-backed securities in longer-term Treasury 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.

Explanatory Notes

A. Measures of the Equilibrium Real Rate

The concepts of the equilibrium real rate reported in the exhibit "Equilibrium Real Federal Funds Rate" are defined as the level of the real federal funds rate that is consistent with output at potential within a specified time horizon. The short-run equilibrium rate is defined as the rate that would close the output gap in twelve quarters given the corresponding model's projection of the economy. The medium-run concept is the value of the real federal funds rate projected to prevail in seven years, under the assumption that monetary policy acts to bring actual and potential output into line in the short run and then keeps them equal thereafter.

Measure	Description
Single-equation Model	The measure of the equilibrium real rate in the single-equation model is based on an estimated aggregate-demand relationship between the current value of the output gap and its lagged values as well as the lagged values of the real federal funds rate.
Small Structural Model	The small-scale model of the economy consists of equations for six variables: the output gap, the equity premium, the federal budget surplus, the trend growth rate of output, the real bond yield, and the real federal funds rate.
EDO Model	Estimates of the equilibrium real rate using EDO—an estimated dynamic-stochastic-general-equilibrium (DSGE) model of the U.S. economy—depend on data for major spending categories, price and wages, and the federal funds rate as well as the model's structure and estimate of the output gap.
FRB/US Model	Estimates of the equilibrium real rate using FRB/US—the staff's large-scale econometric model of the U.S. economy—depend on a very broad array of economic factors, some of which take the form of projected values of the model's exogenous variables.
Tealbook-consistent	Two measures are presented based on the FRB/US and the EDO models. Both models are matched to the extended Tealbook forecast. Model simulations determine the value of the real federal funds rate that closes the output gap conditional on the extended baseline.

Measure	Description
TIPS-based Factor Model	Yields on TIPS (Treasury Inflation-Protected Securities) reflect investors' expectations of the future path of real interest rates. The TIPS-based measure of the equilibrium real rate is constructed using the seven-year-ahead instantaneous real forward rate derived from TIPS yields as of the Tealbook publication date. This forward rate is adjusted to remove estimates of the term and liquidity premiums based on a three-factor, arbitrage-free term-structure model applied to TIPS yields, nominal yields, and inflation.

The actual real federal funds rate is constructed as the difference between the nominal rate and realized inflation, where the nominal rate is measured as the quarterly average of the observed federal funds rate, and realized inflation is given by the log difference between the core PCE price index and its lagged value four quarters earlier. If the upcoming FOMC meeting falls early in the quarter, the lagged inflation measure ends in the last quarter. For the current quarter, the nominal rate is specified as the target federal funds rate on the Tealbook publication date.

Estimates of the real federal funds rate depend on the proxies for expected inflation used. The table below shows estimates of the real federal funds rates using alternative proxies: lagged core PCE inflation, which is used to construct the actual real federal funds rate shown in the table that displays the *r** measures; lagged four-quarter headline PCE inflation; and projected four-quarter headline PCE inflation beginning with the next quarter. The table also displays the Tealbook-consistent FRB/US-based measure of the short-run equilibrium real rate and the average actual real federal funds rate over the next twelve quarters using each of the different proxies for expected inflation.

Proxy used for expected inflation	Actual real federal funds rate (current value)	Tealbook-consistent FRB/US-based measure of the equilibrium real funds rate (current value)	Average actual real funds rate (twelve-quarter average)
Lagged core inflation	-0.7	-1.5	-0.5
Lagged headline inflation	-1.4	-1.8	-0.8
Projected headline inflation	-1.1	-1.6	-0.6

Explanatory Notes

B. Analysis of Policy Paths and Confidence Intervals

RULE SPECIFICATIONS

For the following rules, i_t denotes the federal funds rate for quarter t, while the right-hand-side variables include the staff's projection of trailing four-quarter core PCE inflation (π_t), inflation two and three quarters ahead ($\pi_{t+2|t}$ and $\pi_{t+3|t}$), the output gap in the current period and one quarter ahead ($y_t - y_t^*$ and $y_{t+1|t} - y_{t+1|t}^*$), and the three-quarter-ahead forecast of annual average GDP growth relative to potential ($\Delta^4 y_{t+3|t} - \Delta^4 y_{t+3|t}^*$), and π^* denotes an assumed value of policymakers' long-run inflation objective. The outcome-based and forecast-based rules were estimated using real-time data over the sample 1988:1-2006:4; each specification was chosen using the Bayesian information criterion. Each rule incorporates a 75 basis point shift in the intercept, specified as a sequence of 25 basis point increments during the first three quarters of 1998. The first two simple rules were proposed by Taylor (1993, 1999). The prescriptions of the first-difference rule do not depend on assumptions regarding r^* or the level of the output gap; see Orphanides (2003).

Outcome-based rule	$i_t = 1.20 i_{t-1} - 0.39 i_{t-2} + 0.19[1.17 + 1.73\pi_t$ $+3.66(y_t - y_t^*) - 2.72(y_{t-1} - y_{t-1}^*)]$
Forecast-based rule	$i_t = 1.18 i_{t-1} - 0.38 i_{t-2} + 0.20[0.98 + 1.72\pi_{t+2|t}$ $+2.29(y_{t+1|t} - y_{t+1|t}^*) - 1.37(y_{t-1} - y_{t-1}^*)]$
Taylor (1993) rule	$i_t = 2 + \pi_t + 0.5(\pi_t - \pi^*) + 0.5(y_t - y_t^*)$
Taylor (1999) rule	$i_t = 2 + \pi_t + 0.5(\pi_t - \pi^*) + (y_t - y_t^*)$
First-difference rule	$i_t = i_{t-1} + 0.5(\pi_{t+3|t} - \pi^*) + 0.5(\Delta^4 y_{t+3|t} - \Delta^4 y_{t+3|t}^*)$

FRB/US MODEL SIMULATIONS

Prescriptions from the two empirical rules are computed using dynamic simulations of the FRB/US model, implemented as though the rule were followed starting at this FOMC meeting. The dotted line labeled "Previous Tealbook" is based on the current specification of the policy rule, applied to the previous Tealbook projection. Confidence intervals are based on stochastic simulations of the FRB/US model with shocks drawn from the estimated residuals over 1969-2008.

INFORMATION FROM FINANCIAL MARKETS

The expected funds rate path is based on Eurodollar quotes and implied three-month forward rates from swaps, and the confidence intervals for this path are constructed using prices of interest rate caps.

NEAR-TERM PRESCRIPTIONS OF SIMPLE POLICY RULES

These prescriptions are calculated using Tealbook projections for inflation and the output gap. The first-difference rule, the estimated outcome-based rule, and the estimated forecast-based 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

REFERENCES

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Orphanides, Athanasios (2003). "Historical Monetary Policy Analysis and the Taylor Rule," *Journal of Monetary Economics*, vol. 50 (July), pp. 983–1022.

C. Long-Run Projections of the Balance Sheet and Monetary Base

This explanatory note presents the assumptions underlying the projections provided in the section entitled "Long-Run Projections of the 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 on a monthly frequency from April 2011 to December 2020. 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 31, 2011. The projections for all major asset and liability categories under each scenario are summarized in the tables that follow the bullet points.

The Tealbook projection assumes that the federal funds rate begins to increase in September of 2012, as was the case in the March Tealbook. The balance sheet projections assume that no use of short-term draining tools is necessary to achieve the projected path for the federal funds rate.[1]

ASSETS

Treasury Securities, Agency MBS, and Agency Debt Securities

- The assumptions under Alternatives A and B are
  - Purchases of $600 billion of longer-term Treasury securities between November 2010 and June 2011.
  - Principal payments from Treasury securities continue to be reinvested through November 2011.
  - Principal payments from agency MBS and agency debt securities are reinvested in longer-term Treasury securities through November 2011.[2]
  - All purchases of Treasury securities are executed using a maturity distribution similar to that currently used by the Desk.[3]

[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: Reserve balances would fall as term deposits and reverse repurchase agreements rose. Presumably these draining tools would be wound down as the balance sheet returned to its steady state growth path, so that the projected paths for Treasury securities presented in the Tealbook remain valid.

[2] Projected prepayments of agency MBS reflect interest rates as of April 19, 2011.

[3] Because current and expected near-term interest rates are below the average coupon rate on outstanding Treasury securities, the market value at which these securities are purchased will generally exceed their face value. Reserve balances will increase by the market value, whereas securities holdings as reported in the H.4.1 release will increase by the face value; the implied premiums are recorded as "other assets." These premiums decline gradually from $59 billion at the end of 2012 (2.6 percent of SOMA assets) to $12 billion at the end 2020 (0.6 percent of SOMA assets).

Explanatory Notes

   - Beginning in December 2011, 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 March 2013, 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 the end of the first quarter of 2018.
   - For agency MBS, the rate of prepayment is based on estimates of housing market factors from one of the program's investment managers and interest rate projections from the Tealbook. The projected rate of prepayment is sensitive to these underlying assumptions.

- Under Alternative C, a total of $450 billion in longer-term Treasury securities are purchased, and purchases conclude shortly after the upcoming meeting. Beginning in July 2011, principal repayments of agency securities are no longer reinvested in Treasuries, and all securities roll off the balance sheet as they prepay and mature.
- In the scenarios, a minimum level of $25 billion is set for reserve balances. To maintain reserve balances at this level, first the U.S. Treasury's Supplementary Financing Account (SFA) balance is reduced to zero. After the SFA balance is exhausted, Treasury bills are purchased. Purchases of bills continue until these securities comprise one-third of the Federal Reserve's total Treasury security holdings–about the average level in the period prior to the crisis. Once this level is reached, the Federal Reserve buys notes and bonds in addition to bills to maintain an approximate composition of the portfolio of one-third bills and two-thirds coupon securities.

Liquidity Programs and Credit Facilities

- Loans through the Term Asset-Backed Securities Loan Facility (TALF) peaked at $48 billion in December 2009. Credit extended through this facility declines to zero by the end of 2014, reflecting loan maturities and prepayments.
- The assets held by TALF LLC increase to $1.0 billion by the end of 2011 and remain at this level through 2014 before declining to zero the following year. Assets held by TALF LLC consist of investments of commitment fees collected by the LLC and the U.S. Treasury's initial funding. In this projection, the LLC does not purchase any asset-backed securities received by the Federal Reserve Bank of New York in connection with a decision of a borrower to not repay a TALF loan.
- The assets held by Maiden Lane LLC and Maiden Lane III LLC decline gradually over time. The assets of Maiden Lane II LLC fall to zero by April 2012 as securities are auctioned off through next year.

LIABILITIES AND CAPITAL

- Federal Reserve notes in circulation grow in line with the staff forecast for money stock currency through the last quarter of 2012. Afterwards, Federal Reserve notes in circulation grow at the same rate as nominal GDP, as projected in the extended Tealbook projection.
- The U.S. Treasury's General Account (TGA) follows the staff forecast through September 2011.[4] Then, the TGA slowly drops back to its historical target level of $5 billion by March 2012 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.
- In the near term, the Treasury maintains the SFA balance at the current level of $5 billion in light of debt ceiling constraints. Going forward, under the assumption that Congress raises the debt ceiling by mid-year, the SFA balance returns gradually to $200 billion by September 2011. Later in the projection, the SFA balance is gradually reduced in line with the overall reduction in the size of the balance sheet, and falls to zero by September 2015.
- Federal Reserve capital grows 15 percent per year, in line with the average rate of the past ten years.
- In general, increases in the level of Federal Reserve assets generate higher levels of reserve balances. Increases in the levels of liability items, such as Federal Reserve notes in circulation or the Treasury's general account, 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 Federal Reserve earnings fall short of the amount necessary to cover operating costs, pay dividends, and equate surplus to capital paid-in, a deferred asset will be recorded. This deferred asset is recorded in lieu of reducing the Reserve Bank's capital and is found on the liability side of the balance sheet as "Interest on Federal Reserve notes due to U.S. Treasury." Note that this liability can take negative values when earnings fall short of the expenses listed above. In the projections, however, earnings are always sufficient to cover these expenses.

Explanatory Notes

[4] The staff forecast for end-of-month U.S. Treasury operating cash balances includes forecasts of both the TGA and balances associated with the U.S. Treasury's Tax and Loan program. Because balances associated with the Tax and Loan program are only $2 billion, for the time being, this forecast is a good proxy for the level of TGA balances.

Federal Reserve Balance Sheet
End-of-Year Projections -- Alternatives A & B

Billions of dollars

	Mar 31, 2011	2012	2014	2016	2018	2020
Total assets	2,633	2,463	1,725	1,579	1,752	1,952
Selected assets						
Liquidity programs for financial firms	0	0	0	0	0	0
Primary, secondary, and seasonal credit	0	0	0	0	0	0
Central bank liquidity swaps	0	0	0	0	0	0
Lending through other credit facilities	19	7	0	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	19	7	0	0	0	0
Support for specific institutions	64	38	29	21	9	5
Credit extended to AIG	0	0	0	0	0	0
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC	64	38	29	21	9	5
Securities held outright	2,410	2,280	1,579	1,456	1,649	1,857
U.S. Treasury securities	1,340	1,422	1,051	1,260	1,649	1,857
Agency debt securities	132	77	39	16	0	0
Agency mortgage-backed securities	937	781	489	180	0	0
Special drawing rights certificate account	5	7	7	7	7	7
Net portfolio holdings of TALF LLC	1	1	1	0	0	0
Total other assets	139	137	116	102	94	90
Total liabilities	2,581	2,392	1,632	1,456	1,590	1,737
Selected liabilities						
Federal Reserve notes in circulation	964	1,080	1,219	1,349	1,483	1,631
Reverse repurchase agreements	62	60	60	60	60	60
Deposits with Federal Reserve Banks	1,525	1,234	336	30	30	30
Reserve balances held by depository institutions	1,408	1,029	131	25	25	25
U.S. Treasury, General Account	111	5	5	5	5	5
U.S. Treasury, Supplementary Financing Account	5	200	200	0	0	0
Other balances	0	0	0	0	0	0
Interest on Federal Reserve Notes due to U.S. Treasury	0	0	0	0	0	0
Total capital	53	70	93	123	162	215

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

Explanatory Notes

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

Billions of dollars

	Mar 31, 2011	2012	2014	2016	2018	2020
Total assets	2,633	2,237	1,557	1,579	1,752	1,952
Selected assets						
Liquidity programs for financial firms	0	0	0	0	0	0
Primary, secondary, and seasonal credit	0	0	0	0	0	0
Central bank liquidity swaps	0	0	0	0	0	0
Lending through other credit facilities	19	7	0	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	19	7	0	0	0	0
Support for specific institutions	64	38	29	21	9	5
Credit extended to AIG	0	0	0	0	0	0
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC	64	38	29	21	9	5
Securities held outright	2,410	2,057	1,411	1,454	1,646	1,854
U.S. Treasury securities	1,340	1,199	883	1,257	1,646	1,854
Agency debt securities	132	77	39	16	0	0
Agency mortgage-backed securities	937	781	489	180	0	0
Special drawing rights certificate account	5	7	7	7	7	7
Net portfolio holdings of TALF LLC	1	1	1	0	0	0
Total other assets	139	134	116	104	97	93
Total liabilities	2,581	2,167	1,464	1,456	1,590	1,737
Selected liabilities						
Federal Reserve notes in circulation	964	1,080	1,219	1,349	1,483	1,631
Reverse repurchase agreements	62	60	60	60	60	60
Deposits with Federal Reserve Banks	1,525	1,008	168	30	30	30
Reserve balances held by depository institutions	1,408	803	25	25	25	25
U.S. Treasury, General Account	111	5	5	5	5	5
U.S. Treasury, Supplementary Financing Account	5	200	137	0	0	0
Other balances	0	0	0	0	0	0
Interest on Federal Reserve Notes due to U.S. Treasury	0	0	0	0	0	0
Total capital	53	70	93	123	162	215

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

Explanatory Notes