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

August 5, 2010

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

The exhibit "Equilibrium Real Federal Funds Rate" displays estimates of short-run *r**, defined as the real federal funds rate that, if maintained over time, would return output to its potential in twelve quarters. The Tealbook-consistent measures of short-run *r** for the third quarter are lower than the estimates for that quarter as they stood at the time of the last projection and the estimates for the second quarter that were reported in the June Tealbook.[1] The lower values for these Tealbook-consistent measures reflect the downward revision of output relative to potential through the second quarter as well as the staff's weaker projection of aggregate demand going forward. The EDO model generates a larger decline in the Tealbook-consistent estimate of short-run *r** than the FRB/US model, reflecting the EDO model's lower sensitivity of aggregate demand to movements in short-term interest rates. In contrast, the EDO and FRB/US model-based estimates of short-run *r**, which are generated using each model's own projections rather than the staff outlook, have declined slightly since the previous Tealbook. For EDO, this shift reflects a more modest revision to economic slack than that incorporated into the staff projection. For FRB/US, the revision to the output gap was on par with the change in the staff's estimate, but the effect of this revision on *r** was partly offset by an upward revision to projected economic growth in response to incoming data.[2] The short-run *r** estimate from the small structural model has declined sharply, reflecting an increase in the measure of the equity premium used in that model.[3] The estimate from the single-equation model, which depends solely on the level of the output gap and the lagged real funds rate, has also declined by a substantial amount.

The exhibit "Constrained vs. Unconstrained Monetary Policy" displays the policy prescriptions produced by optimal control simulations of the FRB/US model based on the extended staff baseline projection that incorporates the Federal Reserve's large-scale asset purchases. In these simulations, policymakers are assumed to place equal weight on keeping core PCE inflation close to a 2 percent inflation goal, on keeping unemployment

[1] The effect on *r** of the staff's interpretation of the weaker incoming data more than offsets the increases in short-run *r** arising from the one-quarter shift in the time window used to calculate *r**.

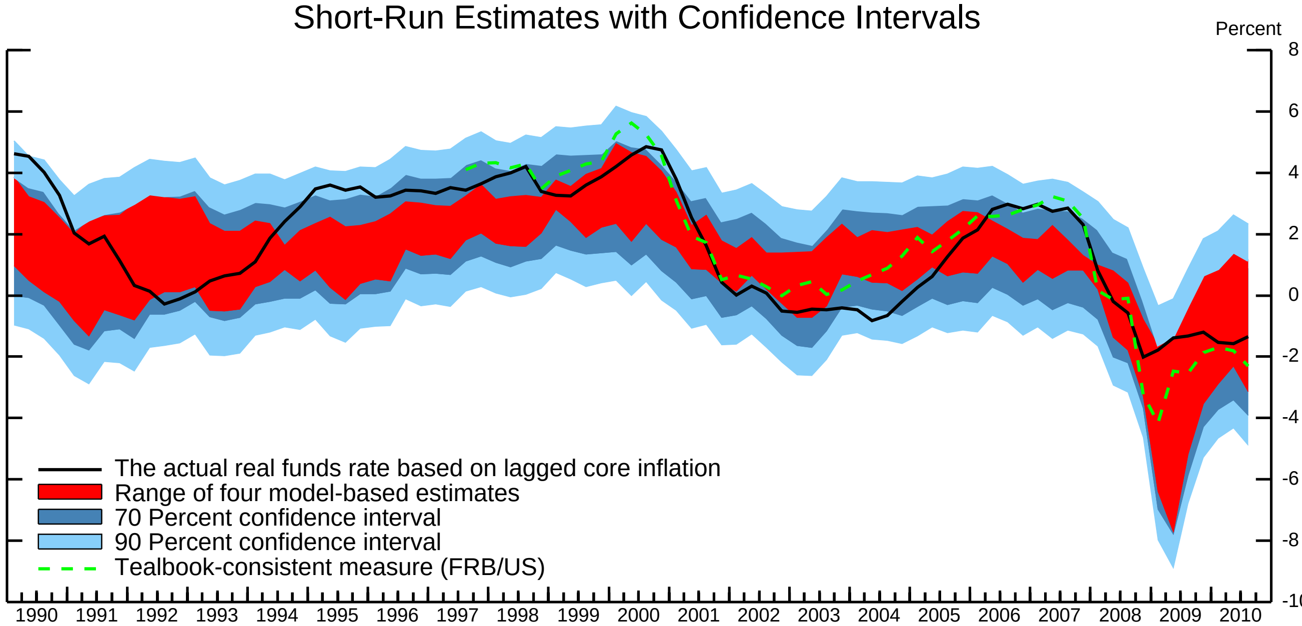
[2] Because EDO and FRB/US have not yet been reestimated using the revised NIPA data, their estimates of *r** have not yet fully responded to the new historical estimates of output, income, and prices.

[3] The small structural model uses a measure of the equity premium constructed from the ratio of NIPA dividends to stock market wealth, potential growth, and the real yield on 10-year Treasury bonds. The recent evolution of this measure has differed somewhat from that of the equity premium measure considered in Tealbook A.

Strategies

Equilibrium Real Federal Funds Rate

Short-Run Estimates with Confidence Intervals

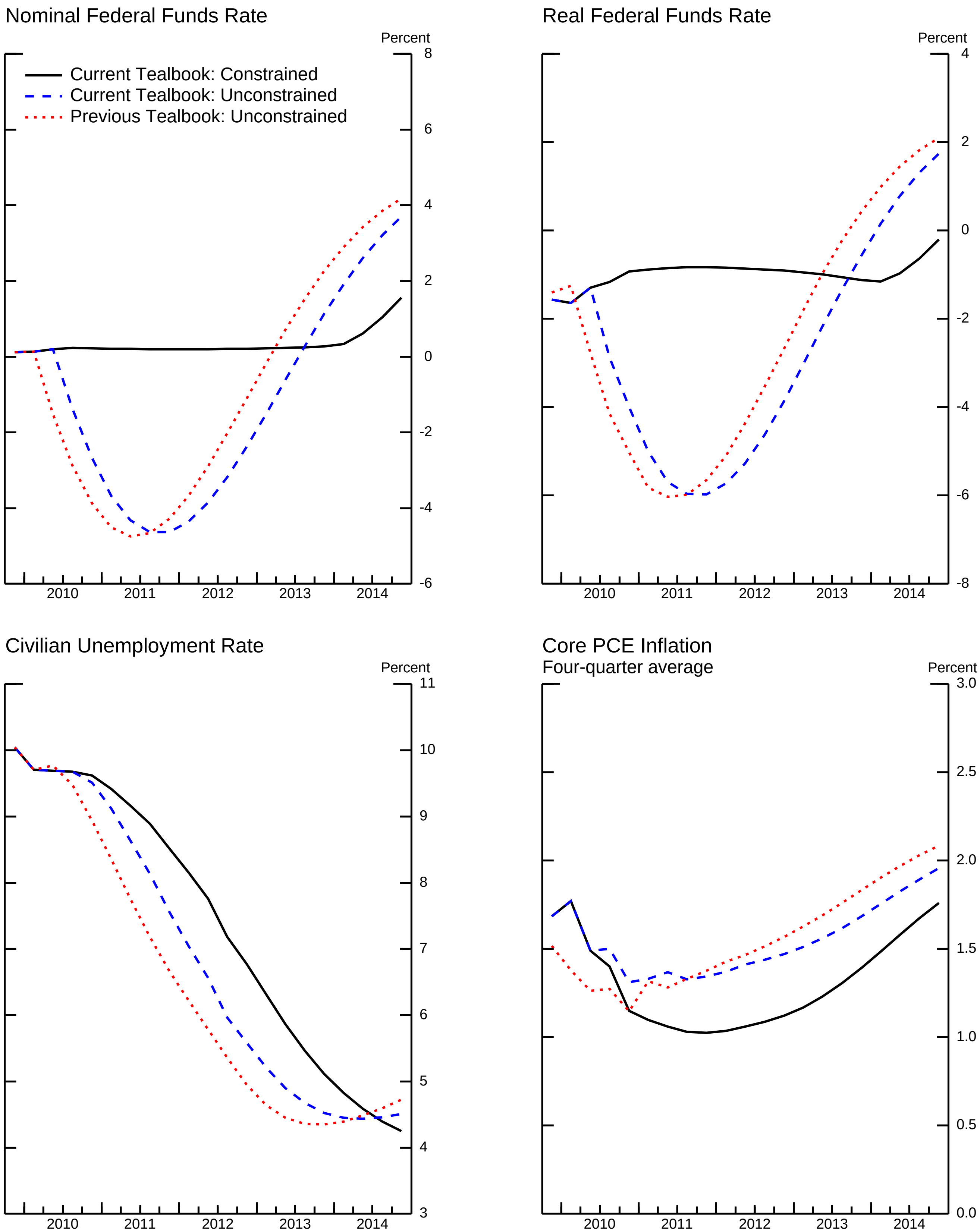


Short-Run and Medium-Run Measures

	Current Tealbook	*Current Quarter Estimate as of Previous Tealbook*	*Previous Tealbook*
Short-Run Measures			
Single-equation model	-2.7	*-1.4*	*-1.4*
Small structural model	-3.1	*-1.1*	*-0.9*
EDO model	1.1	*1.2*	*1.2*
FRB/US model	-2.5	*-2.5*	*-2.6*
Confidence intervals for four model-based estimates			
70 percent confidence interval	-3.9 to 0.9		
90 percent confidence interval	-4.9 to 2.3		
Tealbook-consistent measures			
EDO model	-5.4	*-3.2*	*-4.3*
FRB/US model	-2.3	*-1.5*	*-1.8*
Medium-Run Measures			
Single-equation model	1.0	*1.2*	*1.2*
Small structural model	1.3	*1.5*	*1.6*
Confidence intervals for two model-based estimates			
70 percent confidence interval	0.2 to 2.1		
90 percent confidence interval	-0.5 to 2.6		
TIPS-based factor model	2.0		*2.0*
Memo			
Actual real federal funds rate	-1.4		*-1.0*

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 expectation. For information regarding alternative measures, see Explanatory Note A. Estimates of r* may change at the beginning of a quarter even when there is no shift in the staff outlook 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)

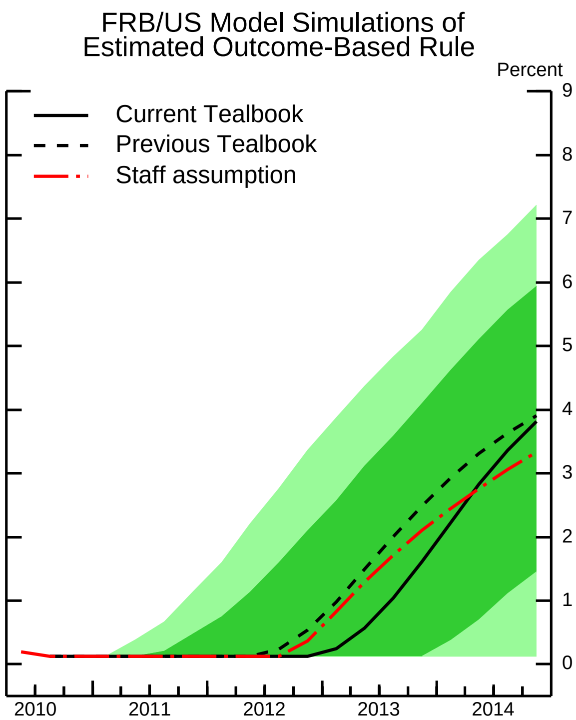


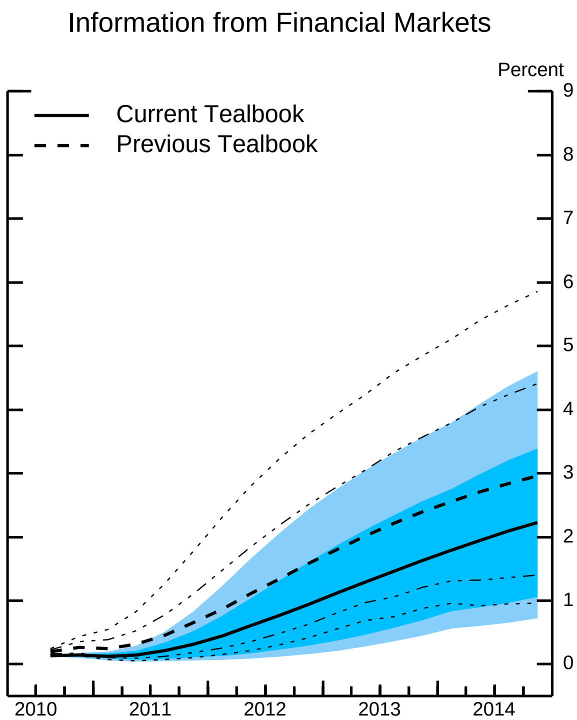
close to the effective NAIRU, and on minimizing changes in the federal funds rate. As has been true for some time, these simulations indicate that the optimal path of policy is severely constrained by the zero lower bound on nominal interest rates. With the lower-bound constraint imposed, the federal funds rate does not begin to rise appreciably until 2014 (one quarter later than in the previous Tealbook), the unemployment rate remains above the staff estimate of the NAIRU (5¼ percent) until late 2013, and inflation stays persistently below its target rate (black solid lines). But if the nominal funds rate could fall below zero, optimal policy would call for the nominal funds rate to decline to around minus 4¾ percent in the third quarter of 2011 before turning positive in the second half of 2013 (blue dashed line). As a result, the unemployment rate would decline to the NAIRU about a year earlier and inflation would be close to 2 percent by 2014. Relative to the June Tealbook, the near-term policy prescriptions of the unconstrained optimal control simulations are little changed apart from a one-quarter outward shift that reflects the rolling forward of the jump-off point for these calculations.[4]

As shown in the exhibit, "The Policy Outlook in an Uncertain Environment," the staff's estimated outcome-based policy rule prescribes keeping the federal funds rate at its effective lower bound through the fourth quarter of 2012, two quarters later than prescribed in the June Tealbook, largely reflecting the downward revisions to the staff's projection of output relative to potential. Over the intermeeting period, the expected federal funds rate path implied by financial market data has shifted down, consistent with the weaker-than-expected incoming data. The upper bounds of the confidence intervals have also moved down, suggesting that financial market participants have reduced the odds they place on outcomes with relatively high funds rates. The lower panel of the exhibit provides near-term prescriptions from simple policy rules. As shown in the left-hand columns, all of the prescriptions remain at the effective lower bound. The right-hand columns show the prescriptions that would be implied by these rules in the absence of the lower bound; all are negative. Most of the unconstrained prescriptions have shifted downward since June due to the wider output gap, but that of the Taylor (1993) rule is roughly unchanged due to the offsetting effects of somewhat higher near-term inflation.

[4] The current funds rate trajectory under the unconstrained monetary policy is slightly lower than a path of the funds rate generated by an optimal-control simulation based on the data used for the June Tealbook and jumping off from the third quarter. This difference reflects the staff's revisions to the paths of the unemployment rate and of output relative to potential.

The Policy Outlook in an Uncertain Environment





Note: In both panels, the dark and light shading represent the 70 and 90 percent confidence intervals respectively. Financial market quotes are as of August 4.

Near-Term Prescriptions of Simple Policy Rules

	Constrained Policy		Unconstrained Policy	
	2010Q3	2010Q4	2010Q3	2010Q4
Taylor (1993) rule	**0.13**	**0.13**	**-0.81**	**-1.23**
Previous Tealbook	*0.13*	*0.13*	*-0.80*	*-1.07*
Taylor (1999) rule	**0.13**	**0.13**	**-4.64**	**-5.04**
Previous Tealbook	*0.13*	*0.13*	*-4.16*	*-4.32*
Estimated outcome-based rule	**0.13**	**0.13**	**-0.60**	**-1.62**
Previous Tealbook	*0.13*	*0.13*	*-0.47*	*-1.28*
Estimated forecast-based rule	**0.13**	**0.13**	**-0.70**	**-1.72**
Previous Tealbook	*0.13*	*0.13*	*-0.46*	*-1.18*
First-difference rule	**0.13**	**0.13**	**-0.17**	**-0.38**
Previous Tealbook	*0.13*	*0.13*	*-0.02*	*-0.13*

Memo

	2010Q3	2010Q4
Staff assumption	0.13	0.13
Fed funds futures	0.16	0.14
Median expectation of primary dealers	0.13	0.13
Blue Chip forecast (August 1, 2010)	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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Monetary Policy Alternatives

This Tealbook presents four policy alternatives—labeled A, B1, B2, and C—for the Committee's consideration. The incoming data have, on balance, been disappointing. Whether the data reflect a temporary "soft patch" or a more persistent slowing in the pace of economic recovery is uncertain. Accordingly, this Tealbook presents two versions of Alternative B: B1 contains a more downbeat view of the incoming data than B2; moreover, B1 incorporates a policy response while B2 does not. As usual, the alternatives offer a range of policy choices and forward guidance. The Committee could mix components from the various alternatives to construct its desired statement.

Under Alternative A, the statement would indicate that information received during recent months has increasingly suggested that the recovery is proceeding at an unsatisfactory pace, that the near-term outlook has weakened, and that inflation is likely to remain, for some time, below levels the Committee considers most consistent with its dual mandate. Accordingly, Alternative A would lower the target range for the federal funds rate to 0 to ⅛ percent and replace the "extended period" language with a more explicit statement that the Committee anticipates keeping the funds rate near zero "until resource utilization and underlying inflation have moved appreciably closer to levels consistent with its longer-term objectives." Consistent with the change in the target range, the Board would cut the remuneration rates on required and excess reserve balances to [10 basis points]. In addition, Alternative A would keep the total face value of the Federal Reserve's holdings of Treasury instruments, agency debt, and agency mortgage-backed securities (MBS) at its current level, but shift the composition of the portfolio by reinvesting principal payments from agency debt and MBS into Treasuries while continuing to roll over maturing Treasury debt.

Under Alternative B1, the statement would note that the pace of recovery has slowed and is likely to be modest in the near term. In addition, the "extended period" language would say that the Committee anticipates exceptionally low levels of the federal funds rate "at least until resource utilization and underlying inflation are clearly moving toward levels consistent with the Committee's longer-term objectives." The Committee would not alter the target range for the funds rate but—as in Alternative A—would reinvest principal payments from agency debt and MBS into Treasury securities and continue to roll over maturing Treasury debt.

Alternatives

Apart from minor updating of the summary of incoming data, the statement under Alternative B2 would be unchanged from the one released after the June meeting. There would be no change in the stance of policy. The Committee would again indicate that it anticipates a moderate recovery.

Under Alternative C, the Committee would maintain the 0 to ¼ percent target range for the federal funds rate but would indicate that a sustainable recovery is under way and that economic conditions are likely to warrant a "low" target range for the federal funds rate "for some time." The Committee also would allow all securities held in the SOMA to roll off as they mature.

A table summarizing the key elements of the alternatives appears on the next page. Complete draft statements are on subsequent pages, followed by the arguments for each alternative.

Table 1: Overview of Alternatives for the August 10 FOMC Statement

	June Statement	August Alternatives			
		A	**B1**	**B2**	**C**
Economic Activity					
Recent Developments	recovery is proceeding	recovery is proceeding at an unsatisfactory pace	pace of recovery has slowed	recovery is proceeding	
Labor Market	is improving gradually; high unemployment; employers remain reluctant to add to payrolls	recovery is proceeding at an unsatisfactory pace; high unemployment; employers remain reluctant to add to payrolls	pace of recovery has slowed; high unemployment; employers remain reluctant to add to payrolls	is improving only slowly; high unemployment; employers remain reluctant to add to payrolls	is improving gradually
Outlook	pace of recovery likely to be moderate for a time	near-term outlook has weakened	pace of recovery likely to be modest in the near term	pace of recovery likely to be moderate for a time	a sustainable economic recovery is under way
Financial Conditions					
Recent Developments	less supportive of economic growth; bank lending has continued to contract in recent months	somewhat less supportive of economic growth in recent months; bank lending has continued to contract	bank lending has continued to contract		somewhat more supportive of economic growth in recent weeks
Inflation					
Recent Developments	substantial slack restraining cost pressures; stable inflation expectations	substantial slack restraining cost pressures; and…			n.a.
		stable inflation expectations			
Outlook	likely to be subdued for some time	likely to remain, for some time, below levels most consistent with dual mandate	likely to be subdued for some time		gradual return to higher levels of resource utilization in a context of price stability
Federal Funds Rate Target and Interest Rates Paid on Reserves (IOR)					
Intermeeting Period	0 to ¼ percent	0 to ⅛ percent; cut IOR to 10 bps	0 to ¼ percent		
Forward Guidance for Federal Funds Rate	economic conditions are likely to warrant exceptionally low levels for an extended period	maintain this range until resource utilization and underlying inflation have moved appreciably closer to longer-term objectives	exceptionally low levels likely to be warranted for an extended period—at least until resource utilization and underlying inflation are clearly moving toward longer-term objectives	economic conditions are likely to warrant exceptionally low levels for an extended period	economic conditions are likely to warrant low levels for some time
Reinvestment of SOMA Assets					
Approach	Interim strategy: allow agency debt and MBS to roll off but reinvest Treasuries	reinvest principal payments from agency debt and MBS into longer-term Treasury securities; continue to roll over maturing Treasury debt		Interim strategy: allow agency debt and MBS to roll off but reinvest Treasuries	allow Treasuries as well as agency debt and MBS to roll off

JUNE FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in April suggests that the economic recovery is proceeding and that the labor market is improving gradually. Household spending is increasing but remains constrained by high unemployment, modest income growth, lower housing wealth, and tight credit. Business spending on equipment and software has risen significantly; however, investment in nonresidential structures continues to be weak and employers remain reluctant to add to payrolls. Housing starts remain at a depressed level. Financial conditions have become less supportive of economic growth on balance, largely reflecting developments abroad. Bank lending has continued to contract in recent months. Nonetheless, the Committee anticipates a gradual return to higher levels of resource utilization in a context of price stability, although the pace of economic recovery is likely to be moderate for a time.

2. Prices of energy and other commodities have declined somewhat in recent months, and underlying inflation has trended lower. With substantial resource slack continuing to restrain cost pressures and longer-term inflation expectations stable, inflation is likely to be subdued for some time.

3. 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 of the federal funds rate for an extended period.

4. The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to promote economic recovery and price stability.

AUGUST FOMC STATEMENT—ALTERNATIVE A

1. Information received ~~since the Federal Open Market Committee met in April~~ **over recent months has increasingly suggested** ~~suggests~~ that the ~~economic~~ recovery **in economic activity** and the labor market is proceeding **at an unsatisfactory pace** ~~and that the labor market is improving gradually~~. Household spending is increasing **only gradually** ~~but~~ **and** remains constrained by high unemployment, modest income growth, lower housing wealth, and tight credit. Business spending on equipment and software ~~has risen significantly~~ **is rising less rapidly than earlier in the year, and the contribution of inventory investment to growth is likely to wane**. ~~; however,~~ Investment in nonresidential structures continues to be weak, and employers remain reluctant to add to payrolls. Housing starts remain at a depressed level. Financial conditions have become **somewhat** less supportive of economic growth **in recent months,** on balance, ~~largely reflecting developments abroad.~~ **and** bank lending has continued to contract ~~in recent months~~. ~~Nonetheless,~~**Although** the Committee **still** anticipates a gradual return to higher levels of resource utilization in a context of price stability, ~~although the pace of economic recovery is likely to be moderate for a time~~ **the near-term outlook for economic activity has weakened**.

2. ~~Prices of energy and other commodities have declined somewhat in recent months, and~~ **Measures of** underlying inflation ~~has~~ **have** trended lower in recent **quarters**. With substantial resource slack continuing to restrain cost pressures and longer-term inflation expectations stable, inflation is likely to ~~be subdued~~ **remain,** for some time**, below levels that the Committee considers most consistent with its mandate to promote maximum employment and stable prices**.

3. **To support the economic recovery,** the Committee ~~will maintain~~ **decided to reduce** the target range for the federal funds rate ~~at~~ **to** 0 to ~~¼~~ **⅛** 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 of the federal funds rate for an extended period~~. **Consistent with this reduction, the Board of Governors cut the remuneration rates on required and excess reserve balances to 10 basis points effective with the reserve maintenance period beginning August 12. The Committee anticipates maintaining this range for the federal funds rate until resource utilization and underlying inflation have moved appreciably closer to levels consistent with its longer-term objectives.**

4. **To provide additional support for the economic recovery, the Committee will maintain the Federal Reserve's holdings of longer-term securities at their current level by reinvesting principal payments from agency debt and agency mortgage-backed securities in Treasury securities. The Committee will continue to roll over the Federal Reserve's holdings of Treasury securities as they mature.**

5. The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to promote economic recovery and price stability.

AUGUST FOMC STATEMENT—ALTERNATIVE B1

1. Information received since the Federal Open Market Committee met in ~~April~~ **June** ~~suggests~~ **indicates** that the ~~economic~~ **pace of** recovery **in output and employment has slowed** ~~is proceeding and that the labor market is improving gradually~~. Household spending is increasing **gradually,** but remains constrained by high unemployment, modest income growth, lower housing wealth, and tight credit. Business spending on equipment and software ~~has risen significantly~~ **is rising**; however, investment in nonresidential structures continues to be weak and employers remain reluctant to add to payrolls. Housing starts remain at a depressed level. ~~Financial conditions have become less supportive of economic growth on balance, largely reflecting developments abroad.~~ Bank lending has continued to contract in recent months. Nonetheless, the Committee anticipates a gradual return to higher levels of resource utilization in a context of price stability, although the pace of economic recovery is likely to be ~~moderate for a time~~ **modest in the near term**.

2. ~~Prices of energy and other commodities have declined somewhat in recent months, and~~ **Measures of** underlying inflation ~~has~~ **have** trended lower in recent **quarters**~~.~~ and, with substantial resource slack continuing to restrain cost pressures and longer-term inflation expectations stable, inflation is likely to be subdued for some time.

3. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and ~~continues to~~ anticipates that**, with inflation expectations stable,** ~~economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant~~ exceptionally low levels of the federal funds rate are likely to **be warranted** for an extended period**—at least until resource utilization and underlying inflation are clearly moving toward levels consistent with the Committee's longer-term objectives**.

4. **To help support a more timely return to those objectives, the Committee will maintain the Federal Reserve's holdings of longer-term securities at their current level by reinvesting principal payments from agency debt and agency mortgage-backed securities in Treasury securities. The Committee will continue to roll over the Federal Reserve's holdings of Treasury securities as they mature.**

5. The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to promote economic recovery and price stability.

AUGUST FOMC STATEMENT—ALTERNATIVE B2

1. Information received since the Federal Open Market Committee met in ~~April~~ **June** suggests that the economic recovery is proceeding ~~and~~ **but** that the labor market is improving ~~gradually~~ **only slowly**. Household spending is increasing **gradually,** but remains constrained by high unemployment, modest income growth, lower housing wealth, and tight credit. Business spending on equipment and software has risen significantly; however, investment in nonresidential structures continues to be weak and employers remain reluctant to add to payrolls. Housing starts remain at a depressed level. ~~Financial conditions have become less supportive of economic growth on balance, largely reflecting developments abroad.~~ Bank lending has continued to contract ~~in recent months~~**, though less rapidly of late**. The Committee anticipates a gradual return to higher levels of resource utilization in a context of price stability, although the pace of economic recovery is likely to be moderate for a time.

2. ~~Prices of energy and other commodities have declined somewhat in recent months, and~~ **Measures of** underlying inflation ~~has~~ **have** trended lower in recent **quarters**~~.~~ and, with substantial resource slack continuing to restrain cost pressures and longer-term inflation expectations stable, inflation is likely to be subdued for some time.

3. 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 of the federal funds rate for an extended period.

4. The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to promote economic recovery and price stability.

Alternatives

AUGUST FOMC STATEMENT—ALTERNATIVE C

1. Information received since the Federal Open Market Committee met in ~~April~~ **June** suggests that the economic recovery is proceeding and that the labor market is improving gradually. Household spending is increasing **and** ~~but remains constrained by high unemployment, modest income growth, lower housing wealth, and tight credit.~~ business spending on equipment and software ~~has risen significantly~~ **continues to advance** ~~however, investment in nonresidential structures continues to be weak and employers remain reluctant to add to payrolls~~. Financial conditions have become ~~less~~ **somewhat more** supportive of economic growth ~~on balance~~ **in recent weeks**~~, largely reflecting developments abroad. Bank lending has continued to contract in recent months~~. **Though** underlying inflation has trended lower, longer-term inflation expectations **have remained** stable. The Committee **believes that a sustainable economic recovery is under way and** ~~Nonetheless,~~ anticipates a gradual return to higher levels of resource utilization in a context of price stability~~, although the pace of economic recovery is likely to be moderate for a time~~.

2. ~~Prices of energy and other commodities have declined somewhat in recent months, and underlying inflation has trended lower. With substantial resource slack continuing to restrain cost pressures and longer-term inflation expectations stable, inflation is likely to be subdued for some time.~~

2. The Committee ~~will~~ **decided to** maintain the target range for the federal funds rate at 0 to ¼ percent and ~~continues to~~ anticipates that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant ~~exceptionally~~ low levels of the federal funds rate for ~~an extended period~~ **some time**. **The Committee will continue its approach of not reinvesting payments of principal on mortgage-backed securities and maturing agency debt held by the System Open Market Account. As a further step toward reducing the size of the Federal Reserve's balance sheet and the level of reserves in the banking system, on [September 1] the Committee will stop reinvesting the proceeds of maturing Treasury securities.** The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to promote economic recovery and price stability.

THE CASE FOR ALTERNATIVE B2

The Committee may see the information on economic activity and employment received during the intermeeting period as indicating a temporary "soft patch" rather than a more persistent slowing in the growth of aggregate demand that would call for additional policy stimulus. Members may continue to anticipate that the current policy stance will promote a gradual return to full employment with underlying inflation rising, in future years, toward the level they see as most consistent with the dual mandate. Moreover, they may judge the anticipated trajectory for the economy as the best that can be achieved under current circumstances, absent policy actions that they see as likely to prove too costly. If so, members might decide to maintain the existing target range for the federal funds rate, reiterate that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period, and continue current practices with respect to reinvestment of principal from securities in the System Open Market Account (SOMA), as in Alternative B2.[1]

The staff and many private-sector forecasters have read the recent data as warranting some downward revision to projections of near-term growth in output and employment but continue to forecast a pickup in the pace of recovery next year. If Committee participants agree with this view, they may consider it appropriate to make no change to either the target range or forward guidance for the funds rate. FOMC statements have, since last November, indicated that economic conditions—particularly rates of resource utilization, inflation trends, and inflation expectations—will play a key role in determining how long the Committee will target exceptionally low levels of the federal funds rate. Policymakers may read the sizable drop in money market futures rates during the past two intermeeting periods as indicating that market participants recognize that the period of near-zero rates is likely to be longer than previously anticipated; if so, the Committee may see no need to adjust the extended period language. Given the drop in longer-term rates since the June meeting, members might judge that the additional macroeconomic benefits from pushing short-term rates even closer to zero are unlikely to be large enough to warrant taking the risk of disrupting the functioning of short-term funding markets. Moreover, participants may want to continue the current practice of

[1] Current practice is to reinvest principal from maturing Treasury securities into new Treasury issues, but to not reinvest principal from agency debt and MBS, thus generating a gradual reduction in the size of the SOMA portfolio and a gradual increase in the share of the portfolio that is held in Treasury securities.

allowing agency debt and MBS to roll off in order to make progress in normalizing the size and composition of the balance sheet and reducing the supply of reserve balances.

Although the staff and many outside forecasters have made modest downward revisions to their projections of near-term growth, other interpretations are plausible. On the one hand, the "Virtuous Circle" alternative simulation in the Risks and Uncertainty section of Tealbook A is consistent with another reading of the data: Noise in the recent indicators may be masking the emergence of a strong economic recovery that, supported by accommodative monetary policy and improving financial conditions, eventually will display a mutually reinforcing cycle of higher consumer spending and business investment, greater employment, improved confidence, and increased credit availability. On the other hand, some statistical models take a larger signal from the weak incoming data and predict sluggish growth in output and employment through much of 2011, as in the "Weaker Recovery" alternative simulation. If members see uncertainty about the outlook as being appreciably greater than usual, they may prefer to wait for additional information before adjusting either the current stance of policy or the forward guidance.

The statement proposed under Alternative B2 likely would be somewhat disappointing to market participants. To be sure, the Desk's latest survey of primary dealers—conducted on Friday, July 30—suggested that market participants saw a high probability that the August statement would be quite similar to the one released in June, with only minor revisions to the characterization of economic conditions. The dealers placed low odds on any immediate changes in the Committee's asset-management strategy. Nonetheless, survey respondents saw non-negligible probabilities that policymakers will decide to reinvest principal from MBS, change their forward guidance, or cut the remuneration rate on reserve balances. A statement along the lines of Alternative B2 would lower those probabilities, at least temporarily, and thus likely result in some backup in interest rates, perhaps accompanied by a drop in equity prices and some appreciation in the foreign exchange value of the dollar.

The Case for Alternative B1

If policymakers, like the staff, have marked down their near-term forecasts, they may see unemployment and inflation moving toward values consistent with the dual mandate even more gradually than seemed likely at the time of the June meeting. Committee participants also may see greater downside risks to that outlook. Even if they see the deterioration in the outlook and increase in downside risks as limited to the near term, policymakers may judge that the changes are large enough to warrant some policy response to help keep the recovery on track. If so, the Committee might wish to indicate that the period of near-zero interest rates now appears likely to be longer than members previously anticipated and longer than investors currently seem to expect by stating, as in Alternative B1, that "exceptionally low levels of the federal funds rate are likely to be warranted for an extended period—at least until resource utilization and underlying inflation are clearly moving toward levels consistent with the Committee's longer-term objectives." Members also might decide to keep the Federal Reserve's total holdings of Treasury securities, agency debt, and agency MBS at its current level rather than allowing it to shrink over time. Under this alternative, the Committee would direct the Desk to reinvest all payments of principal on such instruments in longer-term Treasuries.

The steps included in Alternative B1 likely would generate a reduction in intermediate- and longer-term interest rates as market participants revised down their expectations for the path of the federal funds rate over the course of the next year or so and revised up their expectations of the amount of longer-term assets that the Federal Reserve will hold. The changes in statement language and reinvestment policy under this alternative likely would reinforce investors' sense that policymakers have become less focused on preparing to exit from the period of exceptionally accommodative monetary policy and are now more concerned about spurring growth and preventing further disinflation. The Desk's latest survey of primary dealers showed that the dealers saw the first increase in the federal funds rate target as most likely to come in the third quarter of 2011. However, dealers also saw sizable probabilities that the first increase would occur in either of the previous two quarters or in either of the subsequent two quarters. An estimate of market participants' beliefs derived from interest rate derivatives yields similar results. If Committee members see little chance that it will be appropriate to raise the funds rate target before the fall of 2011, then they might wish to bring investors' projections for the funds rate into closer alignment with their own expectations by modifying the forward guidance along the lines suggested in Alternative B1.[2]

The dealer survey indicates that the language of Alternative B1 would come as something of a surprise to market participants and thus could persuade them that the odds on an early increase in the federal funds rate are smaller than they had thought. The

[2] The changes in statement language offered in Alternatives A and B1 are among those discussed in "Potential Enhancements to FOMC Communication," by Gauti Eggerston, Krishna Guha, Andrew Levin, Steve Meyer, and Simon Potter, August 4, 2010

addition of "clearly moving toward" would signal that the Committee would want to see sustained progress toward its long-run objectives before raising rates. Investors likely would notice the words "at least until" and understand that the Committee had retained the option of holding the funds rate quite low even after the data clearly show unemployment and inflation moving in the right direction. The resulting reduction in the perceived probability of an increase in the funds rate during the first half of 2011, even if not accompanied by a change in market participants' modal forecast of the timing of the first increase, likely would generate some decline in medium- and longer-term yields. That decline could, however, be modest if investors thought that a longer period of exceptionally low federal funds rates would be offset by a more rapid increase in the target rate thereafter.

Alternative B1 would also reduce longer-term rates by preventing the gradual decline in the amount of longer-term securities held in the SOMA that will occur if the Committee continues its current policy of not reinvesting principal payments received on agency debt and MBS. The statement for Alternative B1 would say that "the Committee will maintain the Federal Reserve's holdings of longer-term securities at their current level by reinvesting principal payments from agency debt and agency mortgage-backed securities in Treasury securities" and would note that the Committee will continue to roll over its holdings of Treasury securities as they mature. The staff projects that, with no change in reinvestment policy, repayments of principal from MBS and agency debt would reduce SOMA holdings of such securities by approximately $500 billion by the end of 2012.[3] If, instead, the Committee were to announce that principal from MBS and agency debt would be reinvested in longer-term Treasury coupon securities to maintain the SOMA's holdings of longer-term assets at their current level, and if market participants expected that policy to be in place through 2012 and understood its implications for the portfolio, the staff estimates that longer-term rates could fall about 20 basis points. This estimate is quite uncertain and may be overstated, in part because it is based on market reactions to FOMC announcements about asset purchases that were made when financial market functioning was impaired and investors' concerns about the

[3] The staff's current baseline balance sheet projection, which—like previous projections—takes as an input the baseline interest rate assumptions in the Tealbook forecast for the economy, shows a $150 billion larger drop in MBS holdings by the end of 2012 than did the baseline projection in the June Tealbook. The revision reflects the decline in mortgage rates since the last FOMC meeting, which has raised the actual and expected number of refinancings. For a discussion of issues related to reinvesting principal payments from MBS, see "Assessment of the Effects of MBS Paydowns and Reinvestment Options," by Joshua Frost, Jane Ihrig, Jaime Marquez, Jeffrey Moore, and Julie Remache, August 4, 2010.

economic and financial outlook were particularly large. Though the magnitude of the effect is uncertain, the direction is clear: Longer-term interest rates would be expected to decline. Equity prices likely would rise somewhat, and the foreign exchange value of the dollar probably would decline.

THE CASE FOR ALTERNATIVE A

Committee members may see the information that became available during the intermeeting period not only as pointing toward somewhat slower growth this year than they previously had anticipated but also as indicating a significantly higher likelihood of a sharper or more persistent deceleration in economic activity. Alternatively, they may view the incoming data as confirming earlier concerns that the recovery would proceed too slowly. In addition, policymakers may see a growing risk that underlying inflation will remain on a downward trend and that inflation expectations will drift down as well, as in the "Greater Disinflation" alternative simulation in the Tealbook. For any of these reasons, members might find it appropriate to take further action now and to send a strong signal about their future intentions.

Under Alternative A, the Committee would explicitly state its view that the recovery is proceeding at an unsatisfactory pace and that inflation is likely to remain, for some time, below levels the Committee considers consistent with the dual mandate. This language would emphasize that Federal Reserve policymakers are aiming for a pickup in growth and inflation in the medium term. Against that backdrop, the Committee would not only begin reinvesting all principal payments on securities held in the SOMA to prevent a further reduction in the size of the portfolio, it also would lower the target range for the federal funds rate to 0 to ⅛ percent. Moreover, the Committee would state that it anticipates maintaining this new target range "until resource utilization and underlying inflation have moved appreciably closer to levels consistent with its longer-term objectives," thus signaling that it does not expect to raise its target for the federal funds rate quickly once growth strengthens or inflation edges up. To encourage a drop in the effective funds rate consistent with the change in the target range, the Board would cut the interest rates paid on required and excess reserve balances to 10 basis points.[4]

[4] For a discussion of issues associated with reducing the remuneration rate on excess reserves, see "Reducing the IOER Rate: An Analysis of Options," by Chris Burke, Spence Hilton, Ruth Judson, Kurt Lewis, and David Skeie, August 4, 2010.

Even if they do not think that the recent data suggest a significant risk that growth will slow further or that inflation and inflation expectations will drift down, policymakers might judge that further policy stimulus would be desirable to help support a stronger recovery. Moreover, they might conclude that, in light of investors' concerns about fiscal sustainability, there is little scope for increased fiscal stimulus in the United States and that a shift to less expansionary fiscal policy is the more likely outcome; consequently, they may see additional monetary stimulus as warranted.

The staff anticipates that the cuts in the target range and the remuneration rates on reserve balances specified under Alternative A would leave the effective federal funds rate trading in a range of 5 to 10 basis points—about 10 basis points below its recent trading range—with similar reductions in general collateral repo rates and Libor. Reducing money market rates to this range would not, in the staff's view, pose insurmountable problems for the functioning of these markets or for financial institutions.

While a 10 basis point drop in short-term interest rates would not, by itself, provide significant macroeconomic stimulus, the combination of rate cuts and language changes in Alternative A could do so. Indeed, by stating that it anticipates keeping the funds rate near zero until both resource utilization and inflation have moved appreciably closer to levels consistent with its longer-run objectives, the Committee could help prevent a downward drift in expected inflation that would raise short-term real interest rates.

The Desk's recent survey of primary dealers indicates that market participants attach a low probability to an outcome such as that in Alternative A. Investors would be surprised not only by the forceful language but also by the Committee's decision to cut rates. In combination, the components of Alternative A seem likely to generate a meaningful reduction in medium- and longer-term nominal interest rates by reducing investors' expectations of future short-term rates. The drop in longer-term rates would be reinforced by the reduction in term premiums that would result from reinvesting principal payments received on MBS and agency debt (in addition to principal on maturing Treasury securities) held in the SOMA. As noted in the discussion of Alternative B1, the staff estimates that reinvesting the roughly $500 billion of agency debt and MBS principal that is projected to be repaid by the end of 2012 could reduce longer-term yields by about 20 basis points. The decline in longer-term nominal yields might be offset to some extent by an increase in inflation compensation, if investors concluded that sustained monetary stimulus was likely to complicate the eventual exit from the period of exceptionally accommodative monetary policy and so lead to higher inflation. If investors thought that the Committee's adoption of Alternative A would lead to a stronger recovery, equity prices probably would rise. The foreign exchange value of the dollar likely would likely decline.

As noted earlier, the effect on market rates that would result from the change in reinvestment policy under Alternatives A and B2 might well be smaller than the staff estimates. Thus, if members considered it appropriate to respond to evolving economic conditions by providing further monetary stimulus, the Committee could decide to resume large-scale purchases of longer-term assets to expand the SOMA portfolio or take other steps that would remove duration from the market and thus reduce term premiums.[5] However, such steps would increase the Federal Reserve's exposure to the risk of capital losses if market rates were to rise sooner or more sharply than expected and could complicate the eventual exit from highly accommodative monetary policy.

THE CASE FOR ALTERNATIVE C

If policymakers are concerned that prolonging the period of near-zero interest rates could contribute to macroeconomic or financial imbalances, they might wish to indicate that the time for an increase in interest rates is drawing near. Such a step might be particularly appropriate if members see the recent data as most likely indicative of a "soft patch" in the recovery and if they are confident that solidly anchored inflation expectations will prevent a prolonged disinflation and facilitate the return of inflation toward levels seen as most consistent with the dual mandate. In line with such views, the statement under Alternative C would note the Committee's belief that a sustainable economic recovery is under way and signal an approaching increase in rates by changing the Committee's forward guidance to state that the funds rate is likely to remain at low levels for some time. Such a change in the statement language would likely be read as indicating that the Committee's conditional commitment to the current target range no longer extends to future meetings.

Committee participants may have a more positive assessment of the outlook than does the staff, perhaps on the view that the recent weakness in the economic data is largely noise or simply indicates a temporary deceleration. Moreover, members might

[5] The Committee could, for example, sell the shorter-term debt in the SOMA portfolio and buy longer-term Treasury notes and bonds.

think that a large part of the reduction in output and employment during the recession reflects a persistent adverse supply shock rather than a shortfall in demand, as in the "Lower Potential" alternative simulation, and hence judge that there is less resource slack than shown in the staff forecast. If so, policymakers might conclude that there is no need to maintain an exceptionally accommodative stance of monetary policy, particularly if they expect actual inflation to move up toward longer-term expected inflation and see little likelihood of continuing disinflation. Accordingly, policymakers might see a policy of allowing maturing Treasury securities to roll off as important for putting reserve balances on a steeper downward path that will support increased money market interest rates in the not-too-distant future.[6] Thus, the statement for Alternative C would announce such a change in the Committee's portfolio management policy.

An announcement along the lines of the statement under Alternative C would greatly surprise investors. The Desk's most recent survey of primary dealers found that dealers place near-zero odds on the Committee dropping the "extended period" language or adopting a policy of no longer reinvesting maturing Treasury securities at the current meeting. The changes to the statement envisioned under Alternative C would lead market participants to conclude that the Committee was likely to increase its target for the federal funds rate much sooner than had been anticipated and thus would shift the expected funds rate path up. Moreover, the staff estimates that announcing a policy of no longer rolling over maturing Treasury securities could directly increase longer-term interest rates about 10 to 15 basis points.[7] Consequently, interest rates would likely rise across the yield curve, though forward measures of inflation compensation might move down, lessening the rise in longer-term nominal rates, if the statement led investors to further reduce their assessment of the longer-term inflation outlook. Participants might view an upward shift in the yield curve as helpful in reducing the risk of new financial imbalances. Equity prices likely would fall and the dollar probably would appreciate.

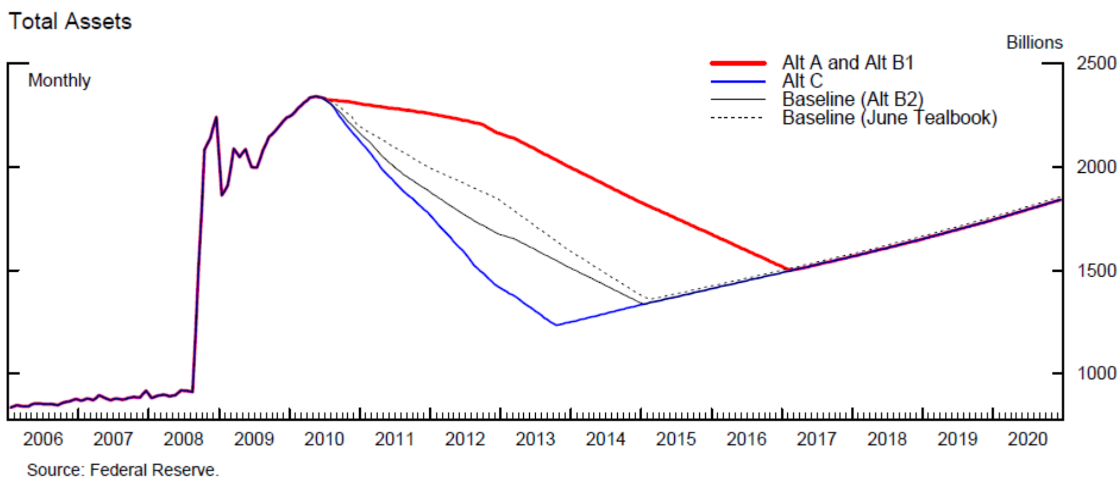
[6] The staff estimates that a policy of allowing all maturing Treasury securities held in the SOMA to roll off would reduce the Federal Reserve's holdings of Treasury bills, notes, and bonds—and the supply of reserve balances—by about $110 billion by the end of 2011 and an additional $160 billion by the end of 2012. For a discussion of issues related to allowing maturing Treasury securities to roll off, see "SOMA Treasury Redemption and Reinvestment Policy," by Michelle Ezer, Joshua Frost, Frank M. Keane, Julie A. Remache, and Brian P. Sack, June 16, 2010.

[7] This estimate, like that of the effect of reinvesting principal from MBS, is uncertain and reflects market reactions to FOMC announcements about asset purchases that were made when financial market functioning was impaired.

LONG-RUN PROJECTIONS OF THE BALANCE SHEET AND MONETARY BASE

The staff have prepared three scenarios for the Federal Reserve's balance sheet that correspond to the policy alternatives presented above: a baseline scenario that corresponds to Alternative B2, a second scenario that corresponds to Alternatives A and B1, and a third scenario that corresponds to Alternative C. Projections under each scenario are based on assumptions about each component of the balance sheet. Details of these assumptions are described in Explanatory Note C.

Under all three scenarios, the balance sheet declines from its May 2010 peak of $2.34 trillion in May 2010 and continues to contract for a number of years as securities mature, prepay, or are sold, or as credit extensions are repaid; however, the rate of contraction differs depending on whether the principal payments from assets are reinvested. After reserve balances hit the assumed $25 billion floor and the U.S. Treasury's supplementary financing account has been drained, the balance sheet begins



to expand as purchases of Treasury securities match the growth of Federal Reserve capital and notes in circulation. In all three scenarios, the balance sheet reaches a size of about $1.8 trillion by the end of 2020.[8]

In the scenario that corresponds to Alternative B2, the FOMC continues to allow agency MBS and agency debt securities to roll off as they mature or are prepaid. In this baseline scenario, we assume that the FOMC begins asset sales in the second quarter of

[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 were about 90 percent of assets, and the Federal Reserve did not hold any agency debt or MBS. By contrast, under the baseline scenario, Treasury securities are projected to account for only around 35 percent of total assets at the end of 2010. However, by the end of 2020, Treasury securities in the SOMA portfolio account for 96 percent of total assets.

2013, six months after the assumed rise in the target federal funds rate.[9] Specifically, beginning at that time, holdings of agency MBS and agency debt securities are reduced over five years and reach zero in the first quarter of 2018.[10] All Treasury securities are rolled over as they mature, continuing current practice.

Under the scenario that corresponds to Alternatives A and B1, the Desk reinvests the principal payments from Treasury coupon instruments, agency MBS, and agency debt securities in Treasury coupon securities to prevent a decline in the System's total holdings of longer-term instruments until the target federal funds rate increases in the fourth quarter of 2012.[11] Despite this reinvestment, total assets decline some over this period as credit extensions are repaid. After the target federal funds rate increases, agency MBS and agency debt holdings are allowed to mature or prepay without reinvestment. As in the baseline scenario, all Treasury securities are rolled over as they mature, and sales of agency MBS and agency debt securities commence in the second quarter of 2013. Also as in the baseline, holdings of agency MBS and agency debt securities are reduced for five years until they fall to zero.

In the scenario that corresponds to Alternative C, agency MBS and agency debt securities are treated as in the baseline scenario. Treasury securities, however, are allowed to run off as they mature beginning in September of 2010.

Under the baseline, total assets are projected to be substantially lower over the next few years than in the baseline projection that was presented in June . This revision is mainly driven by higher forecasted prepayments of agency MBS that, in turn, reflect the lower level of current and projected mortgage rates relative to the previous Tealbook. However, that downward shift is partly offset by the effects of postponing the initiation of asset sales by one quarter due to the change in the staff's assumed path for the federal funds rate. The path of total assets is also projected to be slightly lower later in the decade due to a modest downward revision in the projected path of Federal Reserve notes

[9] The Tealbook projection assumes that the federal funds rate lifts off in the fourth quarter of 2012. The baseline balance sheet projection assumes that the tools to drain reserve balances (reverse repurchase agreements and the term deposit facility) are not used.

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

[11] The reinvestment of proceeds from agency MBS and agency debt may have an impact on the timing of the lift off in the federal funds rate; however, for simplicity, this exercise does not incorporate this potential feedback effect on the path of the federal funds rate.

in circulation and a corresponding shift in the projection of the Federal Reserve's holdings of Treasury securities.[12]

On the liability side of the balance sheet, under the baseline, reserve balances are lower initially than in the previous projection because of the downward revision to the agency MBS forecast path. This downward revision is offset somewhat over the medium term by an increased level of holdings of agency MBS, as implied by the one-quarter delay in the sales of these securities. As a result, the U.S. Treasury's supplementary financing account falls to zero in early 2015—the same timing as in the June Tealbook.

Under the baseline scenario, the monetary base is projected to contract, on net, through 2014; this path largely mirrors that of reserve balances. In particular, Federal Reserve notes in circulation are projected to follow a fairly steady upward trajectory, and hence the monetary base contracts as reserve balances fall. Once reserve balances reach $25 billion and stabilize at that level, the monetary base starts rising roughly in parallel with the amount of Federal Reserve notes in circulation.

[12] Federal Reserve notes in circulation grow in line with the staff forecast for money stock currency over the near term. In the longer term, Federal Reserve notes in circulation grow at the same rate as nominal GDP. The current path for Federal Reserve notes in circulation is lower relative to the previous projection in large part because the staff's forecast for money stock currency for 2012 was incorporated for the first time this round.

Federal Reserve Balance Sheet
End-of-Year Projections -- Baseline Scenario

	Jun 30, 2010	End-of-Year 2010	2012	2014	2016	2018	2020
		$ Billions					
Total assets	2,334	2,177	1,678	1,348	1,485	1,648	1,841
Selected assets:							
Liquidity programs for financial firms	2	0	0	0	0	0	0
Primary, secondary, and seasonal credit	1	0	0	0	0	0	0
Central bank liquidity swaps	1	0	0	0	0	0	0
Lending though other credit facilities	42	41	12	2	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	42	41	12	2	0	0	0
Support for specific institutions	118	102	31	13	5	0	0
Credit extended to AIG	50	49	0	0	0	0	0
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC	67	53	31	13	5	0	0
Securities held outright	2,060	1,929	1,544	1,252	1,406	1,577	1,773
U.S. Treasury securities	777	775	775	775	1,221	1,577	1,773
Agency debt securities	165	147	77	39	16	0	0
Agency mortgage-backed securities	1,118	1,007	692	438	169	0	0
Special drawing rights certificate account	5	5	7	7	7	7	7
Net portfolio holdings of TALF LLC	1	1	1	1	0	0	0
Total other assets	112	103	89	78	72	69	66
Total liabilities	2,278	2,118	1,600	1,245	1,349	1,468	1,603
Selected liabilities:							
Federal Reserve notes in circulation	904	919	981	1,119	1,241	1,360	1,495
Reverse repurchase agreements with foreign official and international accounts	67	67	59	59	59	59	59
Deposits with Federal Reserve Banks	1,263	1,113	546	53	35	35	35
Reserve balances held by depository institutions	972	831	336	25	25	25	25
U.S. Treasury, general account	88	80	5	5	5	5	5
U.S. Treasury, supplementary financing account	200	200	200	18	0	0	0
Total capital	56	59	78	103	136	180	239

Source. Federal Reserve H.4.1 statistical release and staff calculations.

Growth Rates for the Monetary Base

Date	Baseline	Alternative A and B1	Alternative C
	Percent, annual rate		
	Monthly		
Jan-10	-17.8	-17.8	-17.8
Feb-10	72.2	72.2	72.2
Mar-10	-19.7	-19.7	-19.7
Apr-10	-37.6	-37.6	-37.6
May-10	-2.0	-2.0	-2.0
Jun-10	-5.8	-5.8	-5.8
Jul-10	27.1	29.7	27.3
Aug-10	10.4	19.0	10.6
Sep-10	-33.8	-20.6	-40.3
Oct-10	-19.8	-3.9	-27.6
Nov-10	-9.2	7.0	-12.0
Dec-10	-29.4	-14.3	-33.3
	Quarterly		
Q1 2010	14.0	14.0	14.0
Q2 2010	-10.4	-10.4	-10.4
Q3 2010	6.0	10.3	5.4
Q4 2010	-18.1	-3.9	-23.0
	Annual - Q4 to Q4		
2009	41.5	41.5	41.5
2010	-2.3	2.4	-3.7
2011	-13.3	-0.1	-17.1
2012	-13.2	-4.3	-23.2
2013	-11.8	-8.8	-2.8

Note. Not seasonally adjusted.

Alternatives

DEBT, BANK CREDIT, AND MONEY FORECASTS

Domestic nonfinancial sector debt is projected to expand on average at an annual rate of about 4¾ percent during the second half of this year, with private-sector debt rising only slightly and government debt growing rapidly, and is expected to grow 5 percent in 2011. In spite of historically low mortgage rates, sluggish housing demand is projected to weigh heavily on the growth of residential mortgage debt through the first half of 2011. After declining a bit further in the current quarter, consumer credit is expected to pick up late this year and expand at a moderate pace in 2011, supported by a gradual increase in spending on consumer durables. Although standards and terms for bank loans appear to be easing somewhat, lending conditions nonetheless remain tight, and the relatively low projected level of capital spending and firms' very high holdings of liquid assets suggest continued weak demand for funding. Consequently, borrowing by nonfinancial businesses is expected to be tepid, with debt in this sector increasing about 2 percent over the second half of 2010 and at a slightly faster pace next year. Federal government debt is projected to grow at a double-digit rate over the remainder of this year and in 2011.

Commercial bank credit is expected to be about flat in the current quarter, as continued declines in loans are offset by robust growth in securities holdings. After running off for 2010 as a whole, however, bank credit is projected to increase about 3¼ percent in 2011 as modest loan growth resumes and securities continue to expand. Commercial and industrial loans are expected to stop falling next quarter, but growth remains subdued throughout the forecast period. Consumer loans at banks are projected to be about flat in the second half of 2010 and then increase modestly in 2011. By contrast, real estate loans are expected to continue contracting through the first quarter of next year before recovering slowly over the remainder of the forecast period. Poor fundamentals for nonresidential structures, along with elevated charge-offs of troubled loans, should result in continued declines in banks' commercial real estate loan portfolios. Banks' securities holdings are projected to expand at a moderate pace over the forecast period as banks continue to favor safe and liquid investments amid weak loan demand.

M2 is expected to continue to expand at a slower pace than nominal GDP over the forecast period as financial strains and the associated safe-haven demands for M2 assets unwind. Small time deposits and retail money market funds are projected to run off

Growth Rates for M2
(Percent, seasonally adjusted annual rate)

Monthly Growth Rates	Tealbook Forecast*
Jan-10	-7.9
Feb-10	8.7
Mar-10	-3.4
Apr-10	-3.9
May-10	11.6
Jun-10	4.4
Jul-10	-0.8
Aug-10	1.5
Sep-10	1.6
Oct-10	1.5
Nov-10	1.7
Dec-10	1.7
Quarterly Growth Rates	
2010 Q1	0.0
2010 Q2	2.0
2010 Q3	2.5
2010 Q4	1.6
Annual Growth Rates	
2009	5.1
2010	1.5
2011	2.5

* This forecast is consistent with nominal GDP and interest rates in the Tealbook forecast. Actual data through July 2010; projections thereafter.

through 2011, though with a moderating pace of decline. Growth of liquid deposits is expected to slow somewhat further from its robust 2009 pace but remain solid over the forecast period. Currency growth is projected to stay subdued as precautionary demand for U.S. dollars wanes.

DIRECTIVE

The June directive appears below. Drafts for an August directive corresponding to each of the four policy alternatives appear on subsequent pages. The directive for Alternatives A and B1 would instruct the Desk to maintain the SOMA's total holdings of longer-term securities at roughly its current level by reinvesting repayments of principal from agency debt and MBS, and from Treasury coupon securities, in Treasury coupon issues, effective September 1. The directive for Alternative C would instruct the Desk to stop reinvesting the proceeds of maturing Treasury securities, effective September 1.

June 2010 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 engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. 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.

August 2010 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~~ **⅛** percent. **The Committee directs the Desk to purchase longer-term Treasury securities during the intermeeting period to maintain the total face value of the System Open Market Account's holdings of Treasury securities, agency debt, and agency mortgage-backed securities at approximately $2 trillion.** The Committee directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. 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.

August 2010 FOMC Directive — Alternative B1

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 purchase longer-term Treasury securities during the intermeeting period to maintain the total face value of the System Open Market Account's holdings of Treasury securities, agency debt, and agency mortgage-backed securities at approximately $2 trillion.** The Committee directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. 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.

August 2010 FOMC Directive — Alternative B2

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 engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. 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.

June 2010 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 engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. **To gradually reduce the size of the Federal Reserve's balance sheet over time, the Committee directs the Desk to not reinvest the proceeds of maturing Treasury securities held by the System Open Market Account, effective September 1, 2010, and to maintain its practice of not reinvesting the proceeds of maturing agency debt and payments on agency mortgage-backed securities held by the System Open Market Account.** 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.

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Explanatory Notes

A. Measures of the Equilibrium Real Rate

The equilibrium real rate is the real federal funds rate that, if maintained, would be projected to return output to its potential level over time. 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 keep output at potential 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. The TIPS-based factor model measure provides an estimate of market expectations for the real federal funds rate seven years ahead.

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 estimated real federal funds rates based on lagged core PCE inflation, the definition used in the Equilibrium Real Federal Funds Rate chart; lagged four-quarter headline PCE inflation; and projected four-quarter headline PCE inflation beginning with the next quarter. For each estimate of the real rate, the table also provides the Tealbook-consistent FRB/US-based measure of the short-run equilibrium real rate and the projected average real federal funds rate over the next twelve quarters.

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)	Tealbook projected real funds rate (avg. over next twelve quarters)
Lagged core inflation	-1.4	-2.3	-0.7
Lagged headline inflation	-1.8	-2.5	-0.9
Projected headline inflation	-1.1	-2.4	-0.8

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 explanatory 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 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. Because the first-difference rule involves the lagged funds rate, the value labeled "Previous Tealbook" for the current quarter is computed using the actual value of the lagged funds rate, and the one-quarter-ahead prescriptions are based on this rule's prescription for the current quarter.

REFERENCES

Taylor, John B. (1993). "Discretion versus policy rules in practice," *Carnegie-Rochester Conference Series on Public Policy*, vol. 39 (December), pp. 195-214.

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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."

GENERAL ASSUMPTIONS

The balance sheet projections are constructed on a monthly frequency from July 2010 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 June 30, 2010. The projections for all major asset and liability categories under the baseline scenario are summarized in the table that follows the bullet points.

The Tealbook projection assumes that the federal funds rate begins to increase in the fourth quarter of 2012. 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.

ASSETS

Treasury securities, agency MBS, and agency debt

- The baseline scenario, which corresponds to Alternative B2.
    - Prepayments of MBS and maturing agency debt are not reinvested.[1]
    - The Federal Reserve will begin to sell agency MBS and agency debt securities six months after the FOMC begins to increase the federal funds rate. Commencing in the second quarter of 2013, the holdings of these securities are reduced over five years and reach zero in the second quarter of 2018.
    - Due to expected settlement lags and prepayments, agency MBS holdings peak at $1.1 trillion in June 2010, a somewhat lower level than the amount purchased. For agency MBS, the rate of prepayment is based on estimates from one of the program's investment managers. Such estimates are sensitive to the assumptions on which they are predicated.
    - Holdings of agency debt securities peaked at $169 billion in March 2010 and decline slowly thereafter as holdings continue to mature or are sold.
    - Treasury securities held in the SOMA portfolio are reinvested as they mature. The current weighted average maturity of Treasury securities is about seven years.

[1] Prepayments include regular payments of principal and repayments of mortgages.

Explanatory Notes

- Under Alternatives A and B1, in addition to reinvesting Treasury securities as they mature, the Committee reinvests the proceeds received from maturing agency debt and maturing and prepaying agency MBS in Treasury coupon securities to prevent a drop in the System's total holdings of longer-term instruments. Once the target federal funds rate increases in the fourth quarter of 2012, agency MBS and agency debt holdings continue to decline as these assets mature or prepay; however, the proceeds are no longer invested in any instrument. As in the baseline scenario, sales of agency MBS and agency debt securities commence in the second quarter of 2013, and these securities are reduced over five years until the holdings fall to zero.

- Under Alternative C, the Committee allows Treasury securities, agency MBS, and agency debt securities to prepay or to redeem as they mature. As in the baseline scenario, sales of agency MBS and agency debt securities commence in the second quarter of 2013, and these securities are reduced over five years until the holdings fall to zero.

- In all scenarios, a minimum level of $25 billion is set for reserve balances. In all scenarios, to ensure that reserve balances do not fall below this minimum level, first the U.S. Treasury's supplementary financing account (SFA) is reduced. After the SFA declines to zero, Treasury bills are purchased. Purchases of bills continue until these securities comprise one-third of the Federal Reserve's total Treasury holdings. Once this threshold it met, the Federal Reserve buys notes and bonds in addition to bills in order to keep bills at one-third of total Treasury holdings.

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 in the fourth quarter of 2015, reflecting loan maturities and prepayments.

- The assets held by TALF LLC increase to $1 billion by the end of 2011 and remain at that level through December 2014, before declining to zero thereafter. 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 not to repay a TALF loan.

- Central bank liquidity swap lines are projected to hold steady at $1 billion until dropping to zero in November 2010.

- Credit extended to AIG, the sum of the Federal Reserve Bank of New York's extension of revolving credit and its preferred interests in AIA Aurora LLC and ALICO Holdings LLC, increases slightly to $54 billion in November 2010 and then declines to zero by the end of 2012.

- The assets held by Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC are sold over time and reach either zero or a nominal level by the end of 2016.

LIABILITIES AND CAPITAL

- Federal Reserve notes in circulation grow in line with the staff forecast for money stock currency through the end of 2012. From 2013 to the end of the projection period, Federal Reserve notes in circulation grow at the same rate as nominal GDP, as projected in the extended Tealbook forecast.

- The U.S. Treasury's general account (TGA) follows the staff forecast for end-of-month U.S. Treasury operating cash balances through the first quarter of 2011.[2] At that point, the TGA drops back to its historical target level of $5 billion as it is assumed that the Treasury will have implemented a new cash management system that allows it to invest funds in excess of $5 billion. The TGA remains constant at $5 billion over the remainder of the forecast period.

- Balances in the SFA remain at their current level until the SFA is reduced to ensure reserve balance levels do not fall below $25 billion.

- 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 assets of the Federal Reserve generate higher levels of reserve balances. Increases in the levels of other liability items, such as Federal Reserve notes in circulation or the Treasury's general account, like 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.

Explanatory Notes

[2] 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 $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 -- Baseline Scenario

	Jun 30, 2010	2010	2012	2014	2016	2018	2020
		End-of-Year					
		$ Billions					
Total assets	2,334	2,177	1,678	1,348	1,485	1,648	1,841
Selected assets:							
Liquidity programs for financial firms	2	0	0	0	0	0	0
Primary, secondary, and seasonal credit	1	0	0	0	0	0	0
Central bank liquidity swaps	1	0	0	0	0	0	0
Lending though other credit facilities	42	41	12	2	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	42	41	12	2	0	0	0
Support for specific institutions	118	102	31	13	5	0	0
Credit extended to AIG	50	49	0	0	0	0	0
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC	67	53	31	13	5	0	0
Securities held outright	2,060	1,929	1,544	1,252	1,406	1,577	1,773
U.S. Treasury securities	777	775	775	775	1,221	1,577	1,773
Agency debt securities	165	147	77	39	16	0	0
Agency mortgage-backed securities	1,118	1,007	692	438	169	0	0
Special drawing rights certificate account	5	5	7	7	7	7	7
Net portfolio holdings of TALF LLC	1	1	1	1	0	0	0
Total other assets	112	103	89	78	72	69	66
Total liabilities	2,278	2,118	1,600	1,245	1,349	1,468	1,603
Selected liabilities:							
Federal Reserve notes in circulation	904	919	981	1,119	1,241	1,360	1,495
Reverse repurchase agreements with foreign official and international accounts	67	67	59	59	59	59	59
Deposits with Federal Reserve Banks	1,263	1,113	546	53	35	35	35
Reserve balances held by depository institutions	972	831	336	25	25	25	25
U.S. Treasury, general account	88	80	5	5	5	5	5
U.S. Treasury, supplementary financing account	200	200	200	18	0	0	0
Total capital	56	59	78	103	136	180	239

Source. Federal Reserve H.4.1 statistical release and staff calculations.

Explanatory Notes

Abbreviations

ABS	asset-backed securities
AFE	advanced foreign economy
ARRA	American Recovery and Reinvestment Act
BEA	Bureau of Economic Analysis
CDS	credit default swap
C&I	commercial and industrial
CMBS	commercial mortgage-backed securities
CPI	consumer price index
CRE	commercial real estate
DSGE	dynamic stochastic general equilibrium
EC	European Commission
ECB	European Central Bank
ECI	Employment Cost Index
EDO Model	Estimated Dynamic Optimization-Based Model
EEB	extended and emergency unemployment benefits
EME	emerging market economy
EONIA	Euro Overnight Index Average
E&S	equipment and software
EU	European Union
EUC	emergency unemployment compensation
FHFA	Federal Housing Finance Agency
FI	fiscal impetus
FOMC	Federal Open Market Committee; also, the Committee

FRB	Federal Reserve Board
GDP	gross domestic product
GSE	government-sponsored enterprise
HARP	Home Affordable Refinance Plan
HELOC	home equity line of credit
IMF	International Monetary Fund
IP	industrial production
Libor	London interbank offered rate
LTV	loan to value
MBS	mortgage-backed securities
NAIRU	non-accelerating inflation rate of unemployment
NIPA	national income and product accounts
NRS	nonresidential structures
OECD	Organisation for Economic Co-operation and Development
OIS	overnight index swaps
PCE	personal consumption expenditures
SCAP	Supervisory Capital Assessment Program
SEC	Securities and Exchange Commission
SLOOS	Senior Loan Officer Opinion Survey on Bank Lending Practices
SOMA	System Open Market Account
TALF	Term Asset-Backed Securities Loan Facility
TIPS	Treasury inflation-protected securities
VAR	vector autoregression
VAT	value-added tax
WTI	West Texas Intermediate