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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Authorized for Public Release

Class I FOMC – Restricted Controlled (FR)

Report to the FOMC on Economic Conditions and Monetary Policy

Book B

Monetary Policy: Strategies and Alternatives

August 4, 2011

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

Strategies

Monetary Policy Strategies

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—generally declined over the intermeeting period, in some cases substantially. By historical standards, these estimates of the equilibrium real federal funds rate remain low, and most are below the estimated actual real federal funds rate. As shown in the first two columns of the table in the exhibit "Equilibrium Real Federal Funds Rate," the estimates of short-run *r** generated from the FRB/US model and the EDO model that are conditioned on the staff estimates of the output gap (that is, the "Tealbook-consistent" estimates) decreased 110 and 220 basis points, respectively. The downward revisions to *r** reflect the staff's assessment that the economic outlook has weakened, implying a generally more negative output gap projection than in the previous Tealbook.[1] Less dramatically, the estimate of short-run *r** produced from the FRB/US model based on its own projections has declined by 10 basis points, while the estimates from the single-equation and small structural models—which are conditioned on the staff's assessment of recent output gap behavior—have decreased by 70 and 50 basis points respectively. The estimate generated by the EDO model using its own projections has remained unchanged as the effects of the recent weaker data are offset by a marginal strengthening in the model's forecast for output growth.

The staff foresees greater slack in labor and product markets over the next several years than it did in June, while the staff projections for inflation—core and headline—have remained largely unchanged over the medium-term. Consequently, the policy prescriptions from optimal control simulations of the FRB/US model taking account of the underlying economic conditions in the extended staff baseline projection now call for the federal funds rate to remain near zero for appreciably longer than reported in the previous Tealbook.[2] This result is shown in the exhibit "Constrained vs. Unconstrained Monetary Policy."

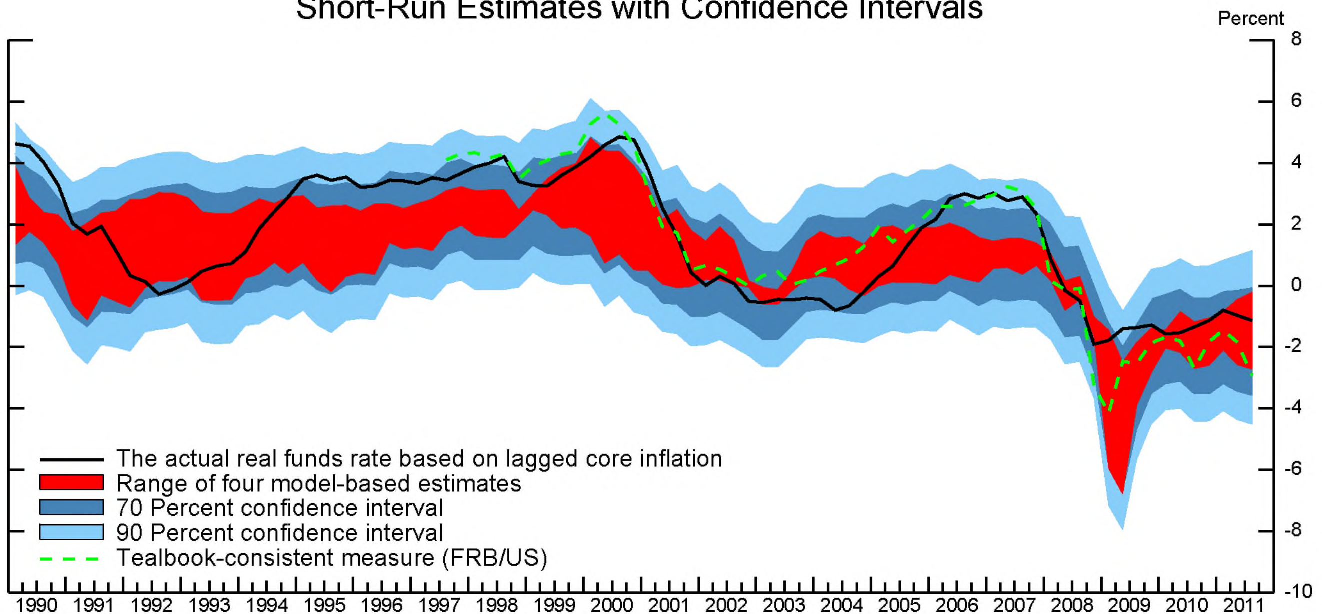
[1] For a discussion of these revisions, see Book A of the Tealbook.

[2] The staff's baseline forecast incorporates the effects of the Federal Reserve's recently completed large-scale asset purchase program, and these same effects have been incorporated into the optimal policy simulations.

Strategies

Equilibrium Real Federal Funds Rate

Short-Run Estimates with Confidence Intervals



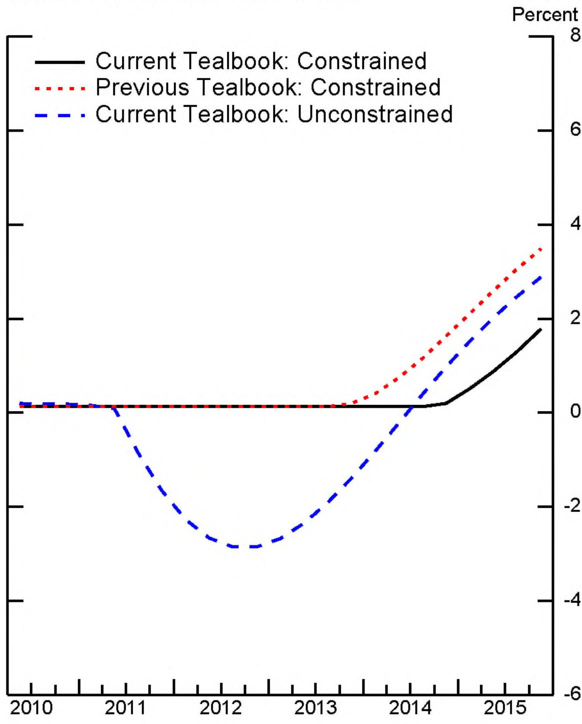
Short-Run and Medium-Run Measures (Percent)

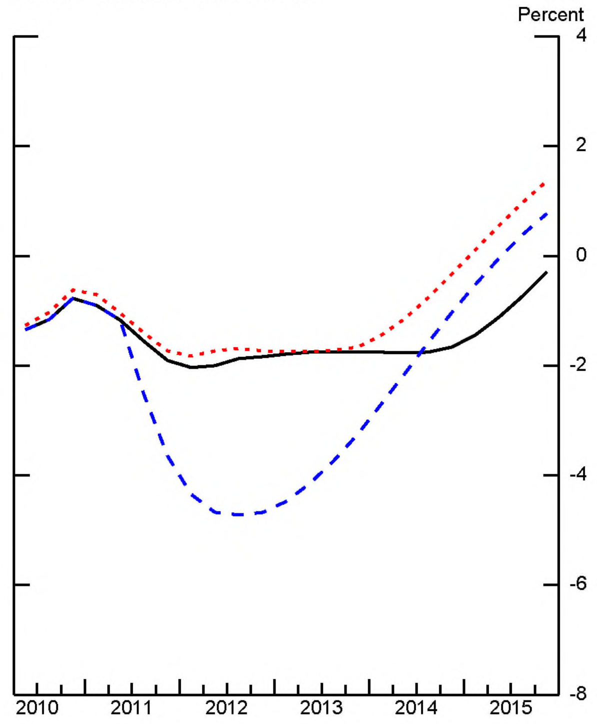
	Current Tealbook	*Current Quarter Estimate as of Previous Tealbook*	*Previous Tealbook*
Short-Run Measures			
Single-equation model	-2.3	*-1.6*	*-1.6*
Small structural model	-2.1	*-1.6*	*-1.1*
EDO model	-0.2	*-0.2*	*-0.4*
FRB/US model	-2.7	*-2.6*	*-2.7*
Confidence intervals for four model-based estimates			
70 percent confidence interval	-3.6 to -0.0		
90 percent confidence interval	-4.5 to 1.1		
Tealbook-consistent measures			
EDO model	-3.3	*-1.1*	*-1.9*
FRB/US model	-2.9	*-1.8*	*-2.2*
Medium-Run Measures			
Single-equation model	1.0	*1.0*	*1.1*
Small structural model	0.8	*1.2*	*1.1*
Confidence intervals for two model-based estimates			
70 percent confidence interval	-0.0 to 1.8		
90 percent confidence interval	-0.6 to 2.4		
TIPS-based factor model	1.8		*1.8*
Memo			
Actual real federal funds rate	-1.1		*-1.0*

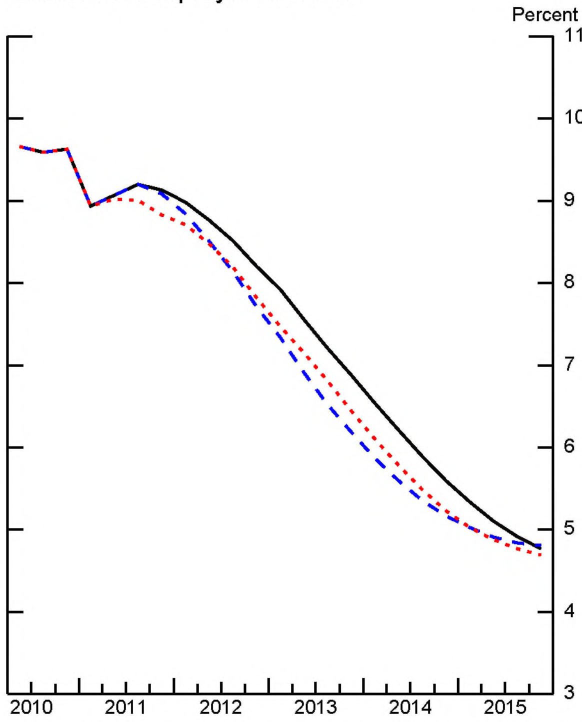
Note: Explanatory Note A provides background information regarding the construction of these measures and confidence intervals. The actual real federal funds rate shown is based on lagged core inflation as a proxy for inflation expectations. For information regarding alternative measures, see Explanatory 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."

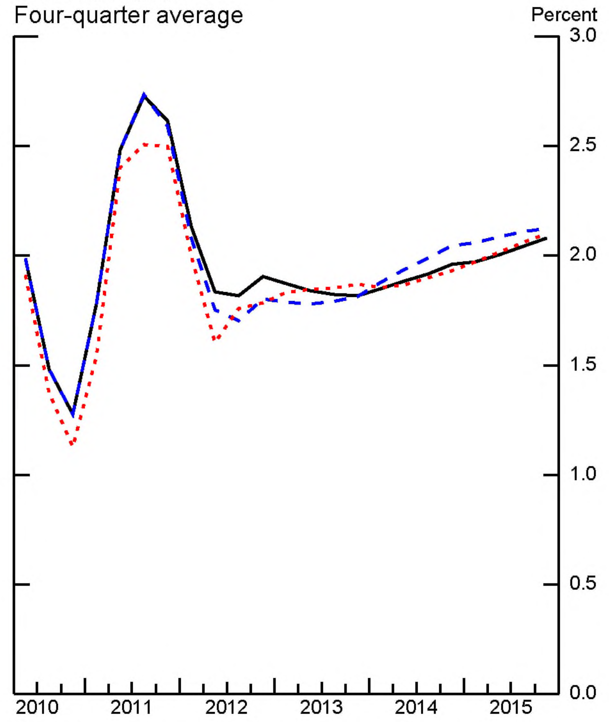
Strategies

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









Note: Starting this Tealbook, the optimal control simulations are derived from a loss function that uses headline inflation instead of core inflation and the lower right panel now displays the behavior of simulated headline inflation. The simulations labeled "Previous Tealbook" are derived from calculations that use the new loss function and the staff outlook as of the June Tealbook.

Beginning with this Tealbook, the optimal control simulations use headline inflation, instead of core inflation, when evaluating policymakers' objective function.[3] As usual, the simulations are computed from the FRB/US model under the assumption that policymakers place equal weight on keeping inflation close to 2 percent, on keeping the unemployment rate close to the effective NAIRU, and on minimizing changes in the federal funds rate. Because the staff's forecasts of headline and core inflation are little different beyond the initial quarters of the simulation, and because the optimal policy responses place only a small weight on the outlook for inflation and unemployment in the initial quarters, the results are little changed compared with the previous procedure.

As has been true for some time, the simulations indicate that the optimal path of the policy rate 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 early 2015, about four quarters later than in the June Tealbook. Reflecting the weaker economic outlook—and despite the additional monetary stimulus provided in this simulation—the path for the unemployment rate is a bit higher for the next couple of years than the one shown in June, and headline inflation stays below the assumed 2 percent objective until the second quarter of 2015 (black solid lines).[4] If the nominal funds rate could fall below zero, the optimal nominal funds rate, according to this exercise, would reach almost negative 2¾ percent in 2012, before returning to positive values in the second half of 2014 (blue dashed line), thereby delivering somewhat more favorable macroeconomic conditions than those depicted in the constrained simulation. In the constrained simulation, policymakers can only provide additional stimulus by raising the funds rate later and more moderately once the economy recovers. In this Tealbook, the constrained simulation raises the funds rate above its lower bound about two quarters

[3] To conform with the change in the simulation procedure, the simulations labeled "Previous Tealbook" in the exhibit are derived from calculations that employ the new loss function but are conditioned on the staff outlook in June. On the other hand, the real federal funds rate paths displayed in the upper right panel of the exhibit continue to be calculated as the difference between the (nominal) federal funds rate and a four-quarter moving average of core PCE inflation, because the latter provides a less volatile measure of inflation expectations than would be the case using headline inflation. (An alternative approach would be to define the real funds rate using *projections* of headline inflation, but doing so would make it difficult to compare the results in this exhibit with measures of the real rate reported elsewhere.)

[4] As in June, the unemployment rate remains above the staff's estimate of the effective NAIRU until the end of 2014 in the constrained optimal control simulation. The staff's estimate of the effective NAIRU falls from 6½ percent in the current quarter 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 gradually improves.

later than in the unconstrained case, and the funds rate stays about 1 percentage point lower in the following four quarters.[5]

As shown in the exhibit "Policy Rules and Market-Based Expectations for the Federal Funds Rate," the expected funds rate implied by the estimated outcome-based policy rule moves appreciably above its effective lower bound in the fourth quarter of 2013, about three quarters later than in the previous Tealbook.[6] In addition, the rule prescribes a considerably lower path for the policy rate in 2013 and 2014 than in the June Tealbook, reflecting the staff's revised projections for the output gap and real GDP growth.

As shown to the right, information from financial markets suggests that investors' expectations for the path of the federal funds rate also have shifted down noticeably since the last Tealbook. The expected path for the federal funds implied by futures and swap quotes moves above the current target range by mid-2013, quite a bit later than in the June Tealbook. Thereafter, the funds rate rises gradually toward 1¼ percent by the end of 2014, about 65 basis points lower than in the previous Tealbook.

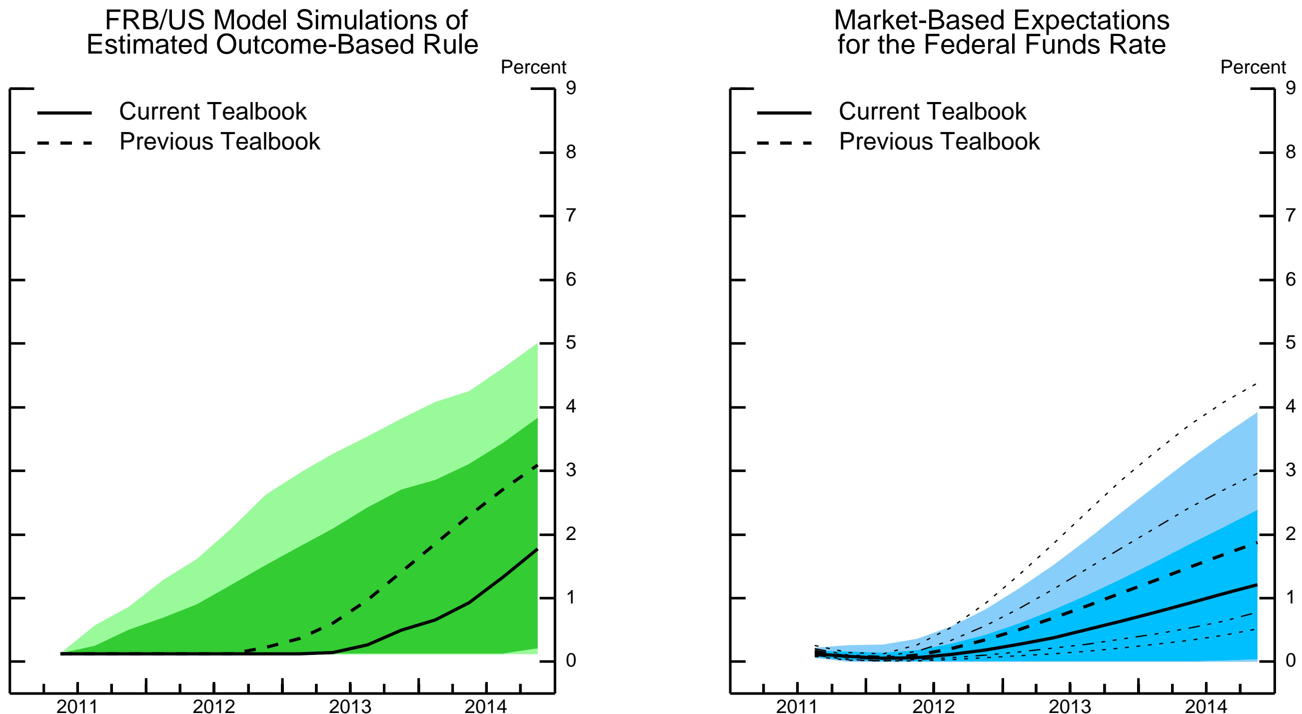
The lower panel of the exhibit provides near-term prescriptions from simple policy rules.[7] As shown in the left-hand columns, prescriptions for the federal funds rate from most of the rules remain at or near the effective lower bound. The right-hand columns display the prescriptions that would arise from these rules in the absence of the lower-bound constraint. Reflecting the widening in the staff's output gap forecasts, all rules prescribe a lower funds rate than in June, and most of the unconstrained prescriptions take values that are below the effective lower bound. Except for the Taylor (1993) rule—which places relatively less weight on the output gap—and the first-difference rule—which responds to the staff's projections for inflation and the *change* in the output gap without regard for the still-elevated level of slack—all unconstrained prescriptions are

[5] Both simulations assume that policymakers credibly commit to a specific policy rate path extending many years into the future, conditional on underlying economic conditions unfolding as expected.

[6] This rule is used to set the longer-run baseline path for the federal funds rate in the Tealbook forecast.

[7] In contrast to the optimal control simulations, which now use headline inflation in the policymakers' objective function, the policy rule prescriptions continue to use core inflation as the measure of inflation. This choice of rule specification was made in light of the tendency for current and near-term core inflation rates to outperform headline inflation rates as predictors of the medium-term behavior of headline inflation. Thus, the use of headline inflation in the optimal control simulations and of core inflation in the policy rules are both consistent with the notion that policymakers are concerned with the medium-term behavior of headline inflation.

Policy Rules and Market-Based Expectations for the Federal Funds Rate



Note: The staff baseline projection for the federal funds rate is derived from the outcome-based policy rule shown in the top-left panel. The top-right panel depicts the mean path and confidence intervals of future federal funds rates derived from market quotes as of August 3. In both panels, dark and light shadings represent the 70 and 90 percent confidence intervals respectively. Explanatory Note B provides further background information.

Near-Term Prescriptions of Simple Policy Rules

	Constrained Policy		Unconstrained Policy	
	2011Q3	2011Q4	2011Q3	2011Q4
Taylor (1993) rule	**0.36**	**0.76**	**0.36**	**0.76**
Previous Tealbook	*0.45*	*0.90*	*0.45*	*0.90*
Taylor (1999) rule	**0.13**	**0.13**	**-2.63**	**-2.20**
Previous Tealbook	*0.13*	*0.13*	*-2.25*	*-1.73*
Estimated outcome-based rule	**0.13**	**0.13**	**-0.19**	**-0.47**
Previous Tealbook	*0.13*	*0.13*	*-0.02*	*-0.15*
Estimated forecast-based rule	**0.13**	**0.13**	**-0.15**	**-0.48**
Previous Tealbook	*0.13*	*0.13*	*0.02*	*-0.15*
First-difference rule	**0.17**	**0.22**	**0.17**	**0.22**
Previous Tealbook	*0.31*	*0.46*	*0.31*	*0.46*

Memo	2011Q3	2011Q4
Staff assumption	0.10	0.13
Fed funds futures	0.10	0.09
Median expectation of primary dealers	0.13	0.13
Blue Chip forecast (August 1, 2011)	0.10	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.

below the effective lower bound. Prescriptions from the estimated outcome based rule, the estimated forecast-based rule, and the first-difference rule depend on the lagged federal funds rate, defined as the actual policy rate observed in the previous quarter. If the lagged values used in generating the rule prescriptions had not been constrained by the effective lower bound from becoming negative in 2009 and 2010, the prescriptions from all three rules would take negative values in both the third and fourth quarters of this year.

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Monetary Policy Alternatives

This Tealbook presents three policy alternatives—labeled A, B, and C—for the Committee's consideration. To varying degrees, each of the alternatives acknowledges the weak information on output and employment that was received over the intermeeting period and again attributes part of the softness to the temporary factors mentioned in the June statement. The proposed statements differ somewhat in their treatment of inflation, with Alternatives A and B noting that inflation has moderated of late, while Alternative C says that firms continue to face cost pressures from high energy and import prices. Alternative A states that downside risks to the economic outlook have increased and, with inflation expected to settle at or below mandate-consistent levels, it proposes to increase the amount of policy accommodation. Alternative B differs from the June statement mainly in that the economic outlook has been downgraded and the Committee could decide to signal that additional accommodation is more likely. In contrast, Alternative C indicates that the Committee sees some upside risks to the inflation outlook and suggests that reinvestment could be discontinued soon.

With regard to the stance of policy, Alternatives B and C would make only minor changes relative to the June statement, while Alternative A would announce several steps to ease monetary conditions. Under Alternatives B and C, the Committee would both maintain the existing target range for the federal funds rate and reiterate the "extended period" language. Both of those Alternatives also indicate that the Committee will continue reinvesting principal payments from its securities holdings, though Alternative C would add the qualifier that reinvestment would continue "for the time being." By contrast, under Alternative A, the Committee would indicate that it anticipates maintaining the exceptionally low target range for the federal funds rate at least until mid-2013. The Committee also would announce that, over the next 12 months, the Desk would adjust the composition of Treasury securities in the SOMA portfolio by purchasing $400 billion of long-term Treasury securities—those with remaining maturities ranging from that of the on-the-run 7-year note out to 30 years—and selling $400 billion of securities with a remaining maturity of 3 years or less. Relatedly, reinvestments of principal would henceforth be directed to long-term Treasury securities. Alternative A, and potentially Alternative B, would indicate that the Committee will carefully assess incoming information about the economic outlook and "employ its policy tools as appropriate" in pursuit of its dual mandate. In contrast, Alternative C retains the June

language that the Committee will "act as needed" to best foster maximum employment and price stability.

The draft statement in Alternative B notes that incoming information indicates that economic growth so far this year has been slower than the Committee expected, while observing that the slow pace of recovery appears to reflect, in part, temporary factors. Alternative B again states that investment in equipment and software is expanding, but it characterizes recent indicators as showing that overall labor market conditions remain weak and that household spending has flattened out. In addition, this alternative's assessment of the economic outlook is more downbeat than in the June statement, indicating that the Committee expects a somewhat slower pace of recovery and that unemployment will decline "only gradually." While Alternative B points to the pickup in inflation earlier in the year, it also notes that inflation recently has moderated somewhat, and that longer-term inflation expectations remain stable. Alternative B goes on to say that, as the effects on inflation of past energy and other commodity price increases dissipate further over coming quarters, inflation will likely settle at rates at or below mandate-consistent levels.

The draft statement under Alternative A supports a shift toward increased accommodation by indicating greater concern about recent economic growth and the economic outlook. It notes that economic growth has been "considerably slower" than the Committee had expected, that recent indicators show "deterioration" in the labor market, and that "the unemployment rate has moved up." Further, Alternative A points to the flattening out in household spending and states that the temporary factors noted in the June statement appear to account for "only some" of the recent weakness. The statement also indicates that the Committee now expects that the unemployment rate will decline "only gradually" and highlights that "downside risks to the economic outlook have increased." Alternative A also observes that inflation has moderated recently, and that the Committee anticipates that the factors that boosted inflation earlier in the year will continue to dissipate.

Alternative C places less emphasis than Alternatives A and B on the weak economic data received since the June meeting. The draft statement indicates that economic growth was "modest of late" and that improvement in overall labor market conditions has slowed, but it does not include a downward revision to the description of the economic outlook. Moreover, Alternative C points to the potential for persistent

inflationary pressures. It notes that inflation has picked up this year and cites cost pressures on firms from high commodity and import prices. Further, the statement indicates that the Committee judges the current risks to inflation to be "tilted to the upside."

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.

Table 1: Overview of Alternatives for the August 9 FOMC Statement

Key Components	June Statement	August Alternatives A	August Alternatives B	August Alternatives C
Economic Activity				
Economic Recovery	continuing at a moderate pace, though somewhat more slowly than expected.	economic growth so far this year has been considerably slower than expected	economic growth so far this year has been slower than expected	economic growth has been modest of late
Labor Market	indicators have been weaker than anticipated	indicators suggest deterioration in overall labor market conditions	indicators show weakness in overall labor market conditions	indicators suggest improvement in overall labor market conditions has slowed
Temporary Factors Influencing Recovery	slower pace of the recovery reflects in part factors likely to be temporary	appear to account for only some of the weakness in economic activity	slow pace of recovery appears to reflect, in part, temporary factors	modest pace of recovery appears to reflect in part factors that are proving to be temporary
Household Spending	continues to expand	has flattened out		
Inflation				
Recent Developments	inflation has picked up in recent months;	inflation picked up earlier in the year; more recently, inflation has moderated	inflation picked up earlier in the year; more recently, inflation has moderated somewhat	inflation has picked up this year
	mainly reflecting higher prices for some commodities and imported goods, as well as the supply chain disruptions	mainly reflecting higher prices for some commodities and imported goods, as well as the supply chain disruptions		as firms have faced cost pressures from higher prices for some commodities and imported goods
	longer-term expectations have remained stable	longer-term expectations have remained stable		
Outlook				
Economic Activity	Committee expects the pace of recovery to pick up over coming quarters and the unemployment rate to resume its gradual decline	Committee now expects a somewhat slower pace of recovery over coming quarters and anticipates that the unemployment rate will decline only gradually		Committee expects pace of recovery to pick up over coming quarters and the unemployment rate to resume a gradual decline
		downside risks to the economic outlook have increased	n.a.	
Inflation	will subside as the effects of past commodity price increases dissipate	anticipates that inflation will settle, over coming quarters, at levels at or below those consistent with the Committee's dual mandate as the effects of past commodity price increases dissipate further		anticipates that inflation will subside, over coming quarters, as the effects of past commodity price increases dissipate
	will continue to pay close attention to the evolution of inflation and inflation expectations	n.a.		sees the risks to inflation as tilted to the upside
		will continue to pay close attention to inflation and inflation expectations		

Table 1: Overview of Alternatives for the August 9 FOMC Statement
(*continued*)

Key Components	June Statement	August Alternatives A	August Alternatives B	August Alternatives C
Federal Funds Rate Target Range				
Intermeeting Period	0 to ¼ percent	0 to ¼ percent		
Forward Guidance	exceptionally low levels for an extended period	exceptionally low levels at least through mid-2013	exceptionally low levels for an extended period	
SOMA Portfolio Policy				
Approach	maintain reinvestment policy	purchase $400 billion of Treasury securities with maturities of 7 years to 30 years and sell those with maturities of 3 years or less	n.a.	
		maintain reinvestment policy and use proceeds to purchase only securities with maturities of 7 years to 30 years	maintain reinvestment policy	For the time being, maintain reinvestment policy
Future Policy Action				
Asset Purchases / Holdings	prepared to adjust as appropriate	prepared to adjust further if needed	prepared to adjust as appropriate	
Overall	Will monitor the economic outlook and financial developments and will act as needed	will carefully assess the economic outlook in light of incoming information and will employ its policy tools as appropriate	will carefully assess the economic outlook in light of incoming information and will [act as needed] *or* [employ its policy tools as appropriate]	Will monitor the economic outlook and financial developments and will act as needed

JUNE FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in April indicates that the economic recovery is continuing at a moderate pace, though somewhat more slowly than the Committee had expected. Also, recent labor market indicators have been weaker than anticipated. The slower pace of the recovery reflects in part factors that are likely to be temporary, including the damping effect of higher food and energy prices on consumer purchasing power and spending as well as supply chain disruptions associated with the tragic events in Japan. 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. Inflation has picked up in recent months, mainly reflecting higher prices for some commodities and imported goods, as well as the recent supply chain disruptions. However, longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The unemployment rate remains elevated; however, the Committee expects the pace of recovery to pick up over coming quarters and the unemployment rate to resume its gradual decline toward levels that the Committee judges to be consistent with its dual mandate. Inflation has moved up recently, but the Committee anticipates that inflation will subside to levels at or below those consistent with the Committee's dual mandate as the effects of past energy and other commodity price increases dissipate. However, the Committee will continue to pay close attention to the evolution of inflation and inflation expectations.

3. To promote the ongoing economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to keep the target range for the federal funds rate at 0 to ¼ percent. The Committee continues to anticipate that economic conditions—including low rates of resource utilization and a subdued outlook for inflation over the medium run—are likely to warrant exceptionally low levels for the federal funds rate for an extended period. The Committee will complete its purchases of $600 billion of longer-term Treasury securities by the end of this month and will maintain its existing policy of reinvesting principal payments from its securities holdings. The Committee will regularly review the size and composition of its securities holdings and is prepared to adjust those holdings as appropriate.

4. The Committee will monitor the economic outlook and financial developments and will act as needed to best foster maximum employment and price stability.

AUGUST FOMC STATEMENT—ALTERNATIVE A

1. Information received since the Federal Open Market Committee met in ~~April~~ **June** indicates that ~~the~~ economic **growth so far this year** ~~recovery is continuing at a moderate pace, though somewhat more slowly~~ **has been considerably slower** than the Committee had expected. ~~Also,~~ Recent indicators **continue to suggest a deterioration in overall** labor market **conditions,** ~~have been weaker than anticipated~~ **and the unemployment rate has moved up**. ~~The slower pace of the recovery reflects in part factors that are likely to be temporary, including the damping effect of higher food and energy prices on consumer purchasing power and spending as well as supply chain disruptions associated with the tragic events in Japan.~~ Household spending **has flattened out, investment in nonresidential structures is still weak,** and **the housing sector remains depressed**. **However,** ~~and~~ business investment in equipment and software continue**s** to expand. ~~However, investment in nonresidential structures is still weak, and the housing sector continues to be depressed.~~ **Temporary factors, including the damping effect of higher food and energy prices on consumer purchasing power and spending as well as supply chain disruptions associated with the tragic events in Japan, appear to account for only some of the recent weakness in economic activity.** Inflation ~~has~~ picked up **earlier** in **the year** ~~recent months~~, mainly reflecting higher prices for some commodities and imported goods, as well as the ~~recent~~ supply chain disruptions. **More recently, inflation has moderated as prices of energy and some commodities have declined somewhat from their earlier peaks.** ~~However,~~ Longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. ~~The unemployment rate remains elevated; however,~~ The Committee **now** expects ~~the~~ **a somewhat slower** pace of recovery ~~to pick up~~ over coming quarters and **anticipates that** the unemployment rate ~~to resume its gradual~~ **will** decline **only gradually** toward levels that the Committee judges to be consistent with its dual mandate. **Moreover, downside risks to the economic outlook have increased.** ~~Inflation has moved up recently, but~~ The Committee **also** anticipates that inflation will **settle, over coming quarters, at** ~~subside to~~ levels at or below those consistent with the Committee's dual mandate as the effects of past energy and other commodity price increases dissipate **further**. However, the Committee will continue to pay close attention to the evolution of inflation and inflation expectations.

3. To promote the ongoing economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to keep the target range for the federal funds rate at 0 to ¼ percent. The Committee ~~continues to~~ **currently** anticipate**s** that economic conditions—including low rates of resource utilization and a subdued outlook for inflation over the medium run—are likely to warrant exceptionally low levels for the federal funds rate **at least through mid-2013** ~~for an extended period~~.

4. **In order to provide greater support for the economic recovery, the Committee also decided to adjust the composition of its securities holdings. Over the next 12 months, the Committee will purchase $400 billion of Treasury securities with remaining maturities of 7 years to 30 years and sell an equal amount of Treasury securities with remaining maturities of 3 years or less. Lengthening the average duration of the Federal Reserve's securities portfolio should put downward pressure on longer-term interest rates in private credit markets and thereby support growth in private demand for goods and services.** The Committee **also** will ~~complete its purchases of $600 billion of longer-term Treasury securities by the end of this month and will~~ maintain its ~~existing~~ policy of reinvesting principal payments from its securities holdings **and, going forward, will use the proceeds to purchase only Treasury securities with remaining maturities of 7 years to 30 years**. The Committee will regularly review the size and composition of its securities holdings and is prepared to adjust those holdings **further if needed** ~~as appropriate~~.

5. The Committee will ~~monitor~~ **carefully assess** the economic outlook **in light of incoming information** ~~and financial developments~~ and will **employ its policy tools as appropriate** to best foster maximum employment and price stability.

AUGUST FOMC STATEMENT—ALTERNATIVE B

1. Information received since the Federal Open Market Committee met in ~~April~~ **June** indicates that ~~the~~ economic **growth so far this year** ~~recovery is continuing at a moderate pace, though somewhat more slowly~~ **has been slower** than the Committee had expected. ~~Also,~~ Recent ~~labor market~~ indicators **continue to show weakness in overall labor market conditions,** ~~have been weaker than anticipated~~ **and the unemployment rate remains elevated**. ~~The slower pace of the recovery reflects in part factors that are likely to be temporary, including the damping effect of higher food and energy prices on consumer purchasing power and spending as well as supply chain disruptions associated with the tragic events in Japan.~~ Household spending **has flattened out, investment in nonresidential structures is still weak,** and **the housing sector remains depressed**. **However,** business investment in equipment and software continue**s** to expand. ~~However, investment in nonresidential structures is still weak, and the housing sector continues to be depressed.~~ **The slow pace of the recovery this year appears to reflect, in part, temporary factors, including the damping effect of higher food and energy prices on consumer purchasing power and spending as well as supply chain disruptions associated with the tragic events in Japan.** Inflation ~~has~~ picked up **earlier** in **the year** ~~recent months~~, mainly reflecting higher prices for some commodities and imported goods as well as the ~~recent~~ supply chain disruptions. **More recently, inflation has moderated somewhat, as prices of energy and some commodities have leveled off.** ~~However,~~ Longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. ~~The unemployment rate remains elevated, however;~~ The Committee **now** expects ~~the~~ **a somewhat slower** pace of recovery ~~to pick up~~ over coming quarters and **anticipates that** the unemployment rate ~~to resume its gradual~~ **will** decline **only gradually** toward levels that the Committee judges to be consistent with its dual mandate. ~~Inflation has moved up recently, but~~ The Committee **also** anticipates that inflation will **settle, over coming quarters, at** ~~subside to~~ levels at or below those consistent with the Committee's dual mandate as the effects of past energy and other commodity price increases dissipate **further**. ~~However~~ **Nonetheless**, the Committee will continue to pay close attention to the evolution of inflation and inflation expectations.

3. To promote the ongoing economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to keep the target range for the federal funds rate at 0 to ¼ percent. The Committee continues to anticipate that economic conditions—including low rates of resource utilization and a subdued outlook for inflation over the medium run—are likely to warrant exceptionally low levels for the federal funds rate for an extended period. The Committee **also** ~~will complete its purchases of $600 billion of longer-term Treasury securities by the end of this month and~~ will maintain its existing policy of reinvesting principal payments from its securities holdings. The Committee will regularly review the size and composition of its securities holdings and is prepared to adjust those holdings as appropriate.

4. The Committee will ~~monitor~~ **carefully assess** the economic outlook **in light of incoming information** ~~and financial developments~~ and will **[**act as needed **| employ its policy tools as appropriate]** to best foster maximum employment and price stability.

Alternatives

AUGUST FOMC STATEMENT—ALTERNATIVE C

1. Information received since the Federal Open Market Committee met in ~~April~~ **June** indicates that ~~the~~ economic **growth** ~~recovery~~ **has been modest of late** ~~is continuing at a moderate pace, though somewhat more slowly than the Committee had expected~~. Also, recent ~~labor market~~ indicators **suggest that** ~~have been weaker than anticipated~~ **improvement in overall labor market conditions has slowed**. The ~~slower~~ **modest** pace of the recovery **appears to** reflect~~s~~ in part factors that are ~~likely~~ **proving** to be temporary, including the damping effect of higher food and energy prices on consumer purchasing power and spending as well as supply chain disruptions associated with the tragic events in Japan. ~~Household spending and~~ Business investment in equipment and software continue**s** to expand **despite these shocks**. However, **household spending has flattened out,** investment in nonresidential structures is still weak, and the housing sector continues to be depressed. Inflation has picked up ~~in recent months~~ **this year**, ~~mainly reflecting~~ **as firms have faced cost pressures from** higher prices for some commodities and imported goods~~, as well as the recent supply chain disruptions~~. However, longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. ~~The unemployment rate remains elevated; however,~~ The Committee expects the pace of recovery to pick up over coming quarters and the unemployment rate to resume ~~its~~ **a** gradual decline toward levels that the Committee judges to be consistent with its dual mandate. ~~Inflation has moved up recently, but~~ The Committee anticipates that inflation will subside**, over coming quarters,** to levels at or below those consistent with the Committee's dual mandate as the effects of past energy and other commodity price increases dissipate. However, **the Committee sees the risks to the inflation outlook as tilted to the upside**. The Committee will continue to pay close attention to the evolution of inflation and inflation expectations.

3. To ~~promote the ongoing economic recovery and to~~ help ensure that inflation **in the medium run** ~~, over time,~~ is at levels consistent with its **dual** mandate, **and thereby support progress toward maximum employment,** the Committee decided today to keep the target range for the federal funds rate at 0 to ¼ percent. The Committee continues to anticipate that economic conditions—including low rates of resource utilization and a subdued outlook for inflation over the medium run—are likely to warrant exceptionally low levels for the federal funds rate for an extended period. **For the time being,** the Committee will ~~complete its purchases of $600 billion of longer-term Treasury securities by the end of this month and will~~ maintain its existing policy of reinvesting principal payments from its securities holdings. The Committee will regularly review the size and composition of its securities holdings and is prepared to adjust those holdings as appropriate.

4. The Committee will monitor the economic outlook and financial developments and will act as needed to best foster maximum employment and price stability.

THE CASE FOR ALTERNATIVE B

The Committee may view the information received over the intermeeting period as pointing to weaker economic activity than was expected at the time of the June meeting, and note that inflation has moderated only somewhat. However, members may see the incoming data on production and the pickup in inflation earlier this year as materially reflecting temporary factors. If so, they may continue to expect economic activity to strengthen over the second half of the year and into next year while inflation returns to a subdued pace. Although the Committee may now see the recovery as likely to be more gradual than anticipated at the time of the June meeting, it may see the change as not sufficient to justify a change in the stance of policy—particularly if members judge the level of uncertainty about the outlook to be unusually high—and so choose to leave the stance of policy unchanged at this meeting, as in Alternative B. In that case, members might favor a statement that acknowledged the recent weakness in the data on economic activity—by noting slower-than-expected economic growth over the first half of the year, continued weakness in labor market indicators, and a flattening out of consumer spending—while indicating that inflation has moderated somewhat as the prices of energy and other commodities have leveled off. The statement would then note that the Committee now expects a somewhat slower pace of economic recovery but still anticipates that inflation will settle at or below mandate-consistent levels over coming quarters.

Some Committee members may believe that maintaining the current stance of policy is appropriate even though they see grounds for concern about the outlook for economic activity. Policymakers may see the optimal control simulations presented in the "Monetary Policy Strategies" section of the Tealbook, which continue to call for significant near-term policy easing, as suggesting some benefit from additional monetary policy accommodation. However, participants may also judge that the potential costs of employing nontraditional tools at this time, perhaps by providing more specific forward guidance or adjusting the average maturity of the SOMA portfolio, outweigh the likely benefits. For example, policymakers might be concerned that hardening the forward guidance could make it difficult for the Committee to adjust policy sufficiently rapidly if growth picks up quickly and inflation does not decline as expected once the temporary factors recede. As a result, even policymakers who see the downside risks to the outlook for economic growth as having increased may believe that it is prudent to wait for

additional information bearing on the medium-term outlook for growth and inflation before the Committee takes steps to increase the degree of policy accommodation.

Some Committee members may not be confident that the apparent stabilization of the prices of energy and imported goods over the past few months will prove sufficient to return inflation, over coming quarters, to rates at or below mandate-consistent levels. These members may be uneasy with the elevated level of headline inflation in recent quarters and view the gradual rise in some measures of underlying inflation, including core CPI and core market-based CPI, as possibly presaging a higher level of near-term inflation than would be desirable. However, even if the risk of a continuation of inflation in excess of mandate-consistent levels has increased, members may see that upside risk as countered by greater downside risks to the outlook for growth and employment, leading them to favor a statement along the lines of Alternative B. Alternatively, members may see the weak incoming data on real activity as a reason to postpone a reduction in the degree of policy accommodation unless their inflation concerns are reinforced by additional data on actual and expected inflation over coming quarters.

Given the accumulation of weak data in recent months, policymakers might wish to ensure that the Committee has sufficient flexibility to provide additional accommodation should it become necessary to do so. Members may regard an indication that the Committee is less optimistic about the outlook and stands ready to ease monetary policy appropriately as a prudent reaction to recent economic developments because it could bolster public confidence in the Committee's willingness and ability to act should conditions fail to improve, and so help to strengthen the recovery. Such an indication may be seen as especially important given that the NIPA revisions suggest that momentum going into the second half of the year might be less than the Committee had anticipated at the June meeting. If so, the Committee might choose to modify Alternative B, as noted in the final paragraph of the draft statement, to say that it will "carefully assess the economic outlook in light of incoming information" and will "employ its policy tools as appropriate," rather than "act as needed," in pursuit of its dual mandate.

A statement along the lines of Alternative B would be roughly in line with market expectations. The Desk's recent survey of primary dealers indicated that the dealers expect the Committee to retain the "extended period" language for the funds rate and to maintain its current reinvestment policy, though most felt that the Committee would downgrade the economic outlook. Some expected the Committee to update its view on

the role of temporary factors and to provide guidance about the likelihood of additional policy accommodation as well as the form that it would take. Accordingly, the release of a statement like Alternative B could be seen as suggesting a somewhat less negative assessment of economic conditions than some market participants expect, causing them to reduce their estimates of the odds of additional accommodation. If so, bond yields could increase and the foreign exchange value of the dollar rise. Equity prices would probably decline somewhat. If the statement suggested that the probability of additional policy accommodation in the near term had risen, those effects might be muted.

Alternatives

THE CASE FOR ALTERNATIVE A

Policymakers may view the information received since the June meeting as indicating that additional policy accommodation is needed to promote outcomes consistent with the Federal Reserve's dual mandate, as in Alternative A. The Committee could decide to take one or more of the steps outlined in the draft statement: (1) indicate that the federal funds rate is likely to remain at exceptionally low levels until at least mid-2013; (2) extend the average maturity of the Federal Reserve's holdings of Treasury securities by purchasing $400 billion of securities with remaining maturities of approximately 7 years to 30 years and selling an equal amount of securities with remaining maturities of 3 years or less, and by reinvesting future principal payments only in securities with remaining maturities of 7 years to 30 years; and (3) state that "downside risks to the economic recovery have increased" and that the Committee will continue to assess incoming information and "employ its policy tools as appropriate" to best foster maximum employment and price stability.

Policymakers may regard the information received since the June meeting, including the substantial downward adjustment to first-quarter GDP growth, as confirming that the slow economic recovery over the first half of 2011 extended beyond the identifiable factors that are likely to prove transitory. Participants also may see the weaker growth in disposable personal income as portending protracted weakness in consumer spending, particularly given the persistently low level of consumer confidence. Moreover, the unemployment rate has moved up and the increase in payroll employment over May and June was disappointingly small. In addition, the pace of business investment in equipment and software has slowed noticeably. Against this backdrop, participants may have significantly downgraded their assessment of the medium-run economic outlook, perhaps along the lines of the "More-persistent spending weakness

with supply-side corrosion" alternative simulation. Policymakers may also be concerned about the adverse effects on economic growth and employment of a potential near-term tightening of fiscal policy or of the possible downgrade of the U.S. sovereign credit rating. In addition, the risk of significant dislocations in Europe is still quite elevated, and an adverse outcome could have important implications for the U.S. outlook, as detailed in the "Very severe financial stress in Europe" alternative simulation. As a result, the Committee may judge that an increased degree of monetary policy accommodation is necessary, leading them to favor a statement containing one or more of the elements suggested in Alternative A.

While noting that inflation picked up over the first half of the year to levels above those that the Committee regards as consistent with its mandate, policymakers may nonetheless expect subdued inflation over the medium run. Members might see the most recent data as suggesting that a moderation in inflation is already under way, especially given that energy prices have decreased significantly from their peaks during the spring and that supply chain disruptions are easing. The Committee may also note that both survey and market-based measures of longer-term inflation expectations have changed little, on balance, over the course of the year. Moreover, some participants may now anticipate more slack in labor markets over coming quarters, and so may expect greater restraint on wages and prices. Thus, they may now view the main risk to inflation over the projection period as being to the downside, with a significant danger that inflation will fall below mandate-consistent levels over coming quarters and remain there for a substantial period. If so, policymakers may conclude that both the employment and price stability components of the dual mandate justify a statement along the lines of Alternative A. Indeed, given the very high unemployment rate, some participants might judge that it would be prudent to tolerate inflation that temporarily exceeded the mandate-consistent level for a time, so long as longer-term inflation expectations remained stable.

Against this backdrop, the Committee may wish to provide additional support for the recovery by providing more specific forward guidance about the length of time during which the federal funds rate can be expected to remain exceptionally low, as in Alternative A. Although the staff now expects the target range for the federal funds rate to be unchanged through mid-2013, about half of the respondents to the Desk survey indicated that they expect the first federal funds target rate increase to occur in the fourth quarter of 2012 or earlier. Providing clarity that the Committee does not anticipate raising the federal funds rate until the middle of 2013 could have a noticeable effect on

market expectations and so put some downward pressure on longer-term interest rates. In addition, by better fixing expectations about the likely timing of future increases in the target range for the federal funds rate, the Committee could prevent medium- and longer-term rates from rising too quickly as the recovery progresses. For these reasons, policymakers might choose the language in Alternative A that indicates that the range for the federal funds target rate is likely to be unchanged "at least through mid-2013." Moreover, the Committee's decision to hold the federal funds target rate exceptionally low for longer than previously anticipated would reinforce the public's perception of the Committee's commitment to strengthen the recovery. Similarly, some participants may also see a benefit to providing forward guidance about the likely duration of the reinvestment program.

Some participants may view the risks to economic growth as having shifted to the downside, but remain uncertain about the expected benefits of unconventional tools, such as additional large-scale asset purchases, relative to their costs, especially the risk that the Committee might be unable to withdraw accommodation in a timely fashion. Those participants may view increasing the average maturity of the Federal Reserve's securities holdings in order to put downward pressure on long-term private interest rates without a further significant expansion of the Federal Reserve's securities portfolio, as in Alternative A, as better balancing those risks. Preliminary staff estimates suggest that an operation to purchase $400 billion of Treasury securities with remaining maturities of 7 years to 30 years while selling an equal amount of other debt securities with much shorter maturities—along with a decision to reinvest principal payments from existing securities only in long-term securities—would provide additional support for the recovery. The estimated range of possible effects on longer-term interest rates is quite wide, but includes an effect similar to the $600 billion Treasury purchase program announced in November 2010.[1] This policy would likely lead to some increase in reserve balances reflecting the different premiums on the securities purchased and sold.[2] In addition, such

[1] For additional information about the transmission mechanism and likely effects of a decision to increase the average duration of the Federal Reserve's holdings of securities, see the memo on "Potential Monetary Policy Tools to Provide Further Accommodation" (by D. Bowman, M. Kiley, A. Levin, S. Meyer, W. Nelson, and D. Reifschneider) that was distributed to the Committee on August 3.

[2] Following the Committee's usual practice, the draft directive for Alternative A sizes the purchases and sales in terms of the face value of the securities. The premiums over face value that the Desk would have to pay to purchase fairly long-term securities would likely be larger than the net unamortized premiums on the securities that the Desk would sell. The total face value of securities holdings would remain constant at approximately $2.6 trillion, but the supply of reserve balances would likely increase by about $50 billion. If it wished to avoid an increase in reserve balances, the Committee could instead direct the Desk to sell sufficient securities to purchase $400 billion in face value of longer-

a policy step could delay the normalization of the size of the Federal Reserve's balance sheet after the Committee ceases the reinvestment of principal payments on SOMA securities, because the runoff of Treasury securities would be much slower.[3] Moreover, the increase in the average duration of the portfolio resulting from this policy would increase the Federal Reserve's exposure to unrealized capital losses as a result of changes in interest rates.

An announcement indicating that the Committee is likely to leave the target range of the federal funds rate unchanged until mid-2013, accompanied by a decision to increase the average maturity of the Federal Reserve's securities holdings and a suggestion that the Committee is prepared to expand its securities holdings if necessary, would surprise market participants. Respondents to the Desk's dealer survey assigned only about 20 percent odds to the use of either of those tools over the next twelve months. Longer-term yields would likely decline, although the decline might be restrained 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.

THE CASE FOR ALTERNATIVE C

Although information received since the June meeting suggested that the pace of recovery remained modest, Committee members may view the disappointing progress of the recovery so far this year as largely or wholly attributable to temporary factors, and, with inflation having surprised to the upside, favor a statement along the lines of Alternative C. For example, they may view the disruptions to auto production and sales associated with the tragic events in Japan as a particularly important factor underlying the recent softness in economic activity, and see the signs that such pressures have eased as confirming the likelihood of a near-term rebound. In addition, the Committee may expect labor market conditions to improve over the remainder of the year; for example, they may anticipate that with corporate earnings and liquidity strong and businesses continuing to invest in equipment and software, firms are well positioned to expand employment as economic activity picks up. Policymakers may further judge that financial conditions are likely to become more supportive of economic activity in the second half of the year, as suggested by the reported easing of some lending standards in

term securities. Such a policy would reduce the face value of securities held but leave the level of reserve balances unchanged. This policy, however, would be somewhat more difficult to communicate.

[3] Of course, the Committee could instruct the Desk to sell enough securities to put total holdings on any desired downward path.

the Federal Reserve's August Senior Loan Officer Opinion Survey. As a result, some Committee members may see a strong pickup in real activity over the second half of the year as the most likely scenario, perhaps along the lines of the "Faster Snapback" alternative simulation. If Committee participants think that output growth is likely to step up appreciably, they may also see a significant risk that inflation will continue at elevated levels. If so, they may judge that it is appropriate at this juncture to modify the statement so as to provide a high degree of flexibility to tighten policy as appropriate. Indeed, if growth picks up as they expect, they may wish to begin withdrawing monetary policy accommodation as soon as this fall. As a result, members may favor an announcement in which the Committee signals that the policy of reinvesting principal payments would only be maintained "for the time being," along the lines of Alternative C.

Members may believe that the extraordinary degree of monetary policy accommodation provided in recent years has already put in place sufficient support for the economic recovery. As a result, they may judge that the most important contribution that monetary policy can make going forward is to ensure that longer-term inflation expectations remain stable. They may see this as helping to fulfill the dual mandate both by ensuring that inflation is at mandate-consistent levels over the intermediate term and by providing a stable background for a sustainable recovery in real activity. Policymakers may feel that maintaining the current degree of monetary policy accommodation for much longer could jeopardize the stability of inflation and inflation expectations. For example, they may believe that the current degree of policy accommodation could make it easier for firms to pass through a larger share of the higher costs arising from earlier increases in the prices of some inputs. Alternatively, some members may see a risk of a further pickup of inflation because they believe that potential output over the medium term will prove considerably lower than previously thought, as in the "Lower potential" alternative simulation. Indeed, some members might see the rising trends in some measures of underlying inflation—such as the core CPI and core PCE—as consistent with this assessment. If so, participants might conclude that the Committee can best foster its dual mandate not only by preserving the ability to withdraw monetary policy accommodation as soon as necessary, but also by sending a clearer statement that "the risks to inflation are tilted to the upside," as in Alternative C.

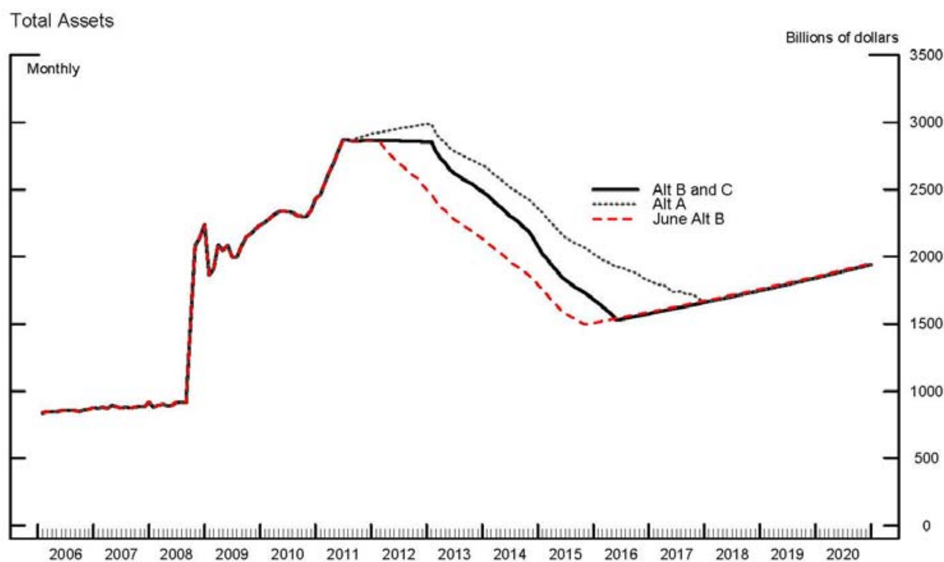
Importantly, the sequence of actions in the exit strategy agreed to by the Committee indicates that a change in the "extended period" language would come either at the same time as or after the Committee announced the end of the reinvestment policy.

Therefore, some participants may wish to signal that the reinvestment policy could end relatively soon because they believe that the removal of the "extended period" language regarding the funds rate would contribute to the longer-term achievement of the Committee's dual mandate by supporting financial stability. In particular, participants might feel that the economy is more prone to asset price misalignments when the Committee indicates that the federal funds rate is likely to remain very low for an extended period, and they might view such misalignments as a major obstacle to the achievement of the Committee's dual mandate in the long run. If so, they may favor a statement such as Alternative C.

A statement indicating that the risks to inflation are tilted toward the upside and hinting that the reinvestment program could be discontinued soon would surprise market participants. As a result, longer-term interest rates would likely increase, although the Committee's signal that it could begin 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.

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; although the language in the statements differs, Alternatives B and C have the same balance sheet projection. Projections under each scenario are based on assumptions about various components of the balance sheet. Details of these assumptions, as well as projections for each major component of the balance sheet, can be found in Explanatory Note C. Consistent with the staff's forecast, the two scenarios both assume the target federal funds rate lifts off in the third quarter of 2013.



For the scenario that corresponds to Alternatives B and C, we assume that the Committee continues to reinvest the proceeds from principal repayments from Treasury securities and agency securities in Treasury securities until February 2013, about six months before the assumed first increase in the target federal funds rate. Until that time, System Open Market Account (SOMA) security holdings remain constant at roughly \$2.6 trillion, and the size of the balance sheet, which includes other assets in addition to the SOMA, holds roughly steady at about \$2.9 trillion. In February 2013, six months before the assumed first increase in the target federal funds rate, reinvestment ceases, and the balance sheet begins to contract. In February 2014, roughly six months after the assumed first increase 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, by January 2019.[4, 5] This action, along with the cessation of reinvestment, results in the normalization of the size of the balance sheet by June 2016.[6]

After reserve balances have reached the assumed $25 billion floor, the balance sheet begins to expand, with increases in holdings of Treasury securities essentially matching the growth of Federal Reserve capital and notes in circulation. The balance sheet reaches a size of $1.9 trillion by the end of 2020.

Under Alternative A, the Committee is assumed to announce the sale of $400 billion of securities with remaining maturities of 3 years or less and the purchase of the same amount of securities with remaining maturities of 7 years or more, with this transformation of the maturity structure of the SOMA portfolio taking place over one year. It is also assumed that the Committee will reinvest the proceeds from principal repayments from its holdings of securities into Treasury securities with a maturity of 7 years or more. Moreover, we assume that the impact on longer-term interest rates is realized immediately with the announcement of Alternative A, implying a lower path for interest rates. The lower path for interest rates under Alternative A implies more MBS prepayments and therefore reduced MBS holdings over the forecast period. The lower path for interest rates also implies that purchases of Treasury securities will be made at prices that include a premium above their face value that exceeds the premium under the baseline.

Although the change in the SOMA portfolio's maturity distribution has no direct impact on the total face value of SOMA holdings, total assets rise in the near term reflecting a sizable increase in net unamortized premiums. Net unamortized premiums increase relative to the baseline for two reasons. First, the securities being sold generally

[4] 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.

[5] 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.

[6] The assumed timing of the normalization of the size of the balance sheet depends importantly on the assumed level of reserve balances that is consistent with the conduct of monetary policy. A higher level of reserve balances would, all else equal, lead to an earlier normalization of the size of the balance sheet.

Alternatives

will have a smaller amount of net unamortized premium associated with them relative to the securities being purchased; and second, all proceeds from principal repayments from agency securities and Treasury securities are reinvested in Treasury securities with maturities of 7 years or more, which, given the lower longer-term interest rate path assumed in Alternative A, implies larger premiums. The peak in the size of the balance sheet is higher under Alternative A, and the difference is the result of the accumulation of these premiums. The amount of increased premium on the SOMA portfolio from the new purchases and from the reinvestment policy depends critically on the details of the execution of the operation. The Desk has a self-imposed limit of holding 70 percent of outstanding issues. This limit, if it is maintained, would tend to push new purchases of securities into more recently issued securities. The more recently issued securities, especially if they are issued after the decline in market rates from the announcement of the maturity exchange, would tend to have market values much closer to face value, implying a potentially much smaller amount of premiums on the portfolio.

As in the baseline scenario, sales of agency securities under Alternative A commence six months after the federal funds rate is assumed to rise, and these sales last for five years. Because the portfolio is made up of relatively longer-term securities under Alternative A than in the baseline, the pace at which securities roll off is slower than under Alternatives B and C. As a result, the normalization of the size of the balance sheet is delayed until February 2018, one year and eight months later than in the scenario corresponding to Alternatives B and C. In addition, the normalization of the composition of the balance sheet will take longer under Alternative A than in the scenario corresponding to Alternatives B and C.

Compared with the June Tealbook baseline projection, total assets in Alternatives B and C are roughly the same until March 2012. The assumed first increase in the target federal funds rate has been delayed three quarters from the previous Tealbook, and so redemptions start ten months later than in the previous baseline projection.[7] As a result of the ten additional months of reinvestment, the current projection for total assets lies

[7] The projected path of the stock of MBS in the SOMA portfolio in the baseline is little changed from the baseline in the June Tealbook. Although the interest rate path in the baseline is revised down some from the last Tealbook, which reduces the size of MBS holdings over the projection period, the model employed by the investment manager to project the MBS prepayment path was adjusted over the intermeeting period to take account of the fact that refinancing activity has been less than anticipated given the current low interest rate environment. This model adjustment more than offsets the interest rate effect, increasing the estimated path for the stock of MBS holdings in the baseline slightly relative to the last Tealbook.

above the projection in the June Tealbook from April 2012 until June 2016. From this point onward, the size of the balance sheet is normalized, and the path for total assets aligns with the path in the June Tealbook. Consistent with the higher level of assets, on the liability side of the balance sheet, the forecasted path for reserve balances is higher than in the previous Tealbook until June 2016, when reserve balances fall to $25 billion. The higher reserve balances relative to the June Tealbook also reflects a decline in the SFA. Given the large degree of uncertainty over the timing and extent of future increases in the debt ceiling, the SFA balance is assumed to remain at its current level of zero throughout the forecast period rather than remain at $5 billion as was projected in the last Tealbook.

In the scenario corresponding to Alternatives B and C, the monetary base is projected to start contracting in the middle of 2012 and it will continue to contract through 2015, reflecting the decline in reserve balances. Starting in late 2016, after reserve balances are assumed to have stabilized at $25 billion, the monetary base expands again, in line with the growth of Federal Reserve capital and notes in circulation.

Growth Rates for the Monetary Base

Date	Alternatives B and C	Alternative A	*Memo* : June Tealbook
		Percent, annual rate	
		Monthly	
Aug-10	-2.4	-2.4	-2.4
Sep-10	-10.2	-10.2	-10.1
Oct-10	-9.8	-9.8	-9.8
Nov-10	3.2	3.2	3.2
Dec-10	16.8	16.8	16.8
Jan-11	23.3	23.3	23.3
Feb-11	57.6	57.6	57.6
Mar-11	97.8	97.8	97.8
Apr-11	74.4	74.4	74.4
May-11	42.1	42.1	42.1
Jun-11	35.9	35.9	39.6
Jul-11	26.9	26.9	31.1
Aug-11	16.2	18.0	5.5
Sep-11	-0.5	2.3	-14.4
Oct-11	-2.9	-1.0	-7.6
Nov-11	10.2	12.0	7.6
Dec-11	-1.0	1.2	7.4
		Quarterly	
2010 Q3	-6.4	-6.4	-6.4
2010 Q4	-3.2	-3.2	-3.2
2011 Q1	36.8	36.8	36.8
2011 Q2	69.4	69.4	69.8
2011 Q3	25.5	26.3	23.6
2011 Q4	2.9	4.9	-2.7
2012 Q1	6.6	9.8	5.6
2012 Q2	3.9	8.0	-11.5
		Annual - Q4 to Q4	
2009	52.5	52.5	52.5
2010	0.9	0.9	0.9
2011	37.3	38.2	34.9
2012	2.3	6.3	-8.7
2013	-12.5	-9.6	-16.3
2014	-15.4	-11.6	-16.5
2015	-22.1	-15.8	-21.0

Note: Not seasonally adjusted.

DEBT, BANK CREDIT, AND MONEY FORECASTS

Domestic nonfinancial sector debt is projected to expand at an annual rate of 5 percent in the third quarter, driven by rapid expansion in federal government debt and a modest rise in private nonfinancial debt. In the remainder of the forecast period ending in 2013, domestic nonfinancial sector debt is expected to grow at about a 5 percent pace, on average, as federal debt continues to advance and private nonfinancial debt gradually accelerates. Nonfinancial business debt is forecasted to increase at a moderate pace over the projection period, reflecting further gains in capital expenditures. 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 to decline, housing demand is projected to remain weak in part because of elevated unemployment, and lending standards are expected to ease only slowly. Consumer credit is projected to post a modest gain this quarter and then to gradually accelerate, driven by rising spending on consumer durables.

We expect commercial bank credit to increase only modestly in the second half of 2011, with loans projected to rise at a somewhat slower pace than banks' securities holdings. Ongoing balance sheet pressures, still-stringent lending standards, and a lack of demand from high-quality borrowers for certain types of loans will continue to weigh on bank lending. Over 2012 and 2013, however, we expect these factors to gradually abate and bank credit to accelerate. Commercial and industrial loans are projected to increase steadily through the forecast period as a result of a continued rise in investment outlays and further gradual easing of banks' lending standards and terms for such loans. In contrast, lending to businesses through commercial real estate loans is expected to contract through 2012 and remain largely flat during 2013, primarily reflecting the projected continued weakness in market fundamentals and elevated charge-offs that will lessen only gradually over time. Turning to household lending, residential real estate loans are projected to remain mostly unchanged through mid-2012 and inch up in 2013, reflecting in part weakness in housing demand and relatively tight lending standards. Consumer loans are projected to increase modestly over the second half of 2011 and strengthen over the rest of the forecast horizon, supported by a pickup in consumer spending. Banks' securities holdings are forecasted to expand at a moderate pace through the forecast period.

After a sharp acceleration expansion in June and July due to special factors that are expected to reverse in short order (see the discussion in the Financial Developments section in Tealbook Book A), M2 is projected to grow at a pace of roughly 3 percent through 2012 before contracting in 2013. The overall contour of the forecast is predicated on an assumption that the level of M2 is currently higher than would be implied by fundamentals, not only as a result of the recent special factors, but also as a result of a flight to safety during and after the 2007-2009 financial crisis. Beginning next quarter, M2 is forecast to grow about in line with nominal GDP until the second quarter of 2012, at which point we expect households to begin shifting their portfolios away from liquid M2 deposits toward higher-yielding investments as the economy gains strength. As a result, money growth falls below that of GDP. In 2013, the projected rise in the general level of interest rates will increase the opportunity cost of holding monetary assets; staff also expects that this increase in opportunity cost will boost the pace of household portfolio reallocation. The combined effects of the increase in opportunity cost and household portfolio reallocation results in a contraction in M2 over the second half of 2013.

Within M2, liquid deposit growth is expected to moderate and then turn negative in the second half of 2013, consistent with the increased opportunity cost. In contrast, small time deposits are expected to run off through the second quarter of 2013—in line with the expected reallocation out of M2 assets—before resuming growth as interest rates rise. Retail money market mutual funds are expected to contract a bit longer than small time deposits, through the end of 2013, as investors are historically slower to move into such funds after interest rates move up. Currency is expected to expand at around its long-run average pace over the forecast period.

M2 Growth Rates
(percent, seasonally adjusted annual rate)

Monthly Growth Rates	**Tealbook Forecast***
Jan-11	3.3
Feb-11	8.3
Mar-11	3.8
Apr-11	4.8
May-11	7.5
Jun-11	12.2
Jul-11	25.2
Aug-11	8.0
Sep-11	-1.3
Oct-11	3.5
Nov-11	3.4
Dec-11	3.6
Quarterly Growth Rates	
2011 Q1	5.0
2011 Q2	6.4
2011 Q3	13.7
2011 Q4	2.9
Annual Growth Rates	
2010	3.2
2011	7.2
2012	3.1
2013	-1.1

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

DIRECTIVE

The June directive appears below. Drafts for an August directive corresponding to each of the three policy alternatives appear on subsequent pages. The directive for Alternatives B and C would instruct the Desk to continue the current policy of reinvesting principal payments on SOMA securities. The Directive for Alternative A would instruct the Desk to take appropriate steps to sell and purchase Treasury holdings so as to increase the average maturity of the holdings of the SOMA portfolio, and direct reinvestments of principal payments to long-term securities. All three directives also instruct the Desk to keep the total face value of domestic securities holdings at approximately $2.6 trillion, the level attained at the completion of the purchase program in June 2011.

June 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 1/4 percent. The Committee directs the Desk to complete purchases of $600 billion of longer-term Treasury securities by the end of this month. The Committee also directs the Desk to maintain its existing policy of reinvesting principal payments on all domestic securities in the System Open Market Account in Treasury securities in order to maintain the total face value of domestic securities at approximately $2.6 trillion. 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 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 1/4 percent. ~~The Committee directs the Desk to complete purchases of $600 billion of longer-term Treasury securities by the end of this month.~~ **The Committee directs the Desk to execute purchases, over the next 12 months, of Treasury securities with remaining maturities of approximately 7 years to 30 years with a total face value of $400 billion, and to sell Treasury securities with remaining maturities of 3 years or less with a total face value of $400 billion.** The Committee also directs the Desk to ~~maintain its existing policy of~~ reinvest~~ing~~ principal payments on all domestic securities in the System Open Market Account in Treasury securities **with remaining maturities of approximately 7 years to 30 years** in order to maintain the total face value of domestic securities at approximately $2.6 trillion. 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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August 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 1/4 percent. ~~The Committee directs the Desk to complete purchases of $600 billion of longer-term Treasury securities by the end of this month.~~ The Committee ~~also~~ directs the Desk to maintain its existing policy of reinvesting principal payments on all domestic securities in the System Open Market Account in Treasury securities in order to maintain the total face value of domestic securities at approximately $2.6 trillion. 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 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 1/4 percent. ~~The Committee directs the Desk to complete purchases of $600 billion of longer-term Treasury securities by the end of this month.~~ The Committee also directs the Desk to maintain its existing policy of reinvesting principal payments on all domestic securities in the System Open Market Account in Treasury securities in order to maintain the total face value of domestic securities at approximately $2.6 trillion. 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 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, prices 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 federal funds rate and the trailing four-quarter change in the core PCE price index. The federal funds 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 of the projected 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)	Projected real funds rate (twelve-quarter-ahead average)
Lagged core inflation	−1.1	−2.9	−1.2
Lagged headline inflation	−2.3	−3.1	−1.4
Projected headline inflation	−1.3	−2.9	−1.1

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 forecast of three-quarter-ahead 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 quotes for federal funds and Eurodollar futures as well as implied three-month forward rates from swaps, and the confidence intervals for this path are constructed using prices of interest rate caps. The computations use the staff's baseline assumptions about term premiums.

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

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 titled "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 August 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 July 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 the third quarter of 2013, three quarters later than in the June 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 Mortgage-Backed Securities (MBS), and Agency Debt Securities

- The assumptions under Alternatives B and C are:
  - Principal payments from Treasury securities continue to be reinvested until February 2013.
  - Principal payments from agency MBS and agency debt securities continue to be reinvested in longer-term Treasury securities until February 2013.[2]
  - All purchases of Treasury securities are executed using a maturity distribution similar to that currently used by the Desk.
  - As of February 2013, the Federal Open Market Committee (FOMC) is assumed to cease reinvesting principal payments on securities held in the SOMA portfolio.
  - The Federal Reserve begins to sell agency MBS and agency debt securities in February 2014, roughly 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 January 2019.

[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 August 3, 2011.

Explanatory Notes

- 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 A, beginning in September 2011, the FOMC is assumed to sell $400 billion of securities with remaining maturities of 3 years or less and to purchase the same amount of Treasury securities with remaining maturities of 7 years or more. This activity takes place over one year. It is also assumed that the FOMC will reinvest the proceeds from principal repayments from its holdings of all securities into Treasury securities with a maturity of 7 years or more. Moreover, we assume that the impact on longer-term interest rates is realized immediately upon the announcement of Alternative A, implying a lower path for interest rates in Alternative A relative to the scenario corresponding to Alternatives B and C. The lower path for interest rates under Alternative A implies more MBS prepayments and therefore reduced MBS holdings over the forecast period. The lower path for interest rates also implies that purchases of Treasury securities will be made at prices that include a premium above their face value that exceeds the premium under the baseline.[3]

- In all scenarios, a minimum level of $25 billion is set for reserve balances. To maintain reserve balances at this level, first 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 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 remain at about $1.0 billion 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 are assumed to be constant at their level as of

[3] Because current and expected near-term 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 on the H.4.1 statistical release will increase by the face value; the implied premiums are recorded as "other assets."

July 31, 2011 until the process to sell the assets in the LLC's portfolio resumes after the first increase in the target federal funds rate. At this point, the asset sales resume and holdings gradually fall to zero by June 2014.

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 December 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.
- Given the large degree of uncertainty over the timing and extent of future increases in the debt ceiling, we maintain the Supplementary Financing Account(SFA) balance at its current level of zero throughout the forecast.
- 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 are matched by higher levels of reserve balances. Increases in the levels of liability items, such as Federal Reserve notes in circulation or other liabilities, or increases in the level of Reserve Bank capital, drain reserve balances. When increases in these liability or capital items would otherwise cause reserve balances to fall below $25 billion, purchases of Treasury securities are assumed in order to maintain that level of reserve balances.
- In the event that a Federal Reserve Bank's earnings fall short of the amount necessary to cover operating costs, pay dividends, and equate surplus to capital paid-in, a deferred asset 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." This liability takes on a positive value when weekly cumulative earnings have not yet been distributed to the Treasury, while this liability takes on a negative value when earnings fall short of the expenses listed above. In the projections, Systemwide earnings are always sufficient to cover these expenses and this line item is set to zero.

[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 -- Alternative A

Billions of dollars

	Jul 31, 2011	2012	2014	2016	2018	2020
Total assets	2,869	2,998	2,374	1,840	1,748	1,941
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	12	4	0	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	12	4	0	0	0	0
Support for specific institutions	53	46	26	18	9	4
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	53	46	26	18	9	4
Securities held outright	2,648	2,642	2,096	1,624	1,587	1,827
U.S. Treasury securities	1,638	1,887	1,559	1,354	1,576	1,827
Agency debt securities	112	77	39	16	0	0
Agency mortgage-backed securities	897	678	498	254	10	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	155	304	251	198	151	110
Total liabilities	2,817	2,928	2,281	1,718	1,585	1,726
Selected liabilities						
Federal Reserve notes in circulation	989	1,078	1,201	1,337	1,470	1,611
Reverse repurchase agreements	70	70	70	70	70	70
Deposits with Federal Reserve Banks	1,685	1,762	995	295	30	30
Reserve balances held by depository institutions	1,620	1,757	990	290	25	25
U.S. Treasury, General Account	65	5	5	5	5	5
U.S. Treasury, Supplementary Financing Account	0	0	0	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	52	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.

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

Billions of dollars

	Jul 31, 2011	2012	2014	2016	2018	2020
Total assets	2,869	2,856	2,079	1,575	1,748	1,941
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	12	4	0	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	12	4	0	0	0	0
Support for specific institutions	53	46	26	18	9	4
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	53	46	26	18	9	4
Securities held outright	2,648	2,640	1,913	1,437	1,629	1,834
U.S. Treasury securities	1,638	1,844	1,341	1,148	1,618	1,834
Agency debt securities	112	77	39	16	0	0
Agency mortgage-backed securities	897	719	534	272	11	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	155	165	139	120	109	103
Total liabilities	2,817	2,786	1,986	1,453	1,585	1,726
Selected liabilities						
Federal Reserve notes in circulation	989	1,078	1,201	1,337	1,470	1,611
Reverse repurchase agreements	70	70	70	70	70	70
Deposits with Federal Reserve Banks	1,685	1,620	699	30	30	30
Reserve balances held by depository institutions	1,620	1,615	694	25	25	25
U.S. Treasury, General Account	65	5	5	5	5	5
U.S. Treasury, Supplementary Financing Account	0	0	0	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	52	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

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