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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JUNE 19, 2008

MONETARY POLICY ALTERNATIVES

PREPARED FOR THE FEDERAL OPEN MARKET COMMITTEE
BY THE STAFF OF THE BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

MONETARY POLICY ALTERNATIVES

Recent Developments

Summary

(1) Market participants marked up the expected path of monetary policy substantially over the intermeeting period in response to a number of factors, including speeches by Federal Reserve officials that were read as emphasizing concerns about the outlook for inflation; a sharp rise in oil prices; economic data that, on balance, were interpreted as pointing to a stronger outlook for growth; and improving conditions in financial markets. Investors currently place high odds on the Committee leaving the target federal funds rate unchanged at the upcoming FOMC meeting, but also attach some probability to a 25 basis point increase. Nominal Treasury yields rose notably in reaction to the revisions to policy expectations and apparently to an increase in term premiums. TIPS-based measures of inflation compensation rose markedly, especially at shorter maturities, responding to sharply higher oil and agricultural commodity prices. Functioning of short-term funding markets showed improvement but conditions nonetheless remained strained. Spreads of interbank term funding rates over comparable-maturity overnight index swap (OIS) rates narrowed over the period. Equity prices were somewhat volatile, rising early in the intermeeting period before falling to end the period down appreciably; stock prices for investment banks registered significant declines amid renewed worries about their financial condition and future earnings prospects. Spreads on both investment-grade and speculative-grade securities narrowed a bit. Bond issuance surged, but business lending by banks decelerated and commercial paper outstanding declined. Issuance of leveraged loans continued to be weak, although secondary-market conditions improved modestly. The trade-weighted index of the nominal

dollar against the currencies of the major trading partners of the United States increased 1 percent on net.

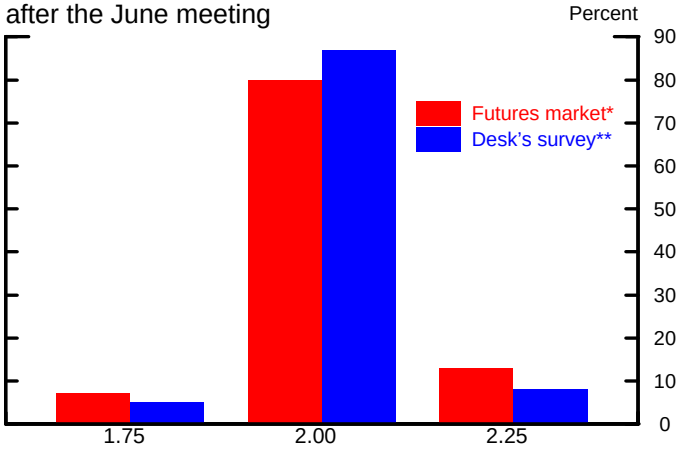
Monetary Policy Expectations and Treasury Yields

(2) Although the FOMC's decision at its April meeting to reduce the target federal funds rate by 25 basis points was largely anticipated, some market participants had reportedly assigned some weight to no change in the target rate. As a result, rates on federal funds futures maturing through early next year fell 5 to 15 basis points on the announcement.[1] By contrast, over the remainder of the intermeeting period, the expected path of policy was marked up substantially in response to commentary by FOMC officials that was interpreted as emphasizing concerns about the outlook for inflation and generally stronger-than-expected economic data; a significant portion of the increase occurred in volatile trading over a few days in early June. The revision to policy expectations also occurred against the backdrop of sharp increases in oil prices, which reportedly contributed to heightened concerns about the future path of inflation. Judging from options on federal funds futures, investors attach about an 80 percent probability to no change in the target rate at the upcoming FOMC meeting and 15 percent to a 25 basis point increase (Chart 1). All respondents to the Desk's survey of primary dealers expected no change in the target rate at the June meeting, and a substantial majority expected the FOMC to keep rates on hold over the next 2 to 3 meetings. Futures quotes suggest that investors now expect the federal funds rate to reach about 2½ percent by end of this year, and about 3½ percent by the end

[1] The effective federal funds rate averaged 1.99 percent over the intermeeting period, but as has been the case in recent months, volatility was very elevated. Over the period, the volume of long-term repurchase agreements (RPs) increased $5 billion. The Desk redeemed $35 billion in Treasury securities and sold $35 billion of Treasury securities on an outright basis to offset the provision of balances through various programs, including primary credit, the Primary Dealer Credit Facility, the Term Auction Facility, the single-tranche term RP program, and draws on foreign currency swap arrangements.

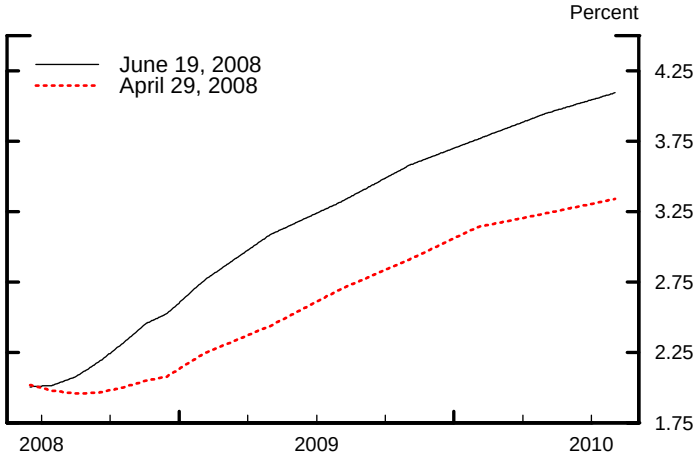
Chart 1
Interest Rate Developments

Probability density for target funds rate after the June meeting



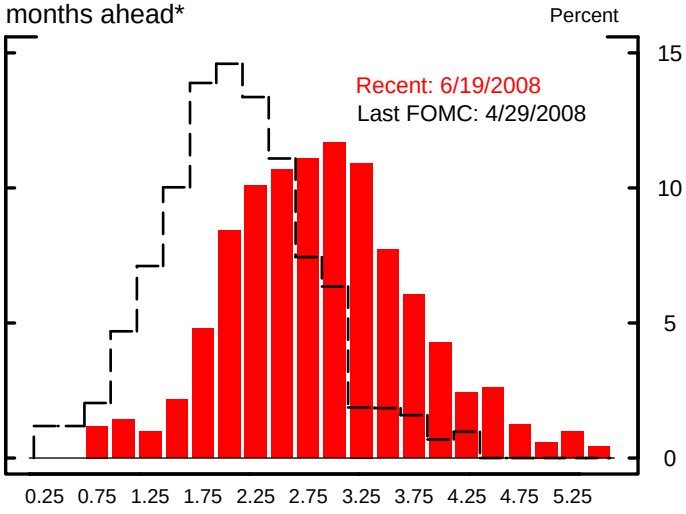
*Derived from options on federal funds futures.
**Survey of primary dealer economists on June 17, 2008.

Expected federal funds rates*



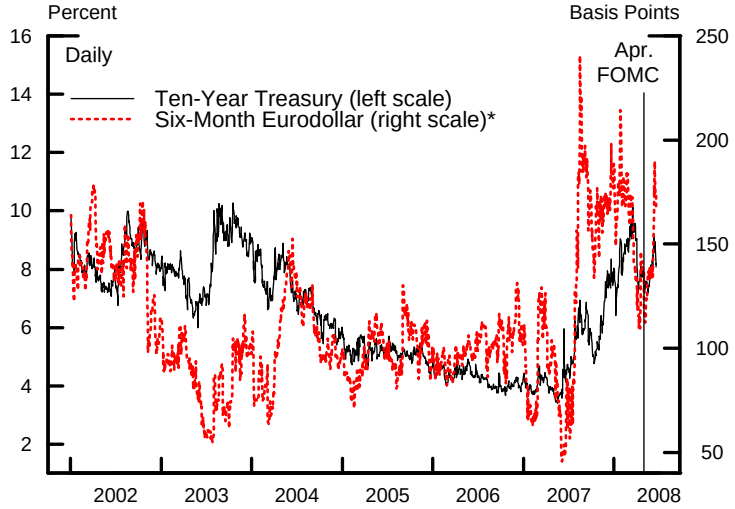
*Estimates from federal funds and Eurodollar futures, with an allowance for term premiums and other adjustments.

Implied distribution of federal funds rate six months ahead*



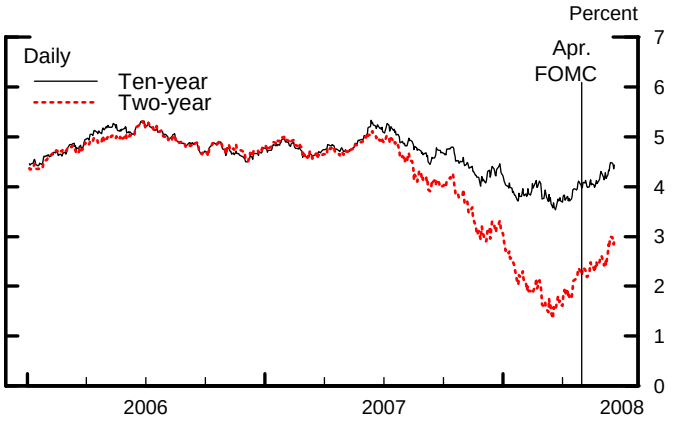
*Derived from options on Eurodollar futures contracts, with term premium and other adjustments to estimate expectations for the federal funds rate.

Implied Volatilities



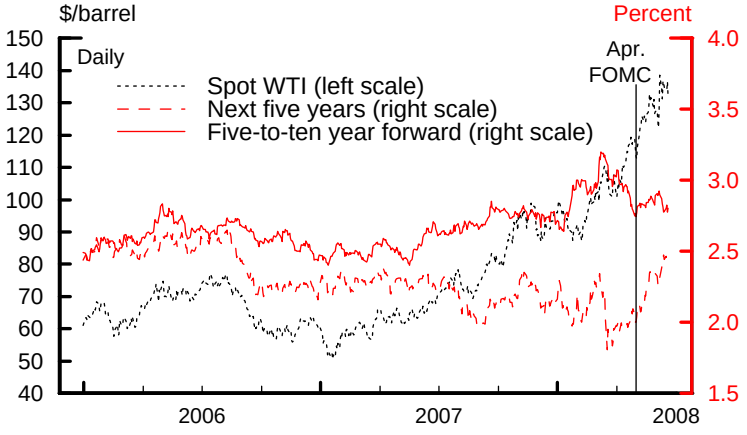
*Width of a 90 percent confidence interval computed from the term structures for the expected federal funds rate and implied volatility.

Nominal Treasury yields*



*Par yields from a smoothed nominal off-the-run Treasury yield curve.

Inflation compensation and oil prices*



*Estimates based on smoothed nominal and inflation-indexed Treasury yield curves and adjusted for the indexation-lag (carry) effect.

Note. Last observation is for Jun. 19, 2008.

of 2009, about 45 and 65 basis points higher than at the time of the April meeting, respectively. Desk survey respondents anticipated a much less steep path for policy, with the federal funds rate reaching 2¾ percent only at the end of 2009. The option-implied distributions of the federal funds rate six and twelve months ahead have shifted to the right, and are now skewed towards higher rates. Policy uncertainty, as measured by the dispersion of these distributions, moved markedly higher over the intermeeting period, with much of the increase coinciding with the sharp backup in policy expectations in early June.

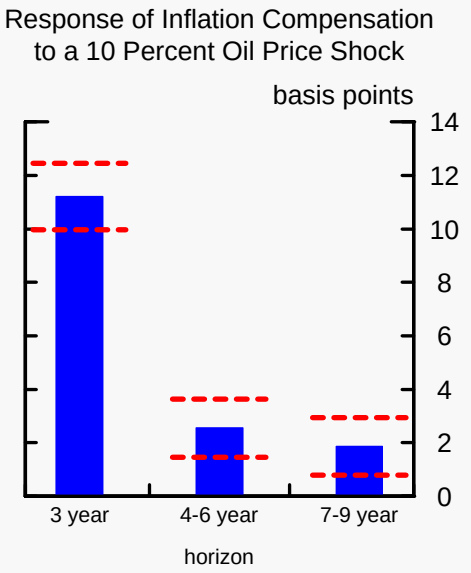
(3) Yields on nominal Treasury securities rose sharply over the intermeeting period. Two-year yields increased about 65 basis points and ten-year yields about 40 basis points. The increases were partly attributable to the rise in the expected path for policy, but also appeared to reflect increases in term premiums. Liquidity improved in the Treasury market, but it remained impaired relative to historical norms. On most days, bid-asked spreads on on-the-run nominal securities were near the low end of their range since early August 2007. In the TIPS market, the yield on ten-year issues rose by about 20 basis points. TIPS-based inflation compensation rose sharply over the period, with the increase concentrated at shorter horizons. Five-year inflation compensation adjusted for carry effects increased about 45 basis points. In contrast, five-year inflation compensation five years forward was about flat. Sharp advances in both near-term and far-term oil futures prices and rises in agricultural commodities prices likely contributed substantially to the rise in inflation compensation. (See box "Oil Prices and Inflation Compensation.") Probability distributions derived from inflation caps suggest an increase in both inflation expectations and uncertainty. (See box "Deriving Probability Densities for Inflation from Inflation Caps.") Survey

Oil Prices and Inflation Compensation

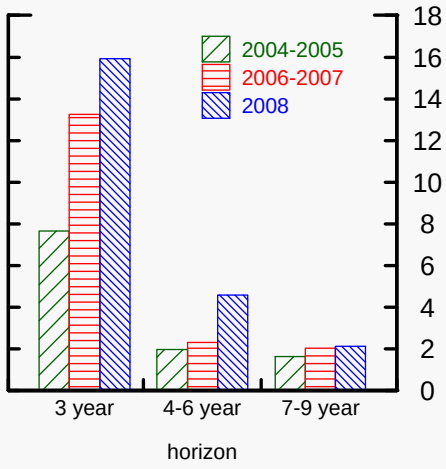
This box presents empirical estimates of the effects of oil price shocks on TIPS-based measures of inflation compensation. Such effects could reflect underlying shifts in market participants' inflation expectations or their uncertainty regarding the outlook for inflation.

To examine this issue, daily changes in inflation compensation at a given horizon are regressed on daily changes in the one-year-ahead oil futures price, controlling for surprises in economic news releases and unanticipated monetary policy actions. Inflation compensation at short horizons is measured by the spread between nominal and indexed Treasury securities at a constant maturity of three years, while inflation compensation at intermediate and longer horizons is measured using spreads on three-year-average forward rates at horizons of 4 to 6 years and 7 to 9 years ahead, respectively.

Using data since January 2004, these regressions indicate that oil price shocks have statistically significant effects on inflation compensation at all horizons (upper panel). Specifically, a 10 percent increase in the price of oil is associated with a rise of 12 basis points in near-term inflation compensation and a rise of about 2 to 3 basis points in forward inflation compensation at the intermediate and longer-term horizons.



Note: The dashed lines denote 95 percent confidence intervals for each coefficient.



Subsample analysis indicates that the sensitivity of near-term inflation compensation to oil price shocks has increased markedly over the past few years, roughly in line with the increasing weight of energy prices in the CPI basket.[1] Indeed, the regression coefficient for the most recent sample (January to mid-June 2008) is about twice as large as for the 2004-2005 sample. In contrast, the responsiveness of long-term forward inflation compensation has remained quite stable over this period, suggesting that there has been relatively little change in how oil price shocks influence investors' expectations and uncertainty about the longer-term inflation outlook.

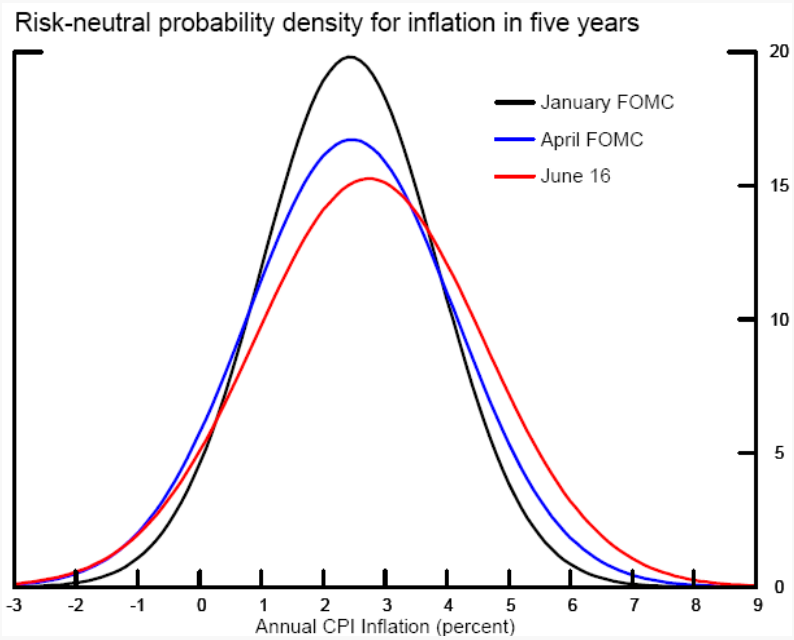
[1] For example, the weight of gasoline in the CPI basket increased from 3.2 percent in December 2003 to 4.1 percent in December 2005 and to 5.2 percent in December 20007.

Deriving probability densities for inflation from inflation caps

Inflation derivatives markets have grown in recent years. One such derivative is an inflation cap, which pays the holder an amount equal to the difference between headline CPI inflation and a level specified in the contract (the "strike price") times the notional value of the contract in each year over the term of the contract. Thus, an inflation cap effectively provides the holder with insurance against high inflation outcomes. Although the inflation caps market is still nascent, with fairly limited trading activity, anecdotal information suggests that investor interest in inflation caps has picked up this year.

Prices of inflation caps at various strike prices and maturities can be used to construct implied probability density functions (pdfs) for inflation at selected horizons. These pdfs are constructed assuming that investors are risk neutral and that inflation is the sum of two components: a stochastic long-run trend plus transitory shocks around that trend.[1]

The figure below shows such pdfs for the one-year inflation rate five years ahead on selected recent dates. These pdfs have widened during 2008 and, since the April FOMC meeting, have also shifted to the right. The widening of the pdfs suggests that uncertainty about long-run inflation outcomes has increased in recent months, and the rightward shift in the distributions is consistent with some increase in inflation expectations. However, two important caveats apply to this exercise. First, if investors are in fact risk averse, the widening of the pdfs and the rightward shift in the distributions could represent larger risk premiums that investors are willing to pay to hedge against the possibility of greater-than-expected inflation in the future. Second, the market is comparatively small and illiquid, and the perceptions of inflation risk among investors in this market might not be representative of those of investors in the broader economy.



[1]The assumption about the inflation process is intended as a plausible characterization of how investors might view inflation dynamics. However, the results are robust to alternative assumptions about the inflation process.

measures of inflation expectations were flat to higher over the period, continuing the upward trend seen so far this year.[2]

Money Markets

(4) Functioning in the interbank funding markets appeared to improve modestly, but conditions in those markets remained strained. Spreads of one- and three-month interbank term funding rates over comparable-maturity OIS rates declined over the intermeeting period (Chart 2).[3] Market participants attributed part of the narrowing to the expansion in the credit extended through the Term Auction Facility (TAF) from $100 billion to $150 billion outstanding. European banks' demand for dollar funding appeared to remain elevated relative to that of domestic banks. Conditions in euro and sterling interbank markets also remained strained, but were little changed from the time of the April FOMC meeting despite announcements of further write-downs in the first quarter by many European banks. In contrast, implied rates from foreign exchange and currency basis swaps indicate that European financial institutions may have appreciably increased their demand for dollar funding; demand was strong at dollar auctions offered by the European Central Bank and Swiss National Bank even as they increased the size of those auctions in line with the increases in the sizes of their dollar swap lines with the Federal Reserve to $50 billion

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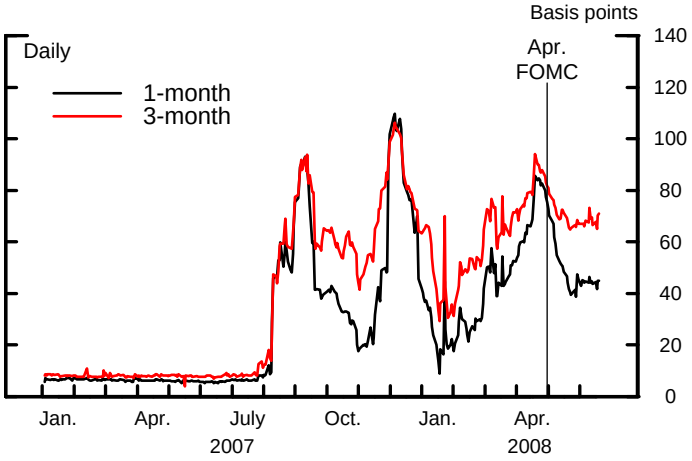
[2] An implied forward measure of inflation expectations beginning in five years and ending in ten years calculated using data for five- and ten-year inflation expectations from the Survey of Professional Forecasters fell 30 basis points from the first to the second quarter. The Desk survey measure of five-year-forward inflation expectations was little changed over the intermeeting period.

[3] In reaction to a widespread belief that banks on the Libor panel were understating their borrowing costs, on June 11 the British Bankers' Association (BBA) announced a series of changes to Libor. The changes included tighter scrutiny of the rates contributed by banks on the Libor panel, wider membership on the committee that oversees Libor, and potential increases in the number of contributors to some rate-setting panels. The BBA also indicated that it would investigate whether the rate-setting mechanism stigmatizes contributors and examine the possibility of introducing a second rate-fixing process for U.S. dollar Libor rates after the U.S. market opening.

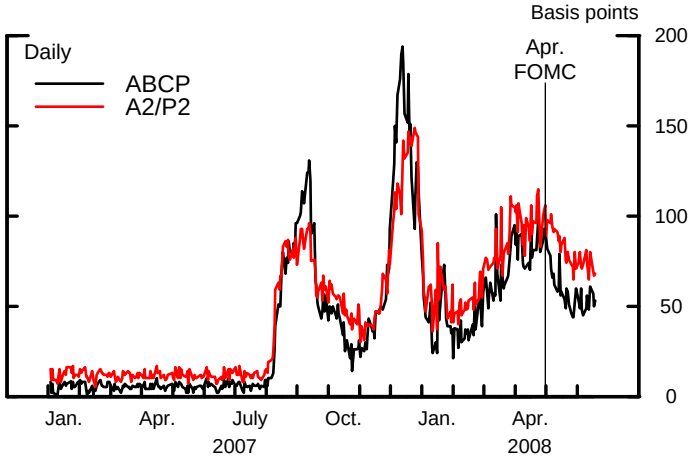
Chart 2
Asset Market Developments

Spreads of Libor over OIS



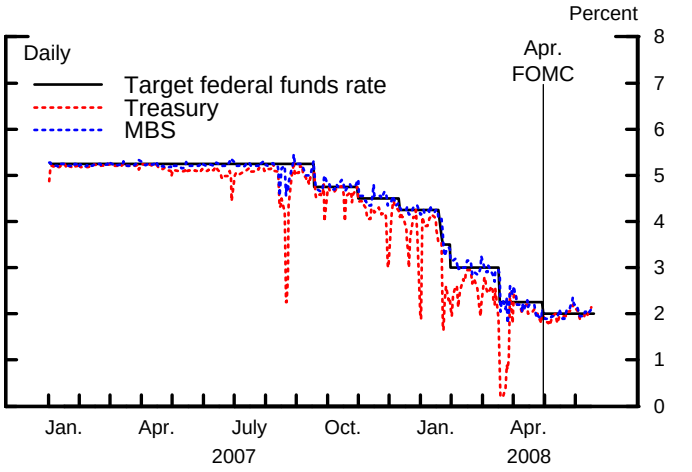
Note. Libor quotes are taken at 6:00 am, and OIS quotes are observed at the close of business of the previous trading day.

Spreads on thirty-day commercial paper



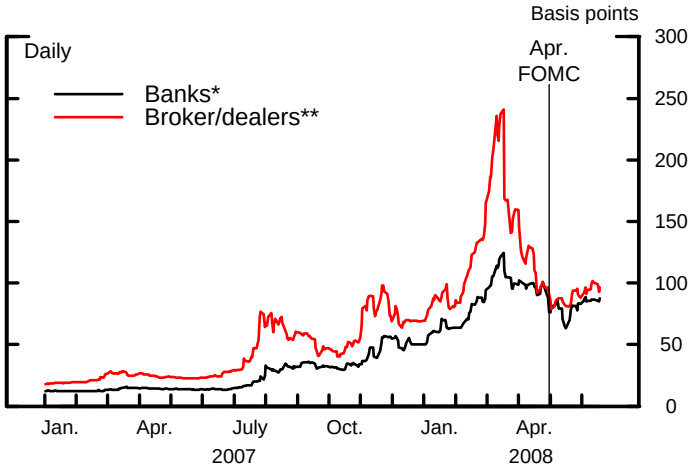
Note. The ABCP spread is the AA ABCP rate minus the AA nonfinancial rate. The A2/P2 spread is the A2/P2 nonfinancial rate minus the AA nonfinancial rate.

Overnight repo rates



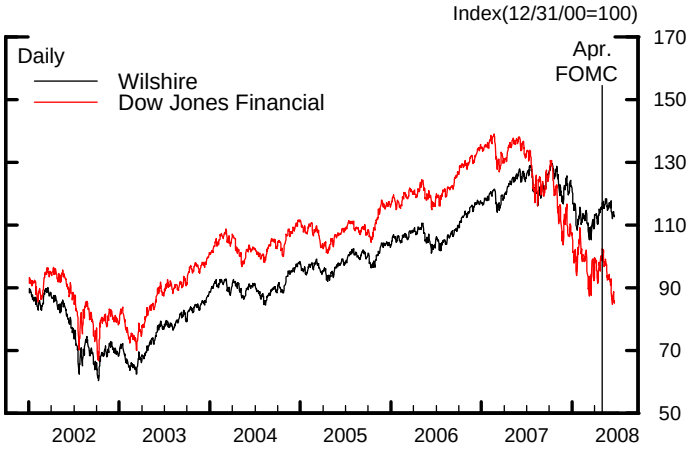
Source. Bloomberg

CDS spreads at selected financial institutions

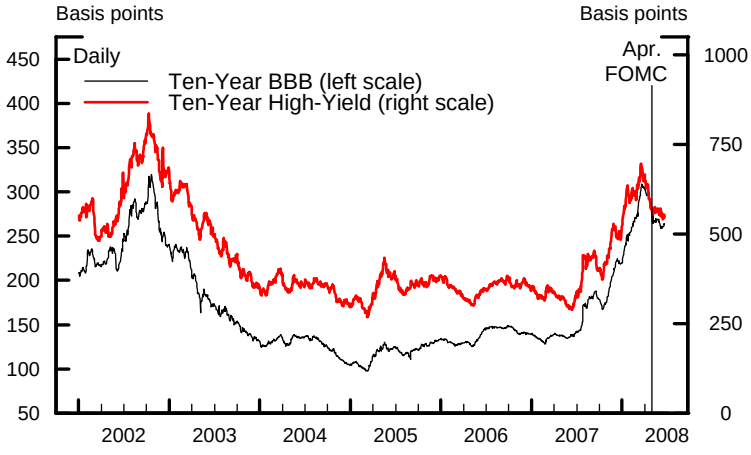


*Median spread of 24 banking organizations.
**Median spread of 10 broker-dealers.

Equity prices



Corporate bond spreads*



*Measured relative to an estimated off-the-run Treasury yield curve.

Note. Last observation is for Jun. 19, 2008.

and $12 billion, respectively. Liquidity in the market for interbank loans of more than three-month maturity reportedly remained thin and quoted spreads on those instruments were about unchanged. Late in the period, some quarter-end pressures were evident in the pattern of money market rates, but anecdotal reports indicated that concerns about the quarter-end were not especially pronounced.

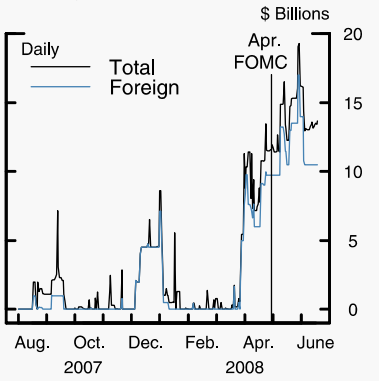
(5) Depository institutions' use of both overnight and term primary credit borrowing increased over the intermeeting period. Borrowing has increased substantially since the spread between the primary credit rate and the target federal funds rate was reduced to 25 basis points in March. The volume of bids at TAF auctions have remained substantial, but stop-out rates have declined substantially relative to prior auctions to levels well below one-month Libor. The fall in stop-out rates likely was a response to the increase in auction sizes. Primary Dealer Credit Facility (PDCF) credit outstanding has declined by more than 50 percent over the intermeeting period. (See box "Developments in Federal Reserve Liquidity Facilities.")

(6) Conditions in repo markets seemed to improve a bit since April, although functioning of the repo markets for less-liquid collateral remained poor. Supported by sales and redemptions from the System Open Market Account (SOMA), the overnight Treasury general collateral (GC) repo rate traded close to the federal funds rate during much of the intermeeting period. Overnight agency and agency-backed MBS repos generally traded at tight spreads to GC repo rates. Dealer haircuts on non-Treasury repos were little changed at elevated levels. Term Securities Lending Facility (TSLF) auctions were generally undersubscribed over the intermeeting period, but the auction on June 12 was fully covered, evidently reflecting increased demand ahead of quarter-end.

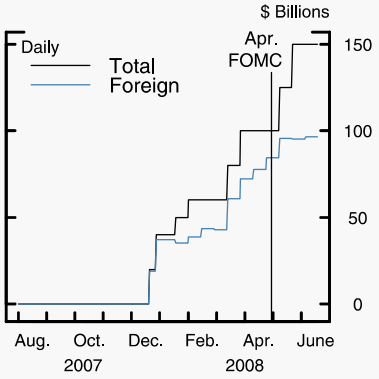
Developments in Federal Reserve Liquidity Facilities

The amount of primary credit outstanding (both overnight and term) and the number of institutions borrowing increased on net over the intermeeting period. After reaching a peak of nearly $20 billion in late May, the amount of primary credit outstanding has hovered around $13.5 billion for the past two weeks. Currently, 67 depository institutions (DIs) have outstanding primary credit loans, up from 44 at the time of the April FOMC meeting. Although nearly 80 percent of current credit outstanding consists of loans to a small number of branches and agencies of foreign banks, most borrowers are domestic banks and thrifts. Primary credit borrowing picked up sharply in late March, after the spread of the primary credit rate to the target federal funds rate was lowered to 25 basis points and the maximum maturity of loans was increased to 90 days. Federal Reserve Banks report that the domestic institutions borrowing include DIs with well diversified asset portfolios along with some that have relatively high concentrations of residential or commercial real estate assets in areas where the housing market is most stressed.

Primary Credit

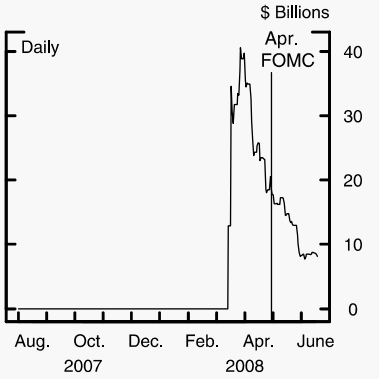


Term Auction Facility



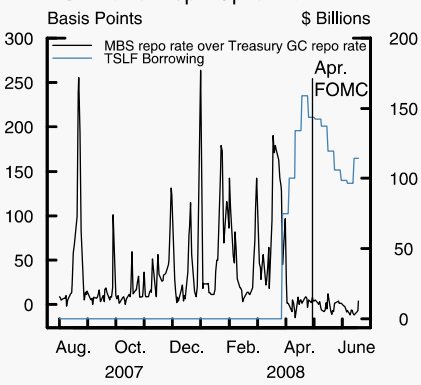
The total amount of bids at the four TAF auctions conducted over the intermeeting period remained elevated, but stop-out rates declined substantially relative to prior auctions, likely in response to the increased auction sizes. The percentage of TAF credit outstanding that was awarded to branches and agencies of foreign banks has progressively declined from about 85 percent at the April 21 auction to 64 percent at the June 16 auction, perhaps partly in response to the expansion of the swap lines with the European Central Bank and the Swiss National Bank.

PDCF



Primary dealers have substantially reduced their reliance on the PDCF, and the amount outstanding at that facility has declined by more than 50 percent over the intermeeting period, to about $8.5 billion. In recent weeks, only three dealers have accessed the facility, and one of them accounts for the bulk of PDCF credit outstanding.

TSLF and Repo Spreads



The volume of securities lent through the TSLF declined, on net, over the intermeeting period, and all of the auctions but one had bid to cover ratios below one. The auction on June 12 was the exception, with the increased demand reportedly related to somewhat higher financing concerns over quarter-end. The reduced use of the facility and the trend of undersubscription of these auctions likely reflected the improved conditions in funding markets over the intermeeting period. Moreover, because spreads of non-Treasury repo rates over those on Treasury repo have narrowed and have frequently been smaller than the minimum fee for borrowing through the TSLF, the incentive for dealers to participate in the TSLF—to exchange non-Treasury collateral for Treasuries—has diminished.

Capital Markets

(7) Broad equity price indexes fell 2 to 4 percent, on balance, over the intermeeting period. Financial sector stocks significantly underperformed the broad indexes, partly reflecting renewed concerns about the financial condition of some primary dealers, while energy stocks showed significant increases. Revisions to expected earnings were negative in the financial sector; positive in the energy sector, largely a reflection of rising oil prices; and about flat in other non-financial sectors. Option-implied volatility on the S&P 500 reversed some of its decline over the preceding intermeeting period, and is now near the middle of the elevated range seen since August 2007. The spread between the twelve-month forward trend earnings-price ratio for S&P 500 firms and the real long-term Treasury yield — a rough gauge of the equity risk premium — was little changed and remains near the upper end of its range over the past two decades. Yields on both investment-grade and speculative-grade corporate bonds rose significantly over the period, but by slightly less than yields on comparable-maturity Treasury yields, implying a further narrowing of spreads. However, spreads remain elevated by historical standards. In the market for leveraged loans, spreads to Libor in the primary market stayed at high levels. Conditions in the secondary market, while still difficult, improved somewhat, with prices moving up a little and bid-asked spreads narrowing. The improvement may be partly attributable to better market sentiment as banks continued to reduce their backlogs of underwritten deals. Implied spreads on the LCDX indexes were little changed over the intermeeting period.

(8) Several financial guarantors were downgraded by rating agencies over the intermeeting period. The impact of the downgrades on the municipal bond market has been limited, and ratios of municipal bond yields to comparable-maturity Treasury yields reversed their February and March jumps in recent weeks. Issuance of long-term municipal bonds continued to be strong in May, with some of this issuance

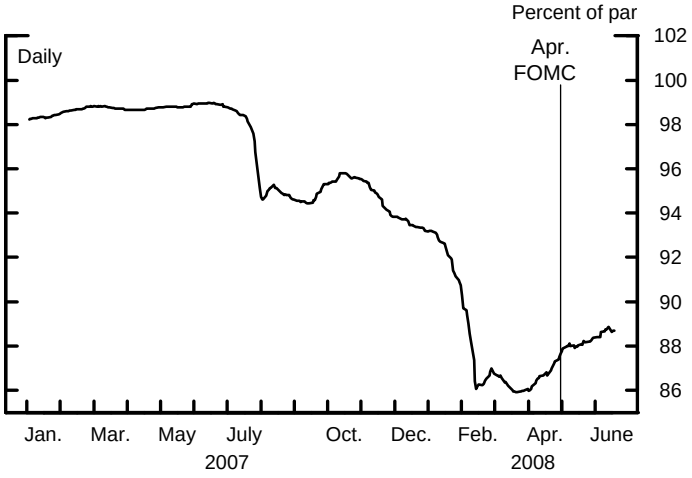
reflecting the refinancing of auction-rate securities (ARS) whose auctions failed. The impact of recent downgrades on financial institutions has been limited to date, but analysts anticipate further write-downs associated with these downgrades; additional downgrades or defaults by financial guarantors would likely generate significant losses for a handful of financial institutions.

(9) Interest rates on 30-year fixed-rate conforming mortgages increased over the intermeeting period, leaving spreads over 10-year Treasury securities little changed (Chart 3). Posted offer rates on 30-year jumbo mortgages also rose, and such credit continued to be difficult to obtain. Issuance of agency residential mortgage-backed securities (MBS) remained strong. Option-adjusted spreads on agency MBS widened on net over the intermeeting period. Credit default swap (CDS) indexes on the government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, edged up. The temporary increase in the conforming loan limit included in the economic stimulus bill has, as yet, had little effect, with the GSEs purchasing small volumes and issuing no securities backed by such loans. Issuance of GNMA securities, which are backed by FHA and VA loans, has increased markedly since the end of 2007. The increase may reflect substitution into such loans by borrowers unable readily to obtain mortgage credit. By contrast, issuance of private-label RMBS backed by nonconforming loans was virtually nonexistent in April, as was issuance of commercial mortgage-backed securities (CMBS). Spreads on CDS indexes for CMBS remained at historically high levels.

(10) Conditions in other consumer lending markets were generally good. Issuance of consumer asset-backed securities (ABS) over the intermeeting period was strong, led by an increase in issuance of paper backed by auto loans. Spreads on consumer ABS began to narrow. Anecdotal reports suggested that policy actions by Congress and the Department of Education helped assuage concerns about student

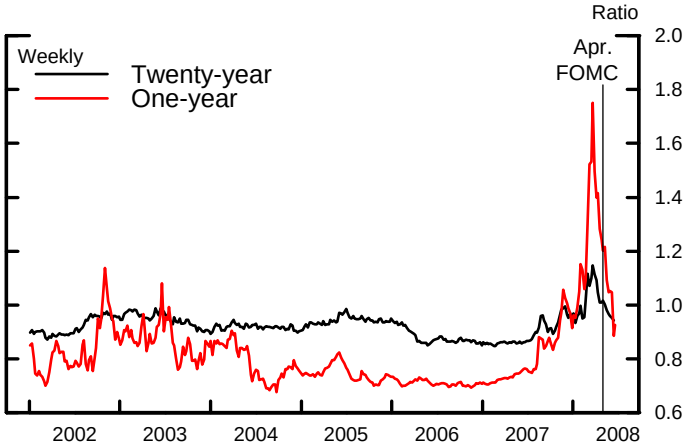
Chart 3
Asset Market Developments

Average bid price on most liquid leveraged loans



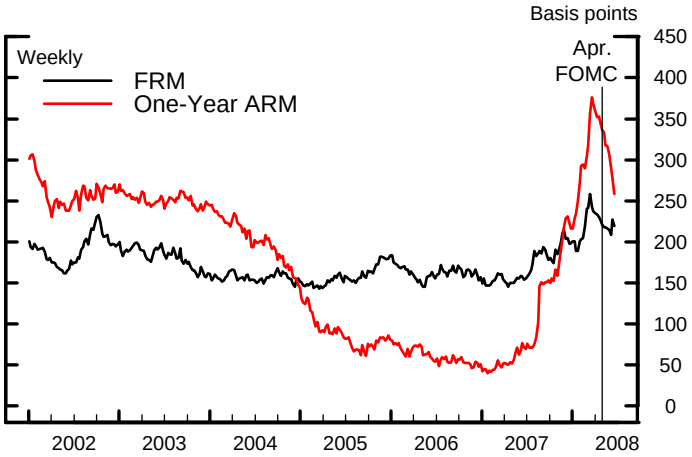
Note. Last observation is for Jun. 18, 2008.
Source. LSTA/LPC Mark-to-Market Pricing on SMi 100 index.

Municipal bond yield ratios



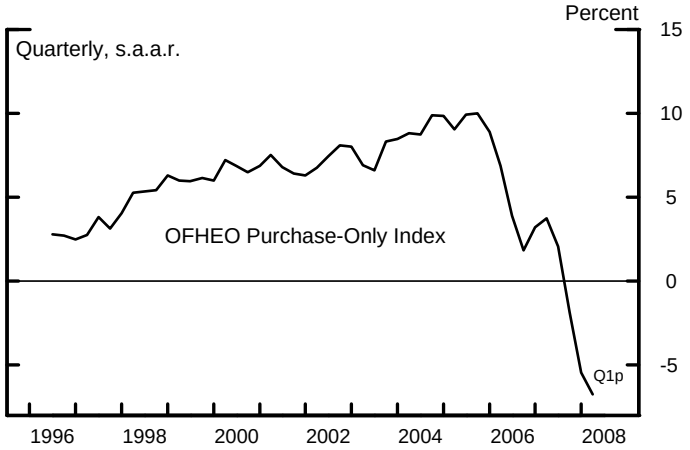
Note. Yields over Treasury. Last observation is for Jun. 12, 2008.
Source. Bloomberg.

Mortgage rate spreads



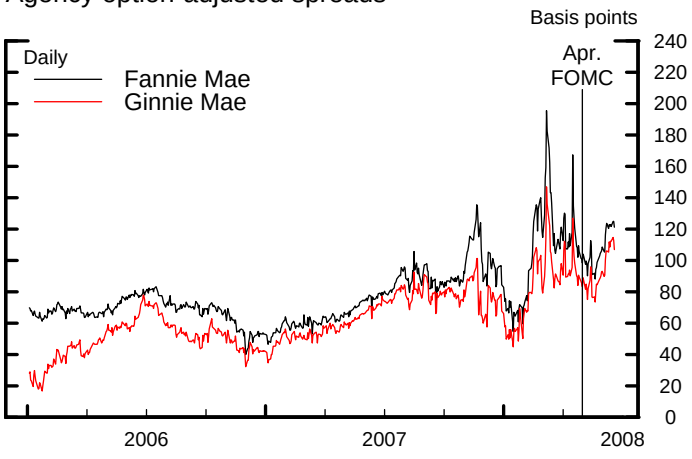
Note. FRM spread relative to ten-year Treasury. ARM spread relative to one-year Treasury. Last weekly observation is for Jun. 18, 2008.
Source. Freddie Mac.

Growth of house prices



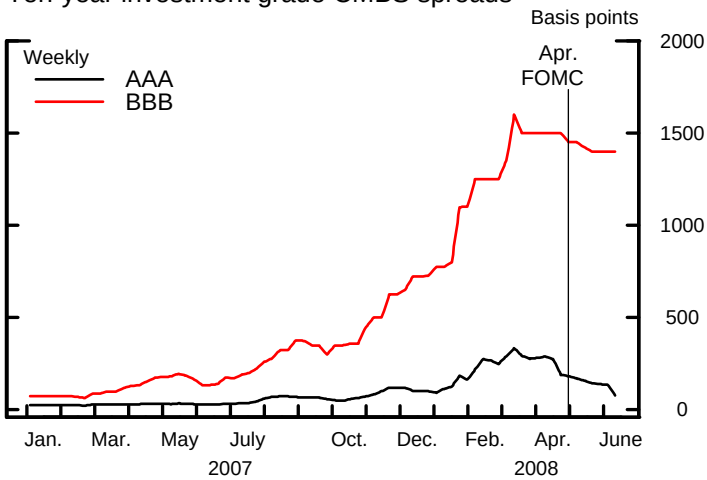
p Projected.

Agency option-adjusted spreads



Note. Spreads over Treasury.
Source. Bloomberg. Last observation is for Jun. 18, 2008.

Ten-year investment grade CMBS spreads



Note. Spreads over swaps. Last weekly observation is for Jun. 11, 2008.
Source. Morgan Stanley.

loan availability for the 2008-09 school year.[4] However, these actions were not designed to support the secondary market and it remains to be seen whether these steps will spur a broader recovery in the student loan market.

Foreign Developments

(11) Foreign credit markets were relatively stable, but foreign bond yields rose noticeably over the period. Although the central banks of the major foreign industrial economies kept policy rates on hold, foreign central bank officials, like their U.S. counterparts, expressed concern about inflationary pressures, leading market participants to significantly revise upward their expected paths for future monetary policy. Yields on sovereign benchmark bonds rose 20 to 60 basis points in those countries (Chart 4). The trade-weighted index of the nominal dollar against the currencies of the major trading partners of the United States increased 1 percent on net and tended to move with market perceptions the relative economic strength of the U.S. versus foreign economies and the relative stances of monetary policies.[5] Overall European equity indexes declined between 6 and 8 percent, led by financial stocks, which fell as banks announced further write-downs for the first quarter, but Japan's headline equity indexes rose about 2 percent.

(12) A number of central banks in emerging market economies tightened policy over the intermeeting period in order to combat rising food and energy prices, and yields on local-currency bonds have risen. Rising energy costs pushed some countries to scale back fuel subsidies, adding to short-term inflationary pressures. Stock markets in the emerging economies generally declined between 1 and 10 percent,

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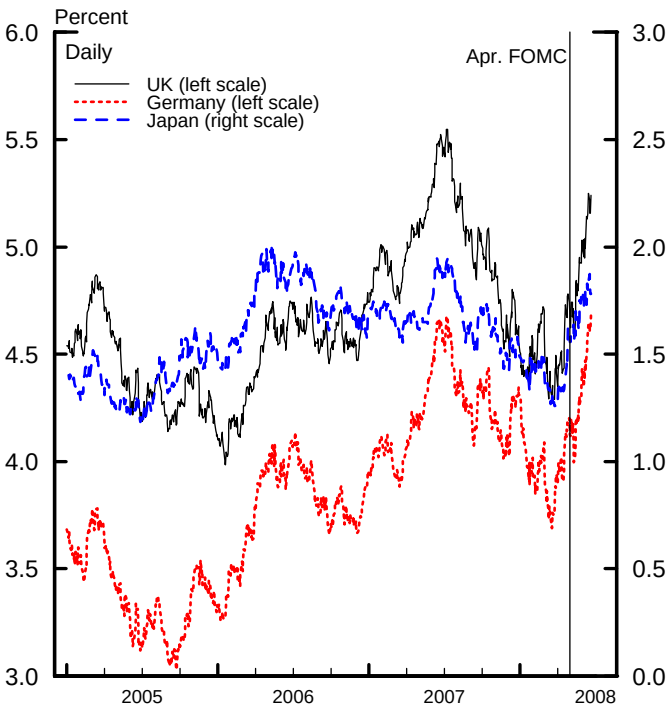
[4] On May 7, the President signed into law the Ensuring Continued Access to Student Loans Act of 2008. The act gave the Department of Education new authority to purchase Stafford and PLUS loans for the 2008-09 academic year. The Department of Education held a briefing on May 20 to present its proposals for implementing its new authority.

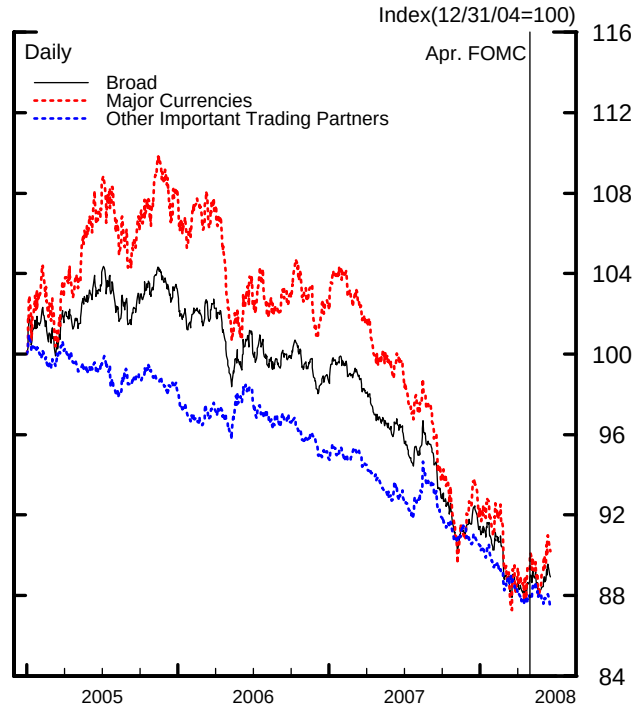
[5] There were no foreign official purchases or sales of dollars by reporting central banks in industrial countries during the intermeeting period.

Chart 4
International Financial Indicators

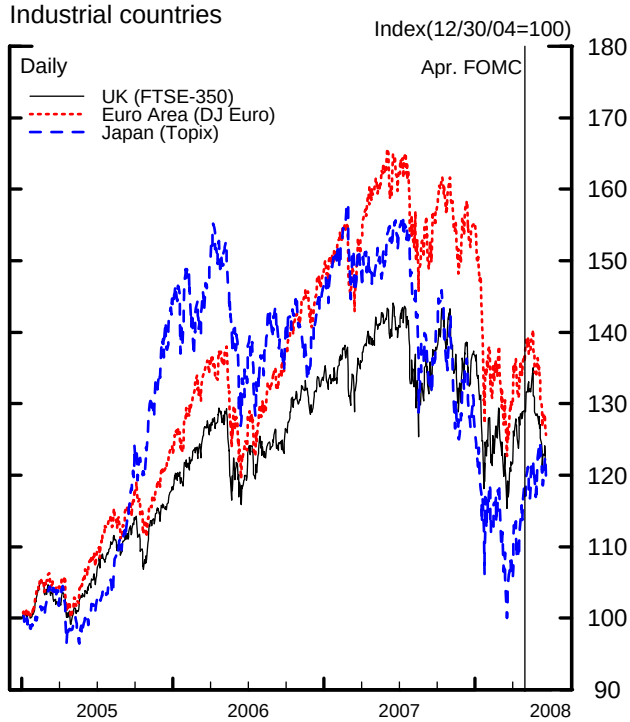
Ten-year government bond yields (nominal)



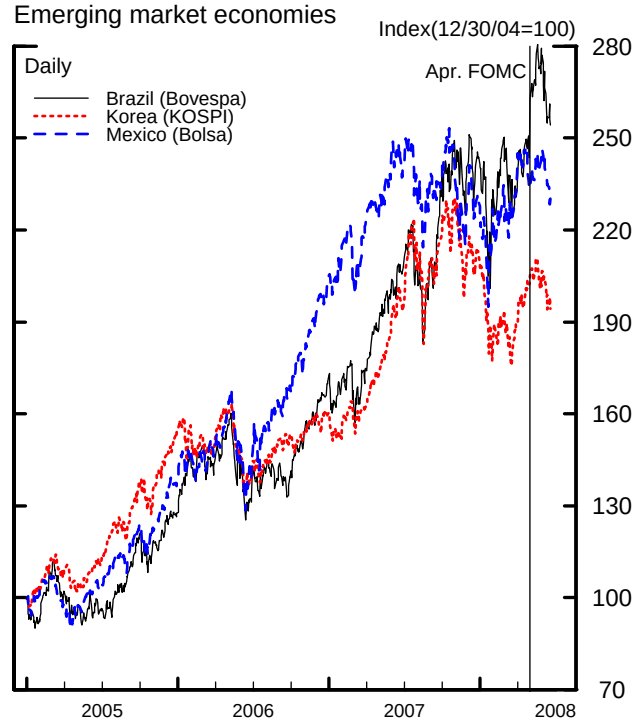
Nominal trade-weighted dollar indexes



Stock price indexes
Industrial countries



Stock price indexes
Emerging market economies



Note. Last daily observation is for June 19, 2008.

although the Shanghai composite fell 25 percent. The trade-weighted index of the dollar against the currencies of the other important trading partners of the United States fell slightly. The dollar has depreciated by 1½ percent against the renminbi since mid-May after remaining essentially unchanged against that currency for most of April, but has appreciated against most other emerging Asian currencies.

Debt and Money

(13) The debt of domestic nonfinancial sectors is projected to be expanding at a 3¾ percent annual rate in the second quarter, down from the 6 percent pace recorded in the first quarter (Chart 5). The slowdown appears to be broad based, with household, business, and federal government debt all declining. Home mortgage debt is estimated to have continued its recent slowdown, in part reflecting falling house prices. Debt in the nonfinancial business sector is on track to decelerate to a 5½ percent annual rate, as a decline in commercial paper issuance and a reduction in C&I loan growth more than offset surges in both investment-grade and speculative-grade bond issuance. The slowdown in C&I lending in part reflects a continued low pace of leveraged buyouts and mergers and acquisitions as well as tighter credit standards and terms at banks. While bond issuance was strong among energy-producing firms, issuance more broadly may have been boosted by the stability of bond yields and spreads and some substitution for commercial paper. Issuance of leveraged loans reportedly continued to be very weak over the intermeeting period, as banks continued to work down their backlogs of previously underwritten loans. Issuance of collateralized loan obligations (CLOs) continued to be extremely weak.

(14) M2 grew at a sluggish 1¾ percent average rate over April and May, down substantially from the strong expansion in the first quarter, which was likely a consequence of investors seeking safety and liquidity. The deceleration was broad based, and was led by a sharp decline in the growth of retail money market mutual

Chart 5
Debt and Money

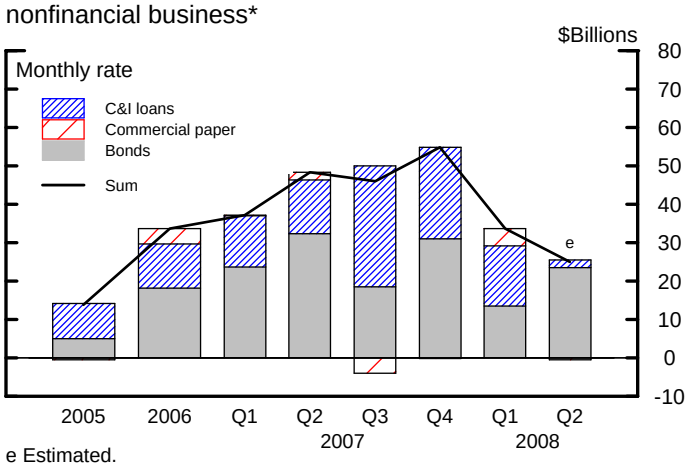
Growth of debt of nonfinancial sectors

Percent, s.a.a.r.

	Total	Business	Household
2006	8.8	9.8	10.2
2007	8.2	11.7	6.8
Q1	8.0	9.4	7.0
Q2	7.2	11.1	7.2
Q3	9.1	13.7	6.4
Q4	7.5	10.8	6.1
2008 Q1	6.1	8.1	3.4
Q2 e	3.8	5.5	2.7

e Estimated.

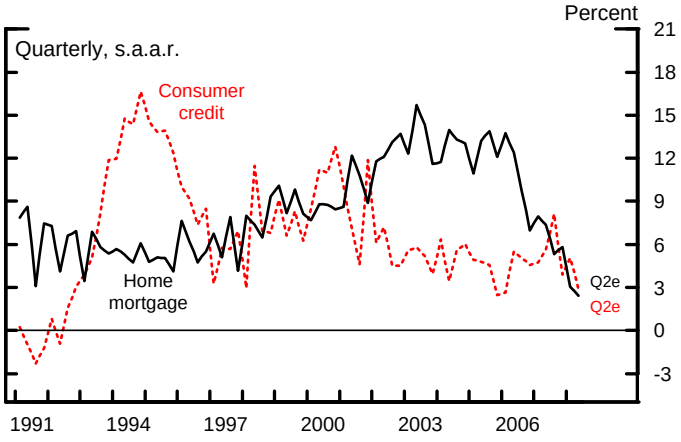
Changes in selected components of debt of nonfinancial business*



e Estimated.

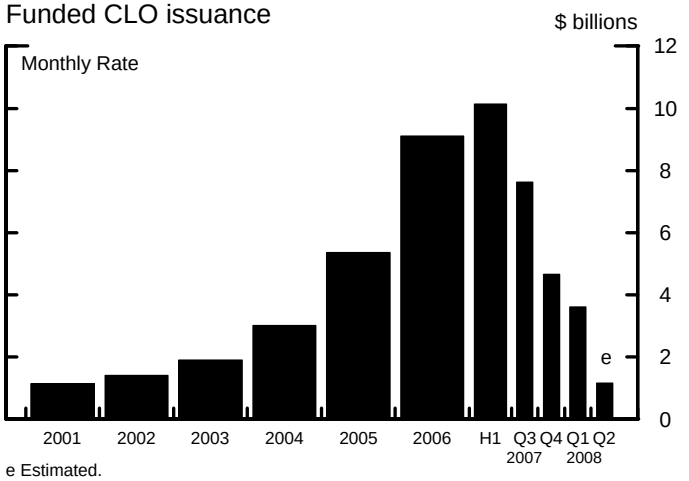
*Commercial paper and C&I loans are seasonally adjusted, bonds are not.

Growth of debt of household sector



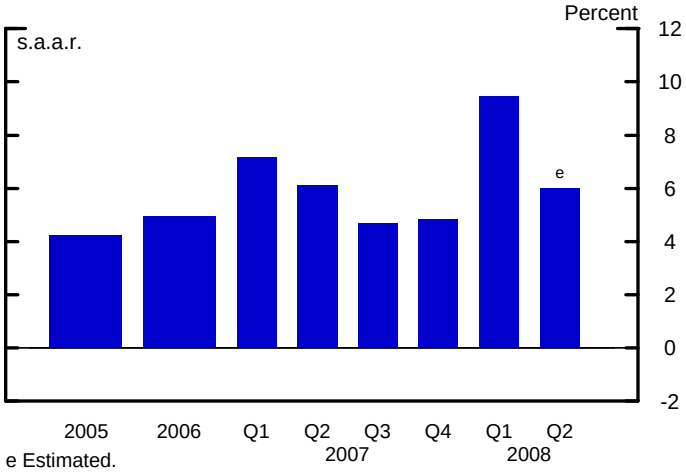
e Estimated.

Funded CLO issuance



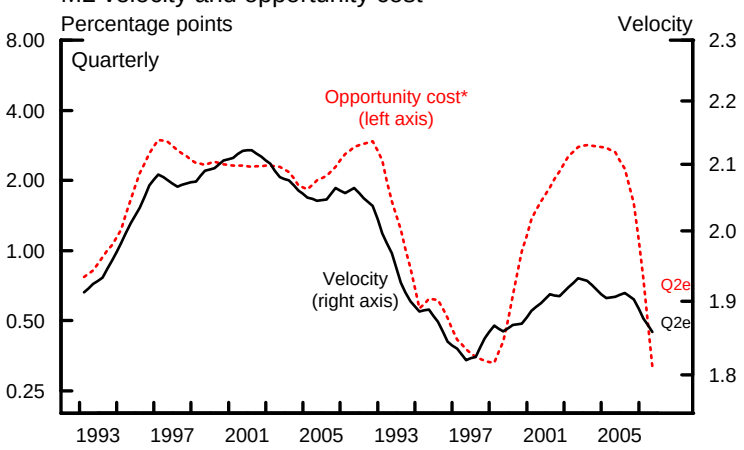
e Estimated.
Source. JPMorgan.

Growth of M2



e Estimated.

M2 velocity and opportunity cost



*Two-quarter moving average.

e Estimated.

funds (MMMFs). The flattening out of MMMFs may be attributable to increased flows into bond mutual funds and a resumption of flows into equity funds following the outflows seen earlier in the period of financial turmoil. Small time deposits contracted, as the spreads of rates paid on these deposits relative to those on other deposits declined. Liquid deposit growth slowed, although monthly figures revealed an increase from April to May, perhaps in part reflecting receipt of economic stimulus payments in the latter month. Currency expanded slightly on balance over the two months.

Economic Outlook

(15) Over the intermeeting period, incoming economic data have been much stronger on balance than expected by the staff, and the Greenbook forecast for real activity over the first half of the year has accordingly been marked up appreciably. However, the staff still expects that ongoing strains in financial markets, combined with the recent surge in oil prices, will restrain real activity in the medium term. At the same time, higher energy costs also point to more inflationary pressures this year and next. Against this backdrop, the Greenbook forecast is now conditioned on an assumption that the target federal funds rate will be held at 2 percent this year and that policy will then be tightened by a total of 75 basis points over 2009. Long-term Treasury yields are projected to edge down this year and next because the staff assumes less tightening of monetary policy than investors apparently anticipate and because term premiums are expected to decline. Stock prices are expected to increase at an annual rate of about 7 percent over the remainder of this year and 12 percent next year, as the equity premium falls towards its long-run mean in response to dissipating macroeconomic risks. The real foreign exchange value of the dollar is assumed to depreciate at a rate of 3 percent per annum over the projection period. Oil futures prices rose sharply over the intermeeting period, and the futures curve shifted from sloping down to being essentially flat. In line with these quotes, the price of West Texas intermediate crude oil is expected to remain around its current level of $135 per barrel.

(16) In this Greenbook forecast, real GDP is projected to expand at an annual rate of about 1¾ percent in the current quarter, 3 percentage points higher than in the April projection. The staff sees a part of the recent unexpected strength as reflecting a shift in the timing of demand, and the growth forecast for the remainder of this year and for 2009 has been marked down a little. The economy is now expected to expand at about a ¾ percent annual pace over the

second half of the year, reflecting the continuing drag from rising energy prices, tight credit conditions, and the decline in residential investment. As these effects wane in 2009, economic growth picks up to about a 2½ percent pace, roughly in line with the staff's upwardly revised estimate of the growth rate of potential output. The revision to the second-quarter growth forecast leaves the level of output only half a percent below potential at mid-year, a notably smaller gap than in the April Greenbook; however, the projected gap widens noticeably over time and by late next year is essentially unchanged from the time of the last meeting. The unemployment rate is projected to hover just below 5¾ percent through the end of next year—nearly a percentage point above the staff's estimate of the NAIRU. The forecast for headline inflation has been marked up since the April Greenbook, largely owing to the further increases in energy and other commodity prices. Total PCE inflation is projected to average about 4½ percent over the second half of 2008 before falling to a bit above 2 percent in 2009. The staff forecast for core PCE inflation is around 2¼ percent both this year and next. Lower-than-expected readings on core inflation in the incoming data were offset by the upward pressure from rising energy prices on core inflation in the second half, leaving the forecast for 2008 as a whole unrevised. However, the staff's projection for core inflation in 2009 is ¼ percentage point higher than in April.

(17) The staff's forecast has been extended beyond 2009 using the FRB/US model with adjustments to ensure consistency with the staff's assessment of longer-run trends. The extended forecast embeds several key assumptions: Monetary policy aims to stabilize PCE inflation in the long run at a level of 1¾ percent; trend multifactor productivity grows a bit above 1 percent per year; the real value of the dollar depreciates steadily at about 1¼ percent per year; fiscal policy is essentially neutral; and energy prices remain roughly constant, but at a higher level than in the April projection. With energy prices higher and resource

slack dissipating more slowly, the forecast trajectories for both PCE inflation and unemployment through 2012 are both above those in the April forecast. The extended period of economic slack drives PCE inflation down to 1¾ percent by the end of 2012, and the federal funds rate moves up to 4¼ percent. Real GDP increases at an average annual rate of 3 percent from 2010 to 2012—nearly ½ percentage point above its projected potential growth rate over that period. This allows the unemployment rate to decline to just above 4¾ percent —the staff's estimate of the NAIRU—by the end of the extended forecast.

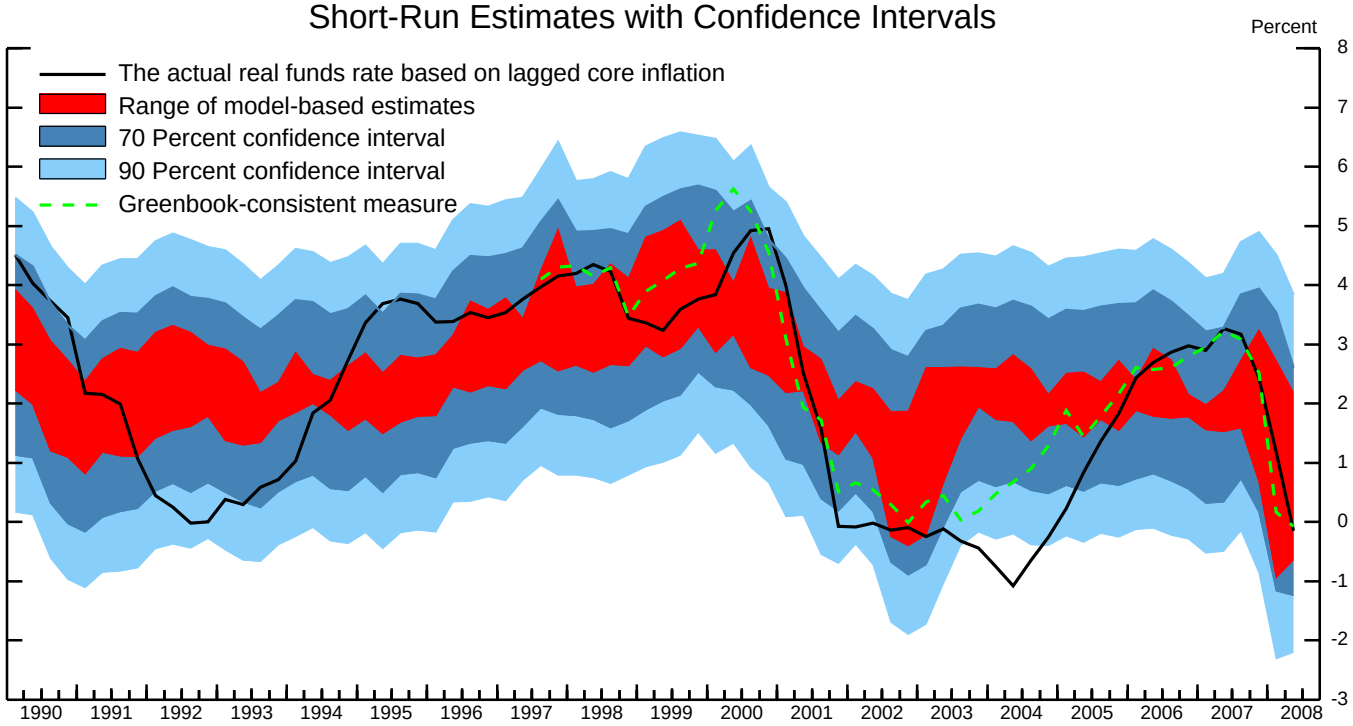
Monetary Policy Strategies

(18) As indicated in Chart 6, the Greenbook-consistent measure of short-run *r** now stands at -0.1 percent, nearly half a percentage point higher than in the April Bluebook, reflecting the upward revision to the staff's assessment of aggregate demand in response to incoming economic data. The FRB/US model-based measure of short-run *r** is essentially unchanged at 0.4 percent, as a higher value of the equity premium offsets the somewhat stronger initial conditions for aggregate demand.[6] The other two model-based estimates of short-run *r** are also roughly unchanged from April and continue to span a wide interval, currently -0.6 percent to 2.2 percent. The actual value of the real federal funds rate is now -0.2 percent if measured on a basis that is methodologically consistent with the assumptions used in the model-based estimates of *r**, that is, using realized core PCE inflation over the past four quarters as a proxy for expected inflation. However, alternative estimates of the actual real rate—introduced in this Bluebook—highlight the extent to which an estimate of the real rate is sensitive to

[6] The FRB/US model-based estimate of *r** shown in the April Bluebook treated the Greenbook projection through 2008:Q2 as actual data, while the current estimate is based on a simulation that treats the staff forecast through the third quarter as data. This difference accounts for the upward revision to the equity premium.

Chart 6
Equilibrium Real Federal Funds Rate

Short-Run Estimates with Confidence Intervals



Short-Run and Medium-Run Measures

	Current Estimate	*Previous Bluebook*
Short-Run Measures		
Single-equation model	2.2	*2.1*
Small structural model	-0.6	*-0.8*
Large model (FRB/US)	0.4	*0.3*
Confidence intervals for three model-based estimates		
70 percent confidence interval	-1.2 - 2.6	
90 percent confidence interval	-2.2 - 3.8	
Greenbook-consistent measure	-0.1	*-0.5*
Medium-Run Measures		
Single-equation model	2.2	*2.2*
Small structural model	1.8	*1.7*
Confidence intervals for two model-based estimates		
70 percent confidence interval	1.1 - 2.9	
90 percent confidence interval	0.5 - 3.7	
TIPS-based factor model	2.0	*2.0*
Measures of Actual Real Federal Funds Rate		
Based on lagged core inflation	-0.2	*0.1*
Based on lagged headline inflation	-1.3	*-1.1**
Based on Greenbook projection of headline inflation	-1.3	*-0.7**

* This measure was not reported in the April Bluebook.

Note: Appendix A provides background information regarding the construction of these measures and confidence intervals.

the use of alternative proxies for expected inflation. For example, the real funds rate is about 1 percentage point lower when based on overall PCE inflation.[7]

(19) As shown in Chart 7, the recent upward shift in the projected path of oil prices has had a marked influence on the optimal control simulations of the FRB/US model; compared with those in April, these simulations portray a noticeable worsening of the tradeoff between unemployment and inflation and suggest a substantially tighter path of monetary policy over much of the next three years.[8] (The initial value of the federal funds rate is much lower this round, since the simulations now take the lower level of the actual funds rate in the current quarter as given.) For an inflation goal of 1½ percent (the left-hand set of charts), the optimal funds rate climbs from the current target rate of 2 percent to about 3 percent by the end of 2010—about 75 basis points higher than in the April Bluebook—and then gradually rises to nearly 4 percent by 2012. With an inflation goal of 2 percent (the right-hand set of charts), the funds rate remains close to its current value through mid-2010 and then rises to above 4 percent by the end of the simulation. Under either inflation goal, the unemployment rate declines more slowly back towards the long-run NAIRU than in the previous Bluebook, reflecting a tighter average stance of monetary policy over the simulation period.

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[7] Care should be used in comparing the new measures of the actual real federal funds rate to the *r** values shown here. In order to make such a comparison, the calculation of *r** needs to be adjusted to put it on the same basis as the measure of the actual real federal funds rate to be used. In addition, the new measures of the actual real federal funds rate based on headline inflation are more volatile than the measure based on core inflation because they are influenced to a greater extent by potentially large swings in energy prices. As a result, it may be preferable to average the values of the actual real federal funds rate over several quarters before making the comparison to *r**.

[8] In these simulations, policymakers place equal weight on keeping core PCE inflation close to a specified goal, on keeping unemployment close to the long-run NAIRU, and on avoiding changes in the nominal federal funds rate. Moreover, policymakers and participants in financial markets are assumed to understand fully the forces shaping the economic outlook, whereas households and firms form their expectations using more limited information.

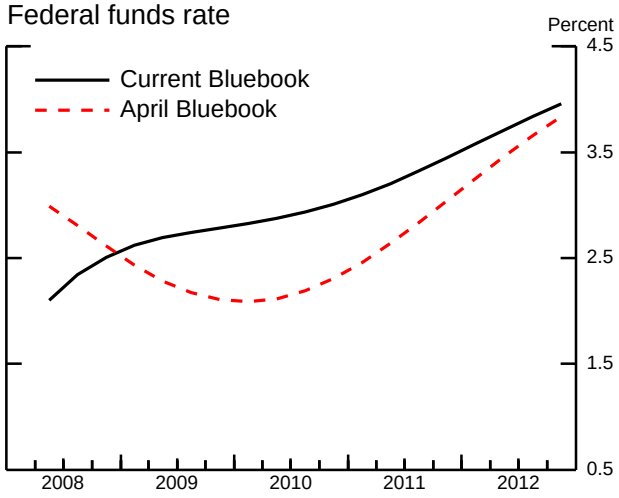
Chart 7

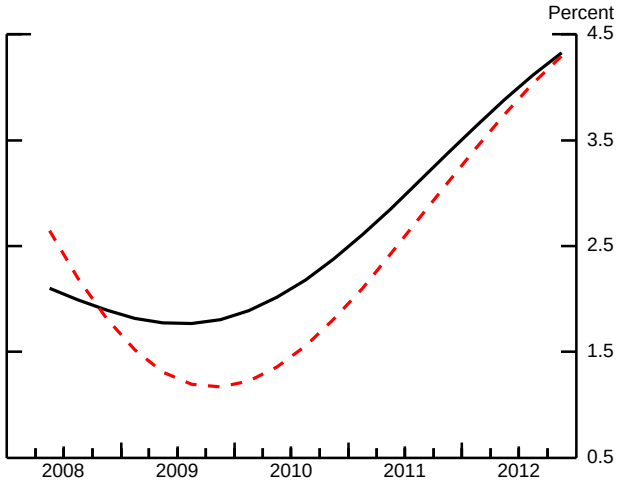
Optimal Policy Under Alternative Inflation Goals

1½ Percent Inflation Goal

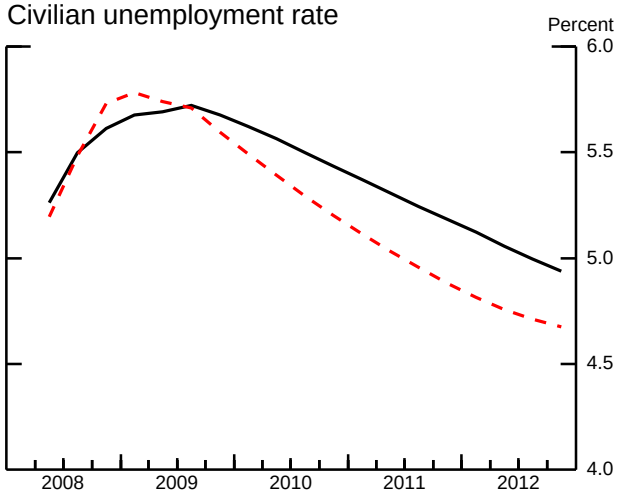
2 Percent Inflation Goal

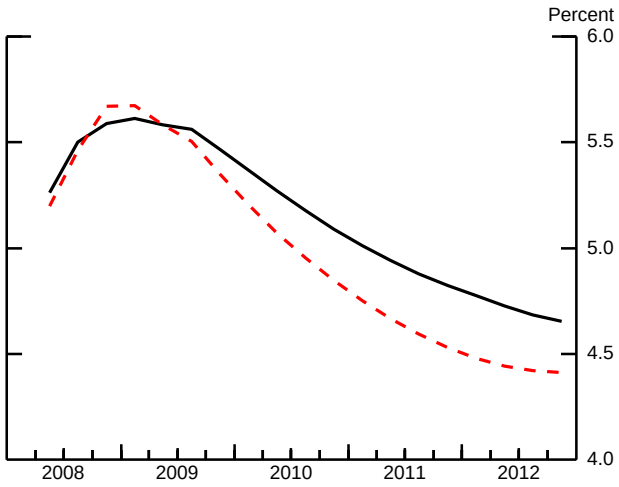
Federal funds rate





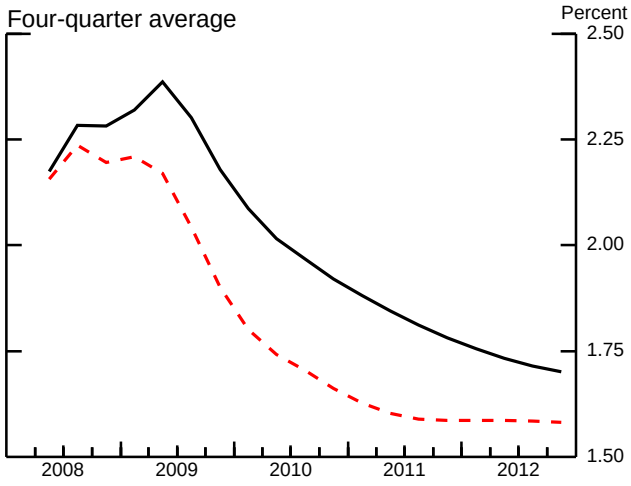
Civilian unemployment rate

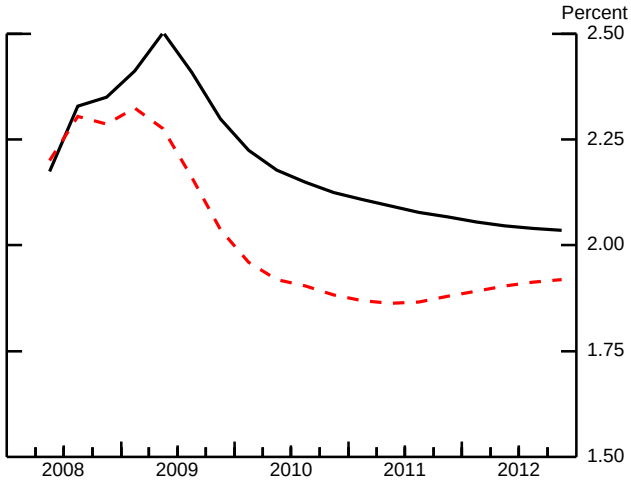




Core PCE inflation

Four-quarter average





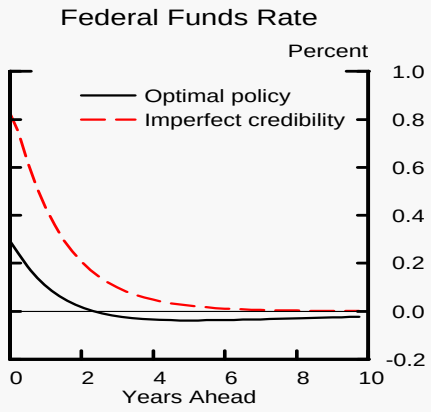
Even with a softer labor market, however, the trajectory for core PCE inflation from 2009 through the end of 2011 is nearly ¼ percentage point higher than in April, reflecting the effects of higher energy prices and somewhat higher long-run inflation expectations. (See box "Oil Shocks and Monetary Policy.")

(20) As depicted in Chart 8, the outcome-based monetary policy rule prescribes a funds rate that stays around 2 percent until early 2009 and then rises to a plateau of about 3½ percent from 2010 onwards. Financial markets incorporate a higher path: Investors anticipate that the funds rate will reach 3½ percent by late 2009 and then rise to about 4½ percent during 2011. Options prices suggest that investors' confidence intervals surrounding their monetary policy forecasts have widened significantly. The near-term prescriptions from the simple policy rules proposed by Taylor (1993, 1999) are ¼ to ½ percentage point higher than in the April Bluebook, reflecting a modestly narrower output gap as well as somewhat higher core inflation. The Taylor (1999) rule places relatively greater weight on the output gap than does the 1993 version and hence prescribes a somewhat lower funds rate.[9] Both versions prescribe funds rates that are noticeably higher than the expectations of financial market participants. The prescriptions from the first-difference rule are significantly lower than shown in the April Bluebook, reflecting the policy inertia of this rule.

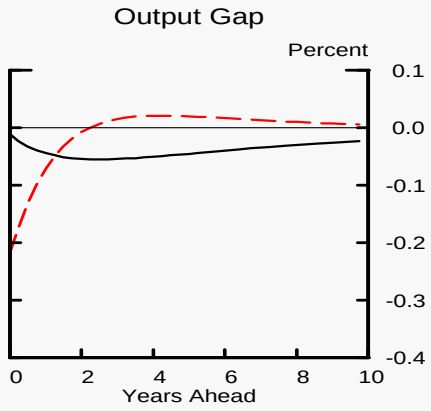
[9] Starting in this Bluebook, prescriptions from the Taylor (1999) rule with higher r^* will no longer be presented in Chart 8. The rationale for the use of such a specification was associated with higher productivity growth rates than the staff anticipates for coming years.

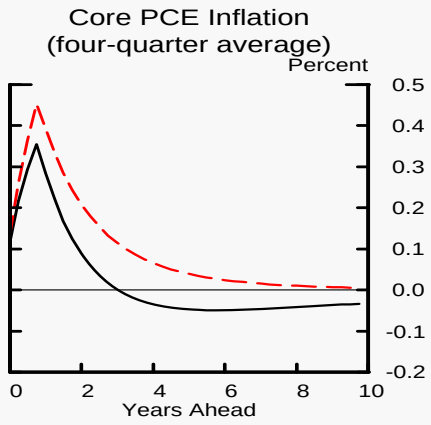
Oil Shocks and Monetary Policy

For an oil-importing economy, an increase in energy prices tends to reduce economic growth and boost inflation. Given these opposing tendencies, the implications for the optimal path of policy can be determined only through use of a specific model and an assumed objective function. In this box, a dynamic stochastic general equilibrium model developed by the staff is used to consider the optimal policy response to a permanent 50 percent rise in the real price of oil. In the model, inflation is determined by a Phillips curve tradeoff between current inflation and current output, with forward-looking inflation expectations. All else equal, core prices rise in response to an oil price shock because higher energy costs push up marginal costs at any given level of output. The central bank is assumed to have the objective of minimizing squared deviations of inflation from a target level and output from potential.[1]



In the first simulation, the central bank's commitment to the optimal policy – and to a fixed long-run inflation target – is assumed to be fully credible (solid lines). Two features of this simulation are critical for understanding the responses of inflation and output. First, taking expected inflation as given, the central bank raises the funds rate (top panel), thereby pushing output below potential (middle panel) and restraining the rise in core inflation (lower panel). Second, the central bank, by committing to return inflation to target relatively quickly – and even to moving it somewhat below target for a time – limits the effect of the shock on inflation expectations. As a result, wage and price setters choose smaller increases in wages and prices in the near term, reducing the effect of the oil shock on inflation. To implement this policy, however, the central bank must keep output a bit below potential for a protracted period.





In the second simulation, policymakers are assumed to be unable to commit credibly to future policy actions or to the long-run inflation target, and hence the oil price shock induces a long-lasting rise in the private sector's perception of the central bank's inflation target. As denoted by the dashed lines, policy

[1] A detailed analysis of the implications of an increase in energy prices for the economy and monetary policy is presented in the memo to the Committee, "Macroeconomic and Monetary Policy Implications of Rising Oil Prices," that will be distributed on June 20, 2008.

Oil Shocks and Monetary Policy (Cont.)

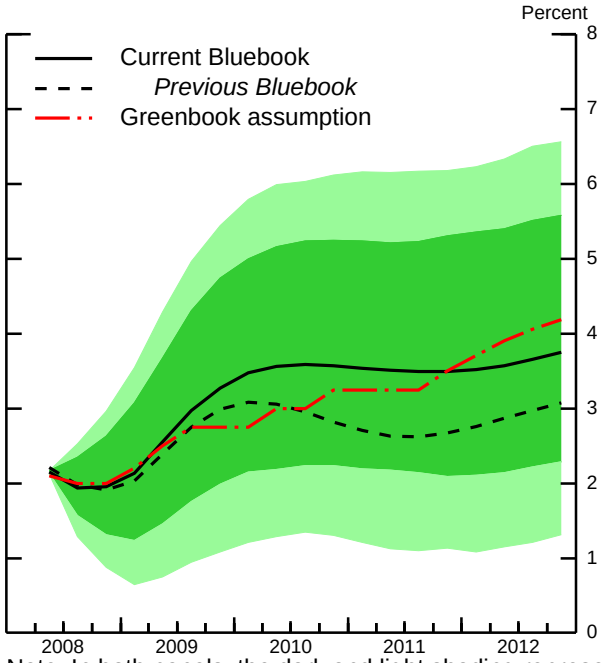
in this simulation is tightened considerably further than under commitment, output shows a sharper initial contraction, and inflation rises by more and remains elevated for a protracted period.

Thus, the appropriate policy following an oil price shock depends on the credibility of the central bank. With credibility, the central bank needs to raise the federal funds rate only about 25 basis points in response to the specified shock, and it gradually returns the rate to baseline over about two years. The resulting cumulative loss in output is fairly small, though the output gap closes only gradually. Inflation rises about a third of a percentage point before falling a bit below target by year three. By contrast, in the simulation without full credibility, the central bank must raise the federal funds rate more than 75 basis points following the increase in oil prices. As a result of this larger policy move, output falls significantly further than in the case with credibility before rebounding. Despite the larger downturn, inflation rises about half a percentage point and returns to near its baseline level only after about five years.

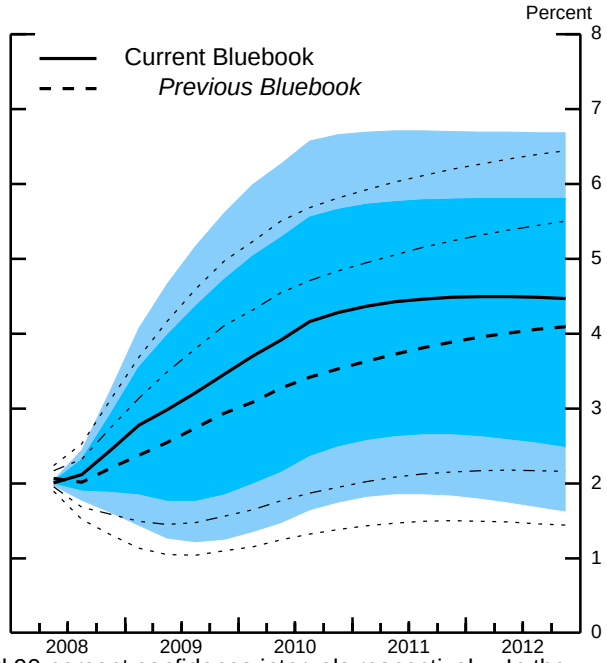
Chart 8

The Policy Outlook in an Uncertain Environment

FRB/US Model Simulations of Estimated Outcome-Based Rule



Information from Financial Markets



Note: In both panels, the dark and light shading represent the 70 and 90 percent confidence intervals respectively. In the right hand panel, the thin dotted lines represent the confidence intervals shown in the previous Bluebook.

Near-Term Prescriptions of Simple Policy Rules

	1½ Percent Inflation Objective		2 Percent Inflation Objective	
	2008Q3	2008Q4	2008Q3	2008Q4
Taylor (1993) rule	**4.2**	**4.0**	**4.0**	**3.8**
Previous Bluebook	*4.0*	*3.8*	*3.7*	*3.5*
Taylor (1999) rule	**3.8**	**3.3**	**3.6**	**3.1**
Previous Bluebook	*3.2*	*2.8*	*3.0*	*2.6*
First-difference rule	**2.0**	**2.1**	**1.7**	**1.6**
Previous Bluebook	*2.8*	*3.1*	*2.3*	*2.3*

Memo

	2008Q3	2008Q4
Estimated outcome-based rule	1.9	2.0
Estimated forecast-based rule	1.8	1.8
Greenbook assumption	2.0	2.0
Fed funds futures	2.1	2.4
Median expectation of primary dealers	2.0	2.0

Note: Appendix B provides background information regarding the specification of each rule and the methodology used in constructing confidence intervals and near-term prescriptions.

Short-Run Policy Alternatives

(21) This Bluebook presents three policy alternatives for the Committee's consideration, summarized in Table 1. Under Alternative A, the Committee would reduce the federal funds rate target by 25 basis points to 1¾ percent, and its statement would suggest that the further easing of policy was motivated by a relatively downbeat assessment of the growth outlook. Under Alternative B, the target would be maintained at 2 percent, but the statement would point both to somewhat diminished downside risks to growth and increased upside risks to inflation. Alternative C envisions a 25 basis points tightening to 2¼ percent; its statement expresses continued concern about inflation, but does not strongly suggest that further policy firming is in train.

(22) Given the recent sharp increase in prices of energy and agricultural commodities, inflation is likely to pick up in the very near term. Accordingly, whereas all three alternatives retain the language from the April statement that "the Committee expects inflation to moderate," the time reference for this prediction is changed from "in coming quarters" to "later this year and next year," hinting that the moderation in inflation may be somewhat longer in coming. None of the alternatives provides any explicit weighting of the risks to the Committee's objectives. As usual, the Committee could formulate its statement using language from more than one alternative. Table 1 may need to be modified once participants have submitted their economic projections in order to ensure consistency between the draft statements and participants' projections and accompanying narratives.

(23) If the Committee reads the incoming information as pointing to growth risks that are a bit less skewed to the downside than in April and inflation risks that are a bit more tilted toward the upside, then it may wish to couple an unchanged stance of policy at this meeting with the statement proposed for **Alternative B**. In

Table 1: Alternative Language for the June 2008 FOMC Announcement				
	April FOMC	**Alternative A**	**Alternative B**	**Alternative C**
Policy Decision	1. The Federal Open Market Committee decided today to lower its target for the federal funds rate 25 basis points to 2 percent.	The Federal Open Market Committee decided today to lower its target for the federal funds rate 25 basis points to 1-3/4 percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 2 percent.	The Federal Open Market Committee decided today to raise its target for the federal funds rate 25 basis points to 2-1/4 percent.
Rationale	2. Recent information indicates that economic activity remains weak. Household and business spending has been subdued and labor markets have softened further. Financial markets remain under considerable stress, and tight credit conditions and the deepening housing contraction are likely to weigh on economic growth over the next few quarters.	Recent information indicates that economic activity has remained weak in recent months. Although consumer spending appears to have firmed somewhat, residential investment has continued to contract sharply and labor markets have softened further. Financial markets remain under considerable stress, and tight credit conditions and the deepening housing contraction are likely to weigh on economic growth over the next few quarters.	Recent information indicates that overall economic activity continues to expand, partly reflecting some firming in household spending. However, labor markets have softened further and financial markets remain under considerable stress. Tight credit conditions, the ongoing housing contraction, and the rise in energy prices are likely to weigh on economic growth over the next few quarters.	Recent information indicates that overall economic activity continues to expand, partly reflecting some firming in household spending. However, labor markets have softened further and financial markets remain under considerable stress. Tight credit conditions, the ongoing housing contraction, and the rise in energy prices are likely to weigh on economic growth over the next few quarters.
	3. Although readings on core inflation have improved somewhat, energy and other commodity prices have increased, and some indicators of inflation expectations have risen in recent months. The Committee expects inflation to moderate in coming quarters, reflecting a projected leveling-out of energy and other commodity prices and an easing of pressures on resource utilization. Still, uncertainty about the inflation outlook remains high. It will be necessary to continue to monitor inflation developments carefully.	Although energy prices have increased further and some indicators of inflation expectations have risen in recent months, core inflation has been stable of late. The Committee expects inflation to moderate later this year and next year, reflecting a projected leveling-out of energy prices and an easing of pressures on resource utilization. Still, uncertainty about the inflation outlook remains high. It will be necessary to continue to monitor inflation developments carefully.	The Committee expects inflation to moderate later this year and next year. However, in light of the continued increases in the prices of energy and some other commodities and the elevated state of some indicators of inflation expectations, uncertainty about the inflation outlook remains high.	Overall inflation has been elevated, energy prices have continued to increase, and some indicators of inflation expectations have risen further. The Committee expects inflation to moderate later this year and next year, partly reflecting today's policy action. Still, uncertainty about the inflation outlook remains high. It will be necessary to continue to monitor inflation developments carefully.
Assessment of Risk	4. The substantial easing of monetary policy to date, combined with ongoing measures to foster market liquidity, should help to promote moderate growth over time and to mitigate risks to economic activity. The Committee will continue to monitor economic and financial developments and will act as needed to promote sustainable economic growth and price stability.	The substantial easing of monetary policy to date, combined with ongoing measures to foster market liquidity, should help to promote moderate growth over time and to mitigate risks to economic activity. The Committee will continue to monitor economic and financial developments and will act as needed to promote sustainable economic growth and price stability.	The substantial easing of monetary policy to date, combined with ongoing measures to foster market liquidity, should help to promote moderate growth over time. Although downside risks to growth remain, they appear to have diminished somewhat, and the upside risks to near-term inflation and inflation expectations have increased. The Committee will continue to monitor economic and financial developments and will act as needed to promote sustainable economic growth and price stability.	Future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information on the economy and financial conditions.

view of the recent household and business spending data, as well as some incremental improvement in financial conditions over the intermeeting period, the Committee may now believe that the real federal funds rate is near its equilibrium level. Indeed, the real federal funds rate based on lagged four-quarter core PCE inflation is now very close to its Greenbook-consistent equilibrium value (Chart 6). Thus, although the current level of inflation may be seen as somewhat elevated relative to the Committee's longer-run objectives, members may judge that the current stance of policy is consistent with a modal outlook for a gradual closing of the output gap and modest downward pressure on core inflation over the next few years. If members anticipate that the factors that are currently restraining economic growth will gradually dissipate going forward, then they may believe that policy ought to remain on hold for a while, before gradually beginning to firm. Indeed, the optimal-control simulation with an inflation goal of 2 percent, shown in Chart 7, prescribes a trajectory for the target funds rate that hovers around the current target for the next year or so and subsequently rises. These considerations might argue for an unchanged stance of policy for the time being, coupled with a statement that suggests that policy is more likely to firm going forward than to ease. Members may also see the current constellation of risks as suggesting that policy should stand pat for now. Although recent developments imply some diminution in the risk of an adverse feedback loop between financial markets and the real economy, downside risks to growth persist: Housing markets remain very weak, labor markets have deteriorated further, and record energy prices are likely to weigh on consumer sentiment and overall growth. On the other hand, inflation risks appear to have increased: Rising energy prices and somewhat less resource slack than had been expected may be seen as adding to inflationary pressures, and many indicators of inflation expectations have drifted up this year—a trend that has continued to some extent since the last FOMC meeting. With these crosscurrents,

the Committee may view the current degree of monetary policy accommodation as appropriate and wish to allow time for more information to accumulate before adjusting the stance of policy in either direction.

(24) The discussion of the growth outlook in the statement proposed for Alternative B replaces the assessment in the April FOMC statement that economic growth remains weak by noting instead that overall economic activity continues to expand, and the firming in consumer spending data is cited as providing some support to aggregate demand. However, the discussion of the outlook for economic activity retains some of the more downbeat language from the previous statement, and adds the rise in energy prices to the list of factors that are seen as likely to restrain growth going forward. The housing contraction is described as "ongoing" rather than "deepening" to avoid the suggestion that housing markets are deteriorating more sharply than before. Meanwhile, the inflation paragraph has a more hawkish tone than in the April statement. The observation that "readings on core inflation have improved somewhat" is deleted in light of the fact that core inflation readings moderated during the spring but have flattened out more recently. The statement suggests that inflation will moderate, but, unlike the previous statement, omits discussion of the economic forces that might cause this to occur. Instead, the continued rise in energy and commodity prices and some indications of heightened inflation expectations are cited as factors that have increased the uncertainty about inflation prospects. Although agricultural commodity prices have increased further since the last FOMC meeting, other commodity prices, including those of many metals, have declined markedly. Accordingly, the draft language points to further increases in the prices of "energy and *some* other commodities." The balance of risks assessment is unchanged from April, except for the addition of a sentence that judges that there are downside risks to growth—which appear to have diminished somewhat—and upside risks to

near-term inflation and inflation expectations. The two opposing risks are not explicitly compared, but since the sentence ends on the discussion of upside risks to inflation, markets may read it as suggesting that increased upside inflation risks are now the greater policy concern of the Committee.

(25) Futures and options quotes suggest that investors think it highly probable that policy will be left unchanged at this meeting, but expect policy tightening to begin later this year, perhaps as soon as the August meeting. The combination of an unchanged funds rate and the slight implicit tilt towards upside risks envisioned under Alternative B seems broadly consistent with these expectations, though it may cause investors to push back their expectations for the onset of policy tightening a bit. Short-term interest rates might edge down, but longer-term rates would probably be little changed.

(26) If, in view of recent developments, the Committee judges that the growth outlook has improved appreciably or that inflationary pressures have risen significantly, then it may prefer to tighten policy by 25 basis points at this meeting, as in **Alternative C**. Also, members may see prompter firming than assumed in the Greenbook as appropriate if they are more optimistic than the staff about growth prospects in the second half of the year—as they were in their economic projections in April. Indeed, the current stance of monetary policy might now be viewed as giving excessive support to aggregate demand—some measures of real short-term interest rates have declined further over the intermeeting period, and members may believe that this will have a larger effect on spending than envisioned by the staff. Risk considerations also might argue for beginning to firm policy relatively soon. In particular, since last August, the Committee has eased policy aggressively, in part to mitigate downside risks to growth stemming from financial market turmoil. However, financial market conditions have improved somewhat in recent months: Risk spreads have generally declined, bond

issuance has picked up, and many financial institutions have been successful in raising new capital. In these circumstances, the Committee might see it as important to be prompt in reversing the earlier aggressive easing of policy. Members may also be worried that the recent rise in many measures of inflation expectations could presage a more serious unmooring of inflation expectations that would prove costly to reverse later, along the lines of the "Higher Inflation Expectations" scenario. In particular, members might be concerned that, in current circumstances, the Committee could be perceived as willing to tolerate the inflationary consequences of higher energy prices and less resource slack. Also, they may think that heightened inflation pressures could persist to a greater degree than incorporated in the staff forecast: Oil prices have soared over the last year, even as futures quotes consistently implied that they were about to level out. Members may prefer a tighter stance of policy if they are worried that this pattern could continue (along the lines of the "Ongoing Commodity Price Pressures" scenario), or if they believe that the pass-through of rising food and energy prices into core inflation may turn out to be greater than envisioned by the staff. Finally, the Committee might share the staff's assessment of the underlying forces shaping the economy, but may prefer a tighter stance of policy in order to foster a more rapid moderation in inflation than is foreseen in the staff forecast.

(27) The discussion of economic activity in the proposed statement for Alternative C is identical to that in Alternative B. The relatively downbeat assessment of the growth outlook might suggest to markets that adoption of this alternative did not necessarily represent the start of a rapid firming in policy. However, the inflation paragraph in Alternative C points to the elevated level of headline inflation and acknowledges that some indicators of inflation expectations have increased further—referring to the increase in short-term inflation compensation and in some short-term survey measures of inflation expectations

over the intermeeting period. Under this alternative, the firming in policy would be cited as a factor that the Committee expects to cause inflation to moderate. However, the risks that attend this expectation would be highlighted by indicating that "uncertainty about the inflation outlook remains high" and that inflation developments will continue to be monitored carefully, as in the April FOMC statement. The final paragraph of Alternative C has no balance of risks assessment, but simply notes that "future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth."

(28) Investors place only small odds on a rate hike at this meeting, and thus they would be surprised by the adoption of Alternative C. The expected path of policy over coming quarters would likely be marked up somewhat, notwithstanding the relatively pessimistic growth paragraph and the absence of any explicit mention of inflation risks. Accordingly, short-term interest rates would rise and equity prices would fall. There is a risk that these moves could be quite pronounced if investors interpreted the adoption of this alternative as signaling a substantially more rapid pace of policy tightening than had been anticipated. However, longer-term nominal interest rates and inflation compensation might decline if the Committee's decision caused investors to mark down their expectations for inflation at longer horizons. The foreign exchange value of the dollar would probably appreciate. Conditions in short-term funding markets could worsen once again.

(29) If the Committee remains particularly worried about downside risks to the outlook for economic activity, then it may prefer to ease policy by another quarter point at this meeting, as in **Alternative A**. The unemployment rate has increased sharply in recent months; in the past, such sharp increases have always been accompanied by recessions. Mortgage rates and corporate bond yields have risen over the intermeeting period, tightening financial conditions and adding to

the restraint on aggregate demand. Members may also view financial market functioning as still quite fragile: Short-term funding markets remain strained, financial firms' share prices have fallen sharply over the intermeeting period, and some financial institutions have reported large losses and their credit ratings have been downgraded. A little more policy accommodation may be seen as appropriate insurance against the macroeconomic consequences of the risk that financial market functioning might deteriorate once again. The Committee might also be concerned that the reasonably firm consumer spending data in the second quarter might simply reflect a greater degree of anticipatory spending by households of their fiscal stimulus rebates than assumed in the staff forecast, implying that growth in the second half of the year could be lower as this effect wanes. Indeed, the apparent resilience in economic activity could be interpreted as just a delay in the possible onset of a cyclical downturn, along the lines of the "Recession" alternative scenario in the Greenbook. Although the recent sharp increases in energy prices may well add to inflationary pressures in the short run, they are also likely to weigh on household and business spending. In such circumstances, the Committee might think that there will be sufficient resource slack to contain inflation pressures, even with a slight further easing of policy.

(30) The discussion of recent developments and the outlook for economic activity and inflation in the draft statement accompanying Alternative A is not much changed from the April FOMC statement. The apparent strength in consumer spending in the second quarter is acknowledged, but the language describing the outlook remains quite downbeat. In the first sentence of the inflation paragraph, the reference to core inflation having "improved" is updated to describe recent readings as "stable," consistent with the incoming core inflation data. The phrases in that sentence are reordered to emphasize the point that core inflation has been stable. Alternative A gives no explicit assessment of the risks to

either growth or inflation, but simply repeats the risk assessment paragraph from the previous statement, pointing to liquidity measures and the cumulative easing of policy as providing support to growth.

(31) With investors expecting the funds rate to be increased this year, the adoption of Alternative A would surprise financial markets. Short- and intermediate-term interest rates would fall, but long-term nominal Treasury yields and measures of inflation compensation would probably increase, as investors came to perceive the Committee as willing to tolerate a higher trajectory of inflation than had been thought. Equity prices might rise, while it is likely that the foreign exchange value of the dollar would depreciate.

Money and Debt Forecasts

(32) M2 is projected to expand at about a 7¾ percent annual pace in the first half of 2008—faster than nominal GDP—as a result of the lagged effects of falling opportunity costs and heightened demand for safe and liquid assets. Under the Greenbook forecast, M2 growth is expected to slow to a 3½ percent annual rate in the second half, as opportunity costs start to rise and the continued gradual improvement in financial market conditions leads the shift to safe and liquid assets to unwind. For the year as a whole, M2 is projected to expand about 5¾ percent. In 2009, M2 is expected to advance about 4 percent, slower than nominal GDP, largely reflecting the further increase in the opportunity cost of holding M2 assets as short-term interest rates rise.

(33) Growth of domestic nonfinancial sector debt is expected to slow to an annual rate of around 4¾ percent in 2008 and 4½ percent in 2009, down notably from the 8¼ percent advance posted last year. The fall-off in debt growth owes mainly to an anticipated slowing of household borrowing, amid falling house prices and tighter standards and terms on consumer loans, and also to diminishing

Table 2
Alternative Growth Rates for M2
(percent, annual rate)

		25 bp Easing	No change	25 bp Tightening	Greenbook Forecast*
Monthly Growth Rates					
	Dec-07	4.9	4.9	4.9	4.9
	Jan-08	8.0	8.0	8.0	8.0
	Feb-08	16.8	16.8	16.8	16.8
	Mar-08	12.6	12.6	12.6	12.6
	Apr-08	2.4	2.4	2.4	2.4
	May-08	1.2	1.2	1.2	1.2
	Jun-08	2.5	2.5	2.5	2.5
	Jul-08	4.4	4.0	3.6	4.0
	Aug-08	5.5	4.7	3.9	4.7
	Sep-08	5.6	4.8	4.0	4.8
	Oct-08	3.5	2.8	2.1	2.8
	Nov-08	3.1	2.6	2.1	2.6
	Dec-08	3.2	2.8	2.4	2.8
Quarterly Growth Rates					
	2007 Q4	4.8	4.8	4.8	4.8
	2008 Q1	9.5	9.5	9.5	9.5
	2008 Q2	6.0	6.0	6.0	6.0
	2008 Q3	4.0	3.6	3.2	3.6
	2008 Q4	4.1	3.4	2.8	3.4
Annual Growth Rates					
	2007	5.8	5.8	5.8	5.8
	2008	6.0	5.7	5.5	5.7
	2009	5.3	5.2	5.1	4.1
Growth From	To				
Jun-08	Dec-08	4.3	3.7	3.0	3.7
2008 Q1	Sep-08	5.1	4.9	4.6	4.9
2008 Q2	Dec-08	4.0	3.4	2.9	3.4

* This forecast is consistent with nominal GDP and interest rates in the Greenbook forecast.

leveraged buyout, merger and acquisition, and share repurchase activity that is expected to slow the growth of business borrowing.

Directive

(34) Draft language for the directive is provided below.

Directive Wording

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 in the immediate future seeks conditions in reserve markets consistent with MAINTAINING/INCREASING/reducing the federal funds rate AT/to an average of around _____ ~~2~~ percent.

Appendix A: Measures of the Equilibrium Real Rate

The equilibrium real rate—that is, the nominal rate adjusted for expected inflation—is the real federal funds rate that, if maintained, would be projected to return output to its potential level over time. The short-run equilibrium rate is defined as the rate that would close the output gap in twelve quarters given the corresponding model's projection of the economy. The medium-run concept is the value of the real federal funds rate projected to keep output at potential in seven years, under the assumption that monetary policy acts to bring actual and potential output into line in the short run and then keeps them equal thereafter. Both concepts of the equilibrium real rate approximate expected inflation using trailing four-quarter core PCE inflation. The TIPS-based factor model measure provides an estimate of market expectations for the real federal funds rate seven years ahead.

In calculating the actual real funds rate, the nominal rate is measured as the quarterly average of the observed federal funds rate. Expected inflation is approximated in three ways: using lagged core inflation, as was done to define the equilibrium real rate; using lagged four-quarter headline PCE inflation; and using projected four-quarter headline PCE inflation beginning with the next quarter.

For the current quarter, the nominal rate is specified as the target federal funds rate on the Bluebook publication date. Moreover, if the upcoming FOMC meeting falls early in the quarter, the lagged inflation measure ends in the last quarter and the projected inflation measure starts in the current quarter.

Confidence intervals reflect uncertainties about model specification, coefficients, and the level of potential output. The final column of the table indicates the values published in the previous Bluebook.

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.
Large Model (FRB/US)	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.
Greenbook-consistent	The FRB/US model is used in conjunction with an extended version of the Greenbook forecast to derive a Greenbook-consistent measure. FRB/US is first add-factored so that its simulation matches the extended Greenbook forecast, and then a second simulation is run off this baseline to determine the value of the real federal funds rate that closes the output gap.
TIPS-based Factor Model	Yields on TIPS (Treasury Inflation-Protected Securities) reflect investors' expectations of the future path of real interest rates, but also include term and liquidity premiums. 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 Bluebook 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. Because TIPS indexation is based on the total CPI, this measure is also adjusted for the medium-term difference—projected at 40 basis points—between total CPI inflation and core PCE inflation.

Appendix B: Analysis of Policy Paths and Confidence Intervals

Rule Specifications: For the following rules, i_t denotes the federal funds rate for quarter t, while the explanatory variables include the staff's projection of trailing four-quarter core PCE inflation (π_t), inflation two and three quarters ahead ($\pi_{t+2|t}$ and $\pi_{t+3|t}$), the output gap in the current period and one quarter ahead ($y_t - y_t^*$ and $y_{t+1|t} - y_{t+1|t}^*$), and the three-quarter-ahead forecast of annual average GDP growth relative to potential ($\Delta^4 y_{t+3|t} - \Delta^4 y_{t+3|t}^*$); 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 Bluebook" is based on the current specification of the policy rule, applied to the previous Greenbook projection. Confidence intervals are based on stochastic simulations of the FRB/US model with shocks drawn from the estimated residuals over 1986-2005.

Information from Financial Markets: The expected funds rate path is based on forward rate agreements, and the confidence intervals for this path are constructed using prices of interest rate caps.

Near-Term Prescriptions of Simple Policy Rules: These prescriptions are calculated using Greenbook projections for inflation and the output gap. Because the first-difference rule involves the lagged funds rate, the value labeled "Previous Bluebook" for the current quarter is computed using the actual value of the lagged funds rate, and the one-quarter-ahead prescriptions are based on this rule's prescription for the current quarter.

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