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.

Content last modified 02/07/2013.

CLASS I FOMC - RESTRICTED CONTROLLED (FR)

SEPTEMBER 13, 2007

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) Credit concerns in U.S. and foreign financial markets intensified sharply during the intermeeting period, and liquidity in some markets was substantially impaired. Heightened investor unease about exposure to subprime mortgages, and to structured credit products more generally, elicited a sharp rise in rates on asset-backed commercial paper (ABCP), as well as a notable shortening of ABCP maturities and a substantial contraction in ABCP issuance amid a sharp reduction in investor demand. Investors sought the safe haven of Treasury securities, while banks sought to increase their liquidity and were cautious about balance sheet capacity and counterparty exposure to ABCP. Term interbank funding markets, particularly in Europe, but also in the United States, were significantly impaired, with rates rising well above expected future overnight rates and traders reporting a substantial drop in availability of term funding. Although the Federal Reserve and some other central banks responded with a number of measures to increase liquidity early in the intermeeting period, strains mounted over the first few weeks of the interval and remain elevated. In longer-term markets, broad U.S. equity prices edged up over the intermeeting period. Yields on both investment-grade and speculative-grade corporate bonds moved down, but spreads widened as rates on Treasury coupon securities fell even more. Issuance of investment-grade corporate bonds was quite robust, but speculative-grade issuance remained weak, and the leveraged loan market stayed virtually shut. In the housing finance sector, the spread between rates on jumbo fixed-rate mortgages and similar-quality conforming loans widened to historical highs, while subprime mortgage loans remained unavailable. The deterioration in financial conditions, along with some

weaker-than-anticipated economic data, led investors to mark down the expected path for U.S. monetary policy significantly.

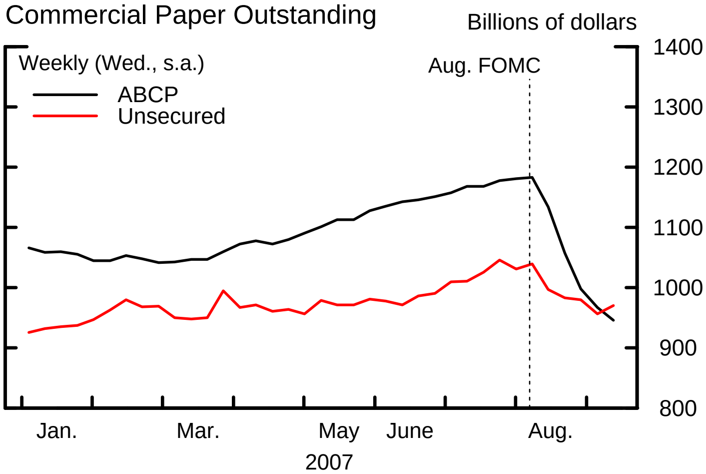
Money Markets

(2) The commercial paper market has been investors' main focus during the intermeeting period. Shortly after the August FOMC meeting, rates on overnight ABCP jumped in the United States and Europe after a French-based international bank suspended redemptions at some affiliated funds that had invested in mortgage-related securities. Rates on ABCP and on low-rated unsecured commercial paper have remained elevated since then, although yields on higher-rated unsecured commercial paper issued by nonfinancial firms are 25 to 30 basis points lower than at the time of the August meeting. Some CP issuers, particularly ABCP programs with exposure to non-conforming mortgages, have found it difficult to roll over maturing paper. As a result, some issuers have drawn on backup lines at banks or taken the unprecedented step of exercising options to extend maturities of outstanding paper, and a few have defaulted. Outstanding ABCP has contracted nearly 20 percent (not at an annual rate) since the week of the August FOMC meeting, and outstanding unsecured paper has fallen about 7 percent (Chart 1). Moreover, banks reportedly have been purchasing and retaining some CP on their balance sheets. Outstanding asset-backed euro commercial paper has contracted more than 10 percent. Issuance of all types of CP has been concentrated at very short maturities, as investors remain leery of providing term funding, especially for asset-backed programs. As investors sought to shift from riskier commercial paper to short-term Treasury securities, yields on three-month Treasury bills declined 80 basis points, on net, over the intermeeting period and were extremely volatile.

(3) The spreading concern about ABCP led to a substantial firming in interbank overnight rates in the United States and abroad. On August 9 the European Central

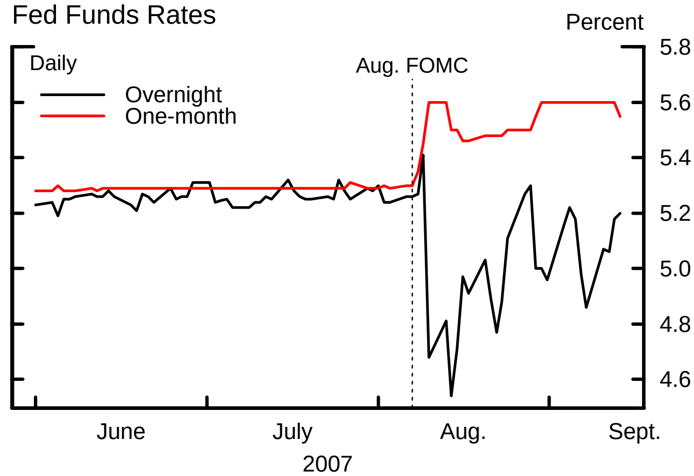
Chart 1
Asset Market Developments

Commercial Paper Outstanding



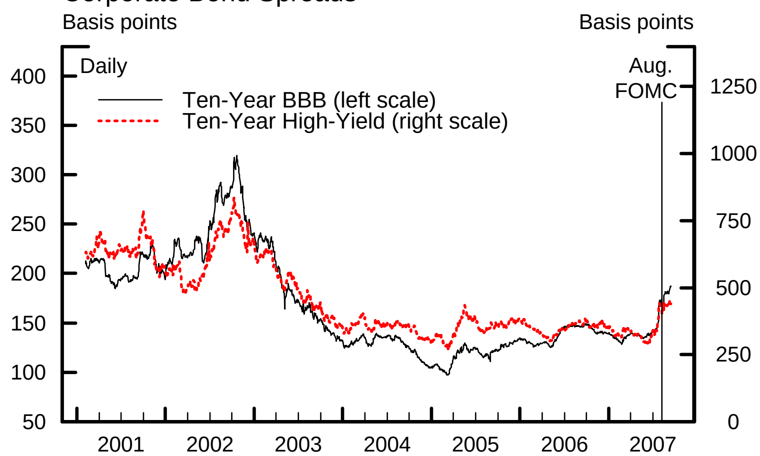
Last weekly observation is for September 12, 2007.

Fed Funds Rates



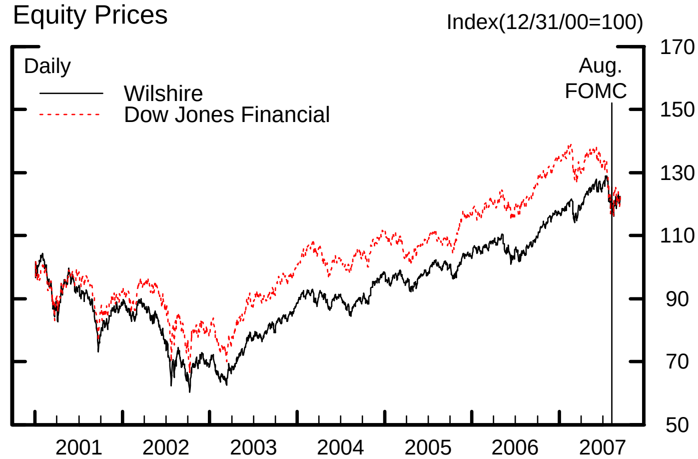
Last daily observation is for September 13, 2007.

Corporate Bond Spreads*



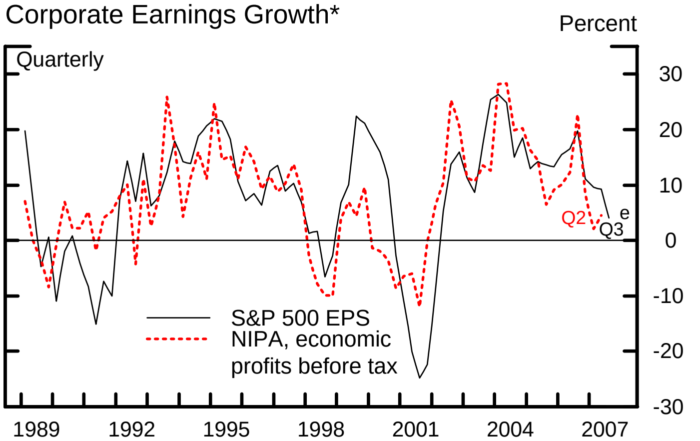
*Measured relative to an estimated off-the-run Treasury yield curve.
Last daily observation is for September 13, 2007.

Equity Prices



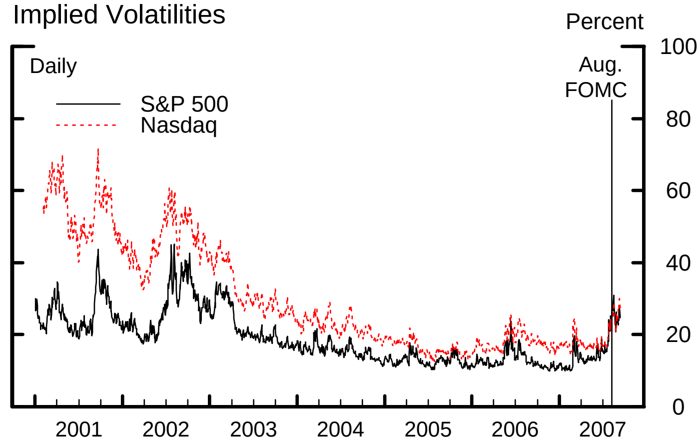
Last daily observation is for September 13, 2007.

Corporate Earnings Growth*



*Change from four quarters earlier.
Source. I/B/E/S for S&P 500 EPS.

Implied Volatilities



Last daily observation is for September 13, 2007.

Note: Vertical lines indicate August 6, 2007.

Bank (ECB) conducted an unscheduled tender operation, the beginning of a series of operations to provide liquidity. The Desk also responded by providing reserves generously that day and the next, and the Federal Reserve announced it was providing liquidity to maintain orderly trading in the market. (See box "Recent developments in reserve markets.") The central banks of Canada, Japan, Australia, Norway, and Switzerland all conducted special market operations over the following week to inject liquidity into overnight funding markets.

(4) Despite these liquidity injections, dislocations in term interbank markets persisted. On August 17, the Board approved a 50 basis point reduction in the primary credit rate and announced changes in discount window practices. On two occasions later in the period, the ECB conducted special operations that provided a total of 115 billion euros on three-month terms. Nonetheless, banks in the United States and overseas have continued to manage their assets and liabilities very cautiously, amid heightened pressures on their balance sheet capacity and counter-party credit risk. (See box "Recent developments in term bank funding markets.")

Capital Markets

(5) Conditions in corporate lending and securities markets have been mixed. Longer-term investment- and speculative-grade corporate bond spreads have edged up somewhat, and CDX and LCDX spreads have changed little, on balance, since the August FOMC meeting. Investment-grade corporate bond issuance was strong in August as yields declined, but issuance of speculative-grade bonds was scant. Likewise, only a few small deals were reportedly syndicated in the leveraged loan market. The pipeline of underwritten leveraged loan deals that have not yet been drawn remains large. Banks reportedly plan to bring these loans to market this fall; uncertainty regarding prospects for those efforts as well as for the commercial paper market, however, appears to have contributed to the reluctance of commercial and

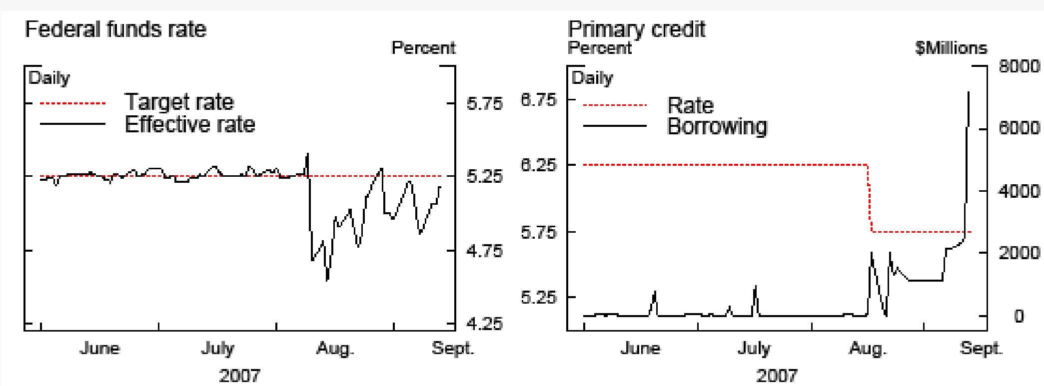
Recent Developments in Reserve Markets

In late July and early August, strains in European funding markets began to spill over to U.S. money markets. Increasingly strong bidding by foreign banks pressured the federal funds rate higher, and on August 9 and 10, when these strains had become particularly acute, the Desk conducted substantial reserve-adding operations. Indeed, on August 10, there were three operations, totaling $38 billion, including two well after the Desk's usual morning intervention time, and the Federal Reserve announced that it was "providing liquidity to facilitate the orderly functioning of financial markets."

To help address market pressures in term markets, on Friday, August 17, the Federal Reserve temporarily narrowed the spread of the primary credit rate over the target federal funds rate to 50 basis points and made changes to the primary credit program to permit large as well as small depository institutions (DIs) to borrow for terms of up to thirty days, renewable at the borrower's request. Subsequently, several large banks publicly announced that they were borrowing from the discount window. In addition, the Board granted a few large commercial banks exemptions from section 23A of the Federal Reserve Act in order to enable the banks to use discount window credit to fund loans to securities affiliates that hold substantial mortgage-related assets.

Collateral pledged to the discount window grew significantly over the intermeeting period as large DIs apparently sought to bolster their contingency funding sources. Pledged collateral now exceeds $900 billion in lendable value, the highest level ever. In response to inquiries from DIs, the Reserve Banks clarified their policy that investment-grade asset-backed commercial paper (ABCP) is acceptable as collateral. As of September 13, ABCP pledges totaling roughly $10 billion have been accepted, and DIs have submitted about eighty additional ABCP prospectuses for evaluation by Reserve Banks.

Over the period, the Desk gradually shifted its conduct of open market operations to exert upward pressure on the federal funds rate to bring it closer to the target, and in the past week, reserve provision has been very restrained. Indeed, on September 12, which was the last day of a reserve maintenance period, discount window borrowing jumped to over $7 billion. While the funds rate was close to or a bit above target on a few days, it has been volatile both interday and intraday and has averaged noticeably below target. Throughout this period, liquidity in the market for overnight fed funds has appeared ample, brokered volumes have reached record levels, and the market has seemed to be functioning well. However, conditions in term funding markets remain impaired.

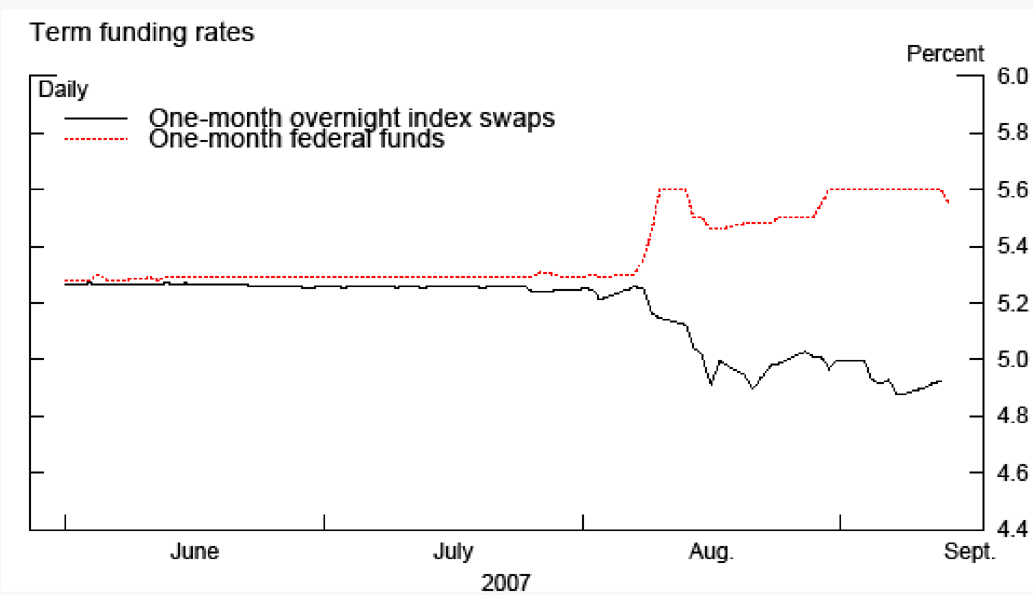


Recent Developments in Term Bank Funding Markets

Conditions in term bank funding markets deteriorated substantially over the intermeeting period. Many lenders have preferred to lend overnight to conserve liquidity, and institutions that are perceived as having particularly large exposure to risky assets such as ABCP, or as being less creditworthy more generally, have experienced significant difficulty securing term financing. Indeed, some large commercial banks report that, in recent weeks, term borrowing, in federal funds or Eurodollars, has been difficult or impossible. According to discussions with market participants, the borrowers most directly affected seem to have been European banks, including their U.S. branches.

Quoted term rates have been very elevated, with term premiums appearing to be significantly above typical levels. As a consequence of these developments, banks' funding in wholesale markets has become increasingly concentrated at overnight maturities, similar to developments in the commercial paper market. Moreover, with term funding markets for dollars, euro, sterling, and other currencies impaired, the foreign exchange swap market also broke down. Over the past week, however, market strains seem to have eased a bit, and banks have reported more trading taking place for tenors up to one month, albeit still at elevated rates.

The breakdown in term funding markets appears attributable to several factors. Banking institutions have become quite concerned that they may be required to provide funding for a large volume of leveraged loans and ABCP and are consequently conserving liquidity. Banks also have reportedly become more concerned about counterparty credit exposures in light of elevated market volatility and latent losses on subprime mortgage products and related assets. At least in part, tightness has persisted in the market because many banks have been unwilling to expand their balance sheets to arbitrage the spread. Such reluctance may owe in part to concerns that they may approach regulatory capital ratios or capital ratios negotiated with rating agencies. And, given the current size of their balance sheets, banks may perceive other lending opportunities as more attractive.



investment banks to make major new balance sheet commitments. Broad stock price indexes, though volatile, edged up over the intermeeting period. Option-implied volatility on the S&P 500 spiked to the highest level since early 2003 but later subsided and was only a bit higher, on balance, over the period.

(6) Markets for nonconforming mortgages were impaired over the intermeeting period, although the origination of conforming mortgages appears to have been largely unaffected by recent developments. Securitization activity for non-prime and jumbo mortgages has been extremely limited in recent weeks, impeded by a near absence of demand from investors. In response, nondepositories reportedly have substantially reduced their originations of jumbo mortgages, but some banks and thrifts report that they are offering prime borrowers jumbo mortgages at higher rates and holding the resulting assets on their balance sheets. Some mortgage borrowers who would have been classified as subprime a year ago are reportedly using private mortgage insurance to qualify for conforming loans, although this segment of borrowers is likely finding credit expensive and difficult to obtain.

Market Functioning

(7) Trading conditions in some securities markets were strained over the intermeeting period. Treasury bill market functioning was notably impaired at times, with bid-asked spreads extremely wide by historical standards. The demand for Treasury collateral increased sharply in the repo market, and overnight general collateral (GC) repo rates were far below the federal funds rate for a few days. However, the temporary reduction from 100 to 50 basis points in the minimum fee for borrowing securities from the SOMA Securities Lending Facility, announced on August 21, reportedly played some role in improving conditions in the bill and repo markets; the spread between the overnight federal funds rate and the corresponding GC repo rate has since returned to more normal levels. The secondary market for

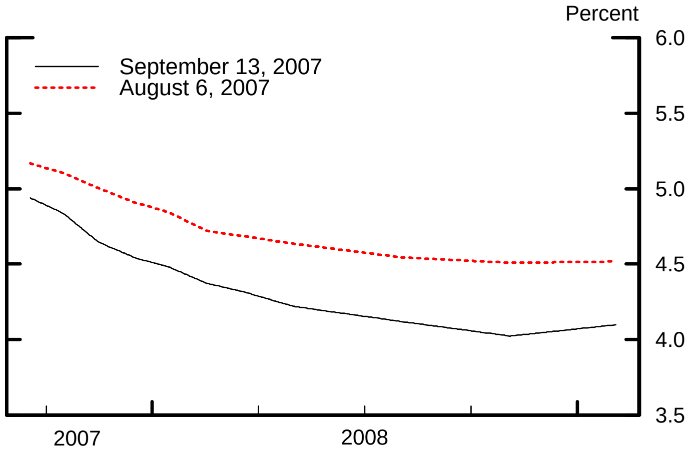
Treasury coupon securities has also shown some signs of stress, but conditions have not been nearly as problematic as in the bill market. Bid-asked spreads for Treasury coupon securities have been somewhat above their average levels of recent years, but trading volumes have been high. On-the-run liquidity premiums for two- and ten-year Treasury securities have stayed elevated. Two-year swap spreads increased substantially over the intermeeting period, although those at the ten-year horizon fell a bit, perhaps held down in recent days in part by mortgage convexity hedging demands. Disruptions to both U.S. and European term interbank funding markets also affected the foreign exchange swap market, where bid-asked spreads rose to as much as twenty times their normal levels, and trade sizes reportedly were much smaller than usual. In contrast, conditions in the CDS market have improved over the intermeeting period, especially for index products, and the secondary market for corporate bonds also functioned well, with bid-asked spreads within their historical range.

Monetary Policy Expectations and Treasury Yields

(8) Investors marked down the expected near-term policy path significantly during the intermeeting period, evidently in response to ongoing disruptions in short-term credit markets and a few key data releases (Chart 2). The FOMC's decision at its August 7 meeting to leave the federal funds rate target unchanged at 5¼ percent, the accompanying statement, and the minutes of that meeting were about in line with market expectations, and reactions in financial markets were muted. None of the statements or actions by the Federal Reserve on August 10 or August 17 elicited large initial responses in short-term interest rates. However, further disappointing news on the housing sector and, especially, the drop in August payrolls and sizable downward revisions to payrolls in June and July revealed in the latest employment report appeared to solidify market expectations for a near-term policy easing.

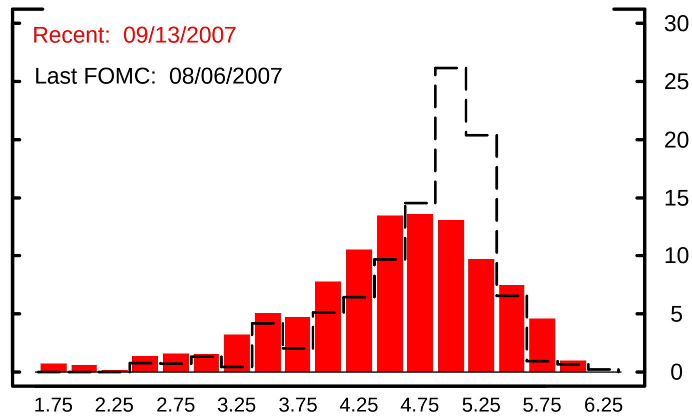
Chart 2
Interest Rate Developments

Expected Federal Funds Rates*



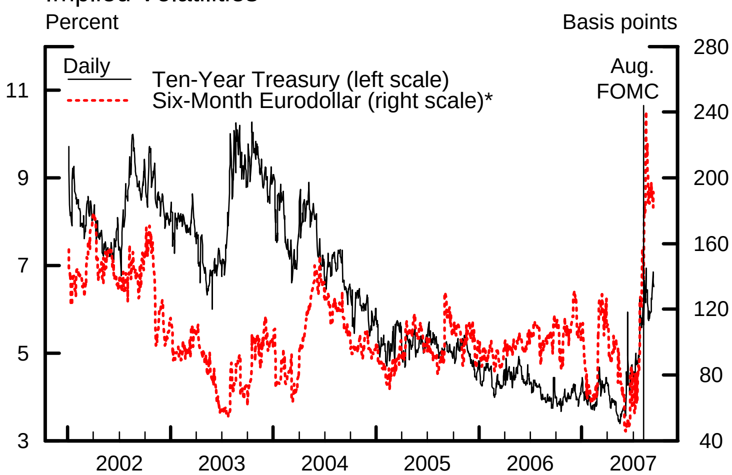
*Estimates from federal funds and Eurodollar futures, with an allowance for term premiums and other adjustments.

Implied Distribution of Federal Funds Rate Six Months Ahead*



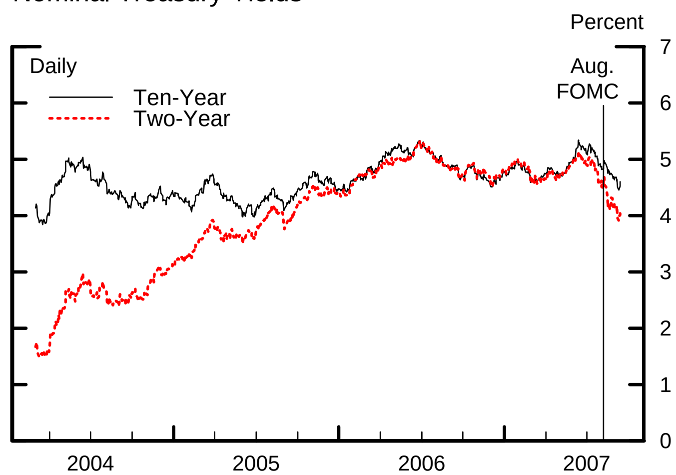
*Derived from options on Eurodollar futures contracts, with term premium and other adjustments to estimate expectations for the federal funds rate.

Implied Volatilities



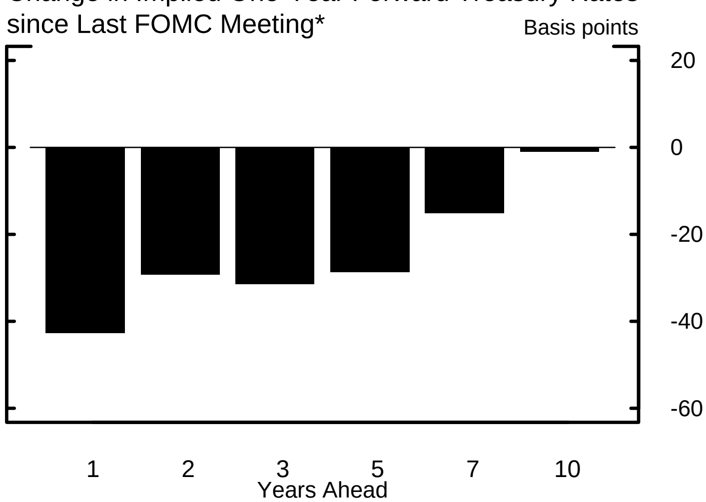
*Width of a 90 percent confidence interval estimated from the term structures for the expected federal funds rate and implied volatility.

Nominal Treasury Yields*



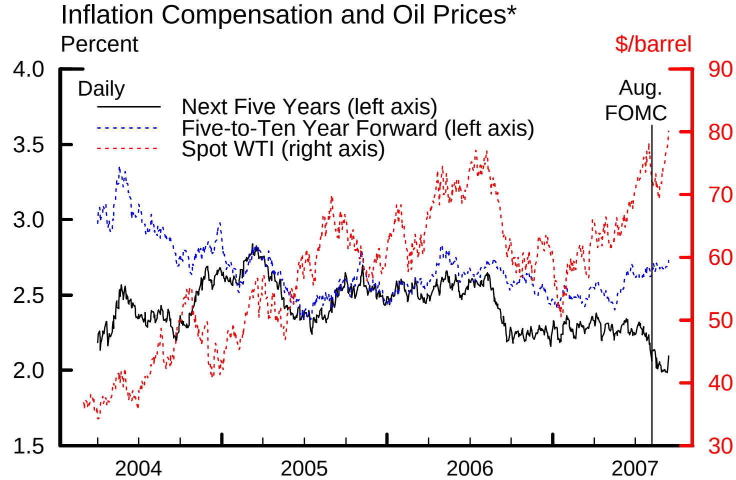
*Par yields from a smoothed nominal off-the-run Treasury yield curve.

Change in Implied One-Year Forward Treasury Rates since Last FOMC Meeting*



*Forward rates are the one-year rates maturing at the end of the year shown on the horizontal axis that are implied by the smoothed 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: Vertical lines indicate August 6, 2007. Last daily observations are for September 13, 2007.

(9) Investors generally expect either a quarter- or half-point cut in the funds rate at the upcoming meeting. Binary options on the target funds rate after the September meeting suggest that investors now assign about 35 percent odds to a 50 basis point reduction in the target and approximately 50 percent odds to a 25 basis point cut. According to the Desk's survey of primary dealers, which was conducted after the release of the employment report, respondents assign about 40 percent odds to a 50 basis point reduction and about 55 percent odds to a 25 basis point cut. Survey participants also anticipate substantial revision to the FOMC statement, with many expecting the Committee to cite downside risks to growth as the dominating concern. The primary dealers marked down their expected path for the funds rate as well; their average anticipated target at the end of next year is now 4½ percent. Futures quotes suggest that investors expect as much as 125 basis points of easing by the end of next year, almost 50 basis points more than at the time of the last FOMC meeting and somewhat more than the primary dealers. Estimates of the expected path of monetary policy based on market quotes are more uncertain than usual given that term premiums in many short-term financial markets have likely increased but by amounts that are difficult to gauge. Moreover, money market options indicate that uncertainty about the path of the funds rate has soared, with the width of 90 percent confidence intervals around the anticipated funds rate six and twelve months ahead touching multiyear highs. The skew of the implied distribution of expected funds rates at those horizons remains notably negative.

(10) Two-year nominal Treasury yields declined about 35 basis points, on net, over the intermeeting period, roughly in line with the revision in policy expectations. Ten-year nominal yields fell about 25 basis points to 4½ percent, the lowest level in a year. TIPS-based inflation compensation at the five-year horizon was about unchanged, despite the rise in spot oil prices, while the five-year forward measure

ending in ten years rose 10 basis points. The Reuters/Michigan survey suggests that households' short- and long-term inflation expectations ticked down in August.

Foreign Developments

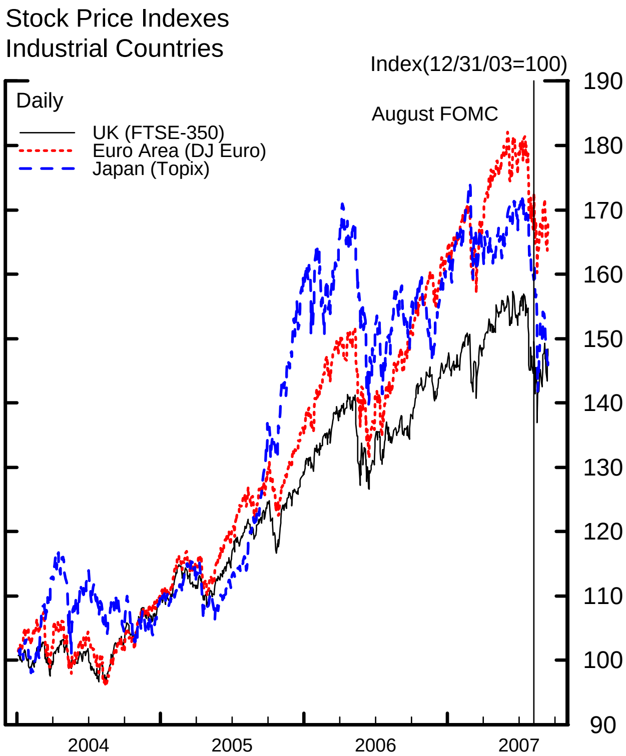
(11) In major industrial countries other than the United States, yields on government bonds fell 10 to 30 basis points, as expectations of monetary tightening were scaled back (Chart 3). The European Central Bank, the Bank of England, and the Bank of Japan did not raise their policy rates, contrary to expectations at the start of the intermeeting period. However, the Reserve Bank of Australia, the Riksbank, and the Swiss National Bank increased policy rates 25 basis points. The foreign exchange value of the dollar fell about 1½ percent against the major currencies over the intermeeting period. The yen rose more than 2½ percent, on net, while the Australian dollar fell 1¾ percent, reflecting a pullback from the carry trade.[1] Broad equity indexes recorded only small net changes in Europe and Canada but dropped more than 8 percent in Japan.

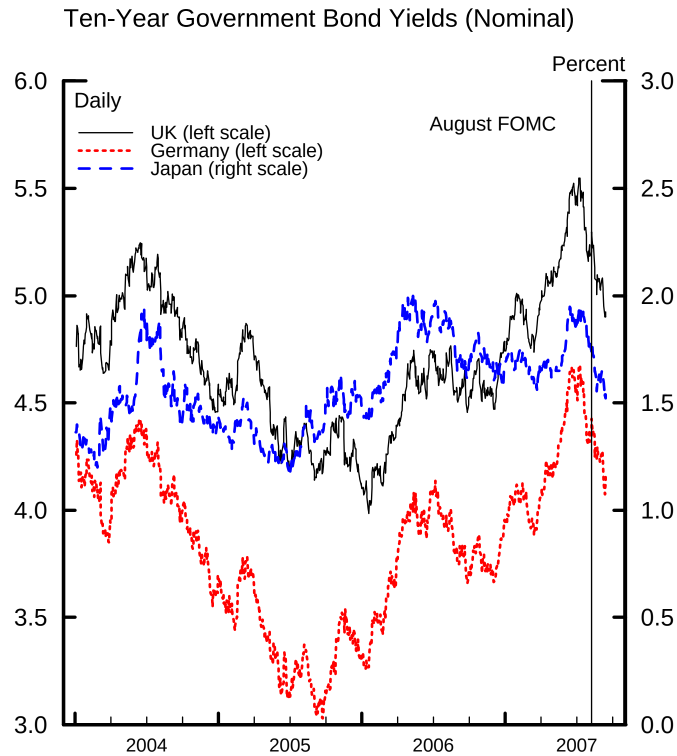
(12) Recent market turbulence has been less pronounced in most emerging markets than in the industrial economies. Equity prices recorded strong gains in some Asian markets, led by a 13 percent increase in China. Stock prices were little changed or down in Latin America and Eastern Europe. Dollar-denominated bond spreads in major emerging markets and local-currency bond yields were little changed except in Brazil, where yields rose about 60 basis points. The Chinese renminbi appreciated more than ¾ percent against the dollar over the intermeeting period, but most other emerging-market currencies depreciated, leaving the dollar essentially unchanged on average against the currencies of our other important trading partners.

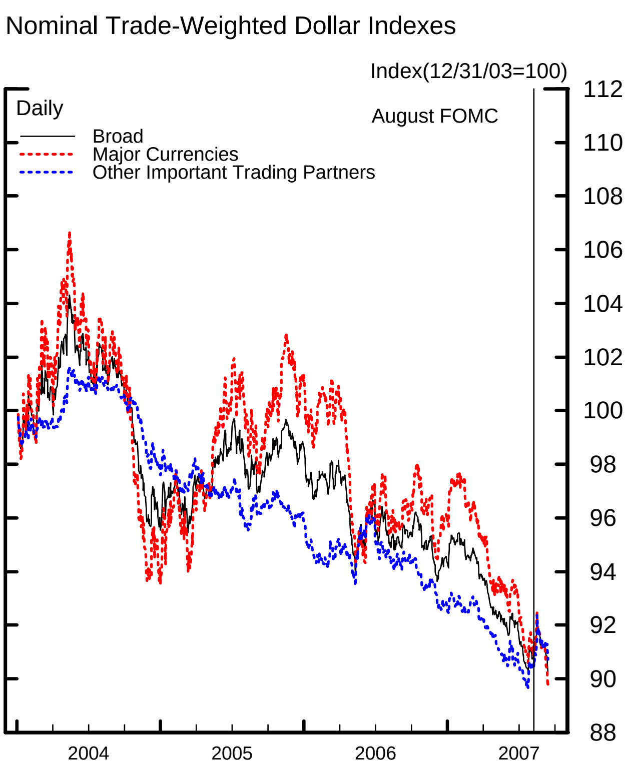
1

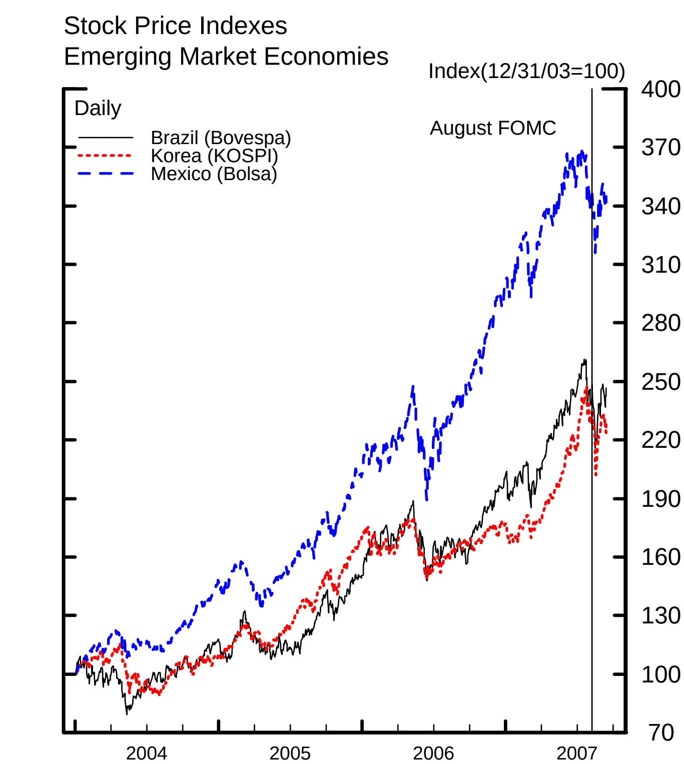
. , the Reserve Bank of Australia (a non-reporting central bank) confirmed publicly that it had intervened in mid-August without disclosing details of its operations.

Chart 3
International Financial Indicators









Note: Vertical lines indicate August 7, 2007. Last daily observations are for September 13, 2007.

Debt and Money

(13) The debt of domestic nonfinancial sectors is estimated to be expanding at an annual rate of almost 7 percent in the current quarter, similar to the second-quarter pace (Chart 4). Nonfinancial business debt likely expanded robustly in August, supported by a strong rebound in bond issuance by investment-grade companies and a jump in C&I loans. In part, the recent surge in C&I loans reflected disbursements of LBO-related loans that arranging banks have been unable to syndicate to non-bank investors. C&I loans may also have been boosted by decisions by some firms to substitute bank loans for commercial paper. Consumer credit continued to expand at a moderate pace through July. Household mortgage borrowing is estimated to have slowed further in the third quarter, reflecting decelerating house prices, the slower pace of home sales, and the tighter credit conditions facing some mortgage borrowers.

(14) A surge in liquid deposits and a jump in retail money market mutual funds boosted M2 growth to a 10½ percent annual rate in August. The strong inflows into money funds likely reflected portfolio shifts in response to recent financial market developments, as households pulled back from equity and fixed income mutual funds. Government-only money funds, which hold nothing but Treasury and agency securities and repurchase agreements, attracted a disproportionately large share of inflows in August as a whole. However, flows to such funds appear to have abated somewhat in recent days. Flows into liquid deposits also picked up in August, presumably as investors shied away from turbulent financial markets. Some institutions appeared to have stepped up their bids for small time deposits in recent weeks.

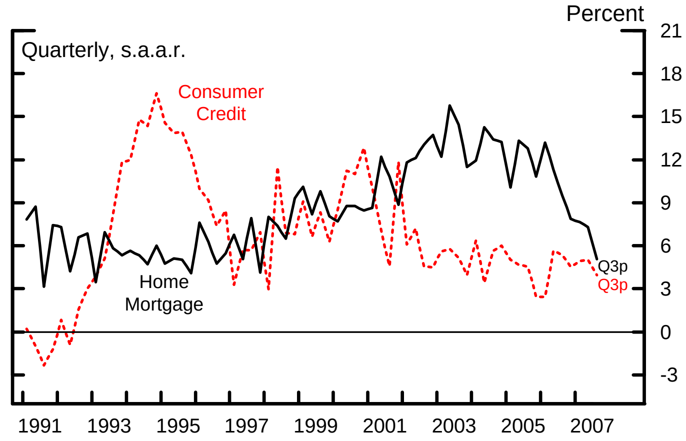
Chart 4
Debt and Money

Growth of Debt of Nonfinancial Sectors

Percent, s.a.a.r.		Total	Business	Household
2006		8.7	9.6	10.0
	Q1	9.9	10.3	11.0
	Q2	8.0	8.5	10.6
	Q3	7.2	6.9	8.7
	Q4	8.4	11.4	8.0
2007				
	Q1	7.9	8.9	7.1
	Q2	7.1	10.6	7.1
	Q3p	6.7	8.3	5.1

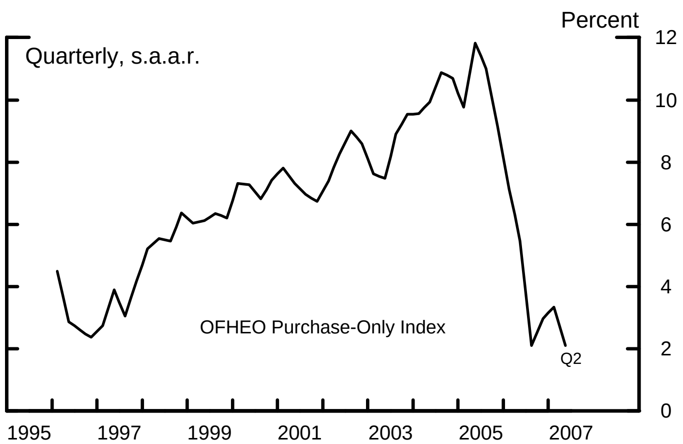
p Projected.

Growth of Debt of Household Sector

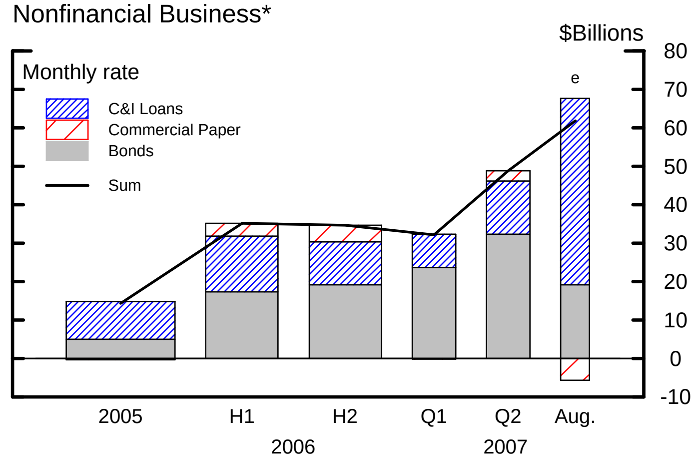


p Projected.

Growth of House Prices

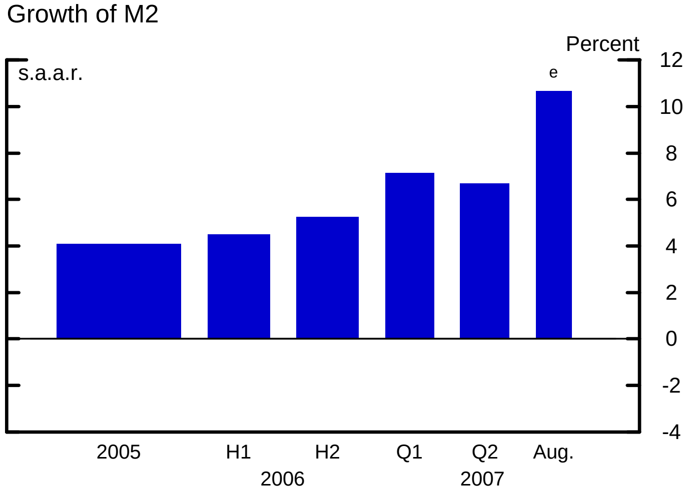


Changes in Selected Components of Debt of Nonfinancial Business*



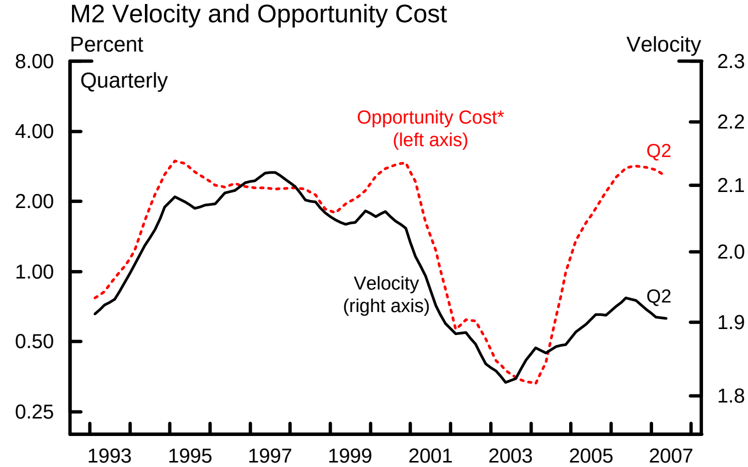
e Estimated.
*Commercial paper and C&I loans are seasonally adjusted, bonds are not.

Growth of M2



e Estimated.

M2 Velocity and Opportunity Cost



*Two-quarter moving average.

Economic Outlook through 2009

(15) Although spending data have come in about as expected over the intermeeting period, anecdotal reports on real activity in recent weeks have been downbeat, the August employment report was weaker than expected and conditions in mortgage and other credit markets have tightened appreciably. As a result, the staff has marked down substantially its projection for aggregate demand and lowered its assumption for the path of monetary policy over coming quarters. The forecast now assumes that the Committee will cut the target for the funds rate to 4¾ percent by the October meeting and will then hold the stance of policy unchanged through the end of the forecast period. As the staff assumes less easing of monetary policy than apparently anticipated by investors, longer-term Treasury yields are expected to firm a bit over the forecast period. Equity prices are, as usual, assumed to rise at the 6½ percent annual rate required to put them at parity with Treasury securities on a risk-adjusted basis, and the real foreign exchange value of the dollar is expected to depreciate a little less than 2 percent per year. Spot oil prices are expected to edge lower, in line with futures market quotes. Against this backdrop, real GDP is forecast to expand at a 2½ percent annual rate in the current quarter, but to slow to an annual rate of 1 percent in the fourth quarter before picking up to around 1¾ percent in 2008. This outlook is a good bit weaker than in the previous forecast and envisions actual GDP growing more slowly than potential on average. This Greenbook extends the forecast through 2009; in that year real GDP growth is projected to pick up to a pace slightly above that of potential GDP. In this forecast, the staff has revised down its estimate of the NAIRU from 5 percent to 4¾ percent in light of the recent behavior of inflation and labor costs. This revision implies an increase in the staff's estimate of the level—but not the projected growth rate—of potential output. The unemployment rate is now seen as edging up to nearly 5 percent in 2009. With the unemployment path marked up slightly from the previous Greenbook, and the

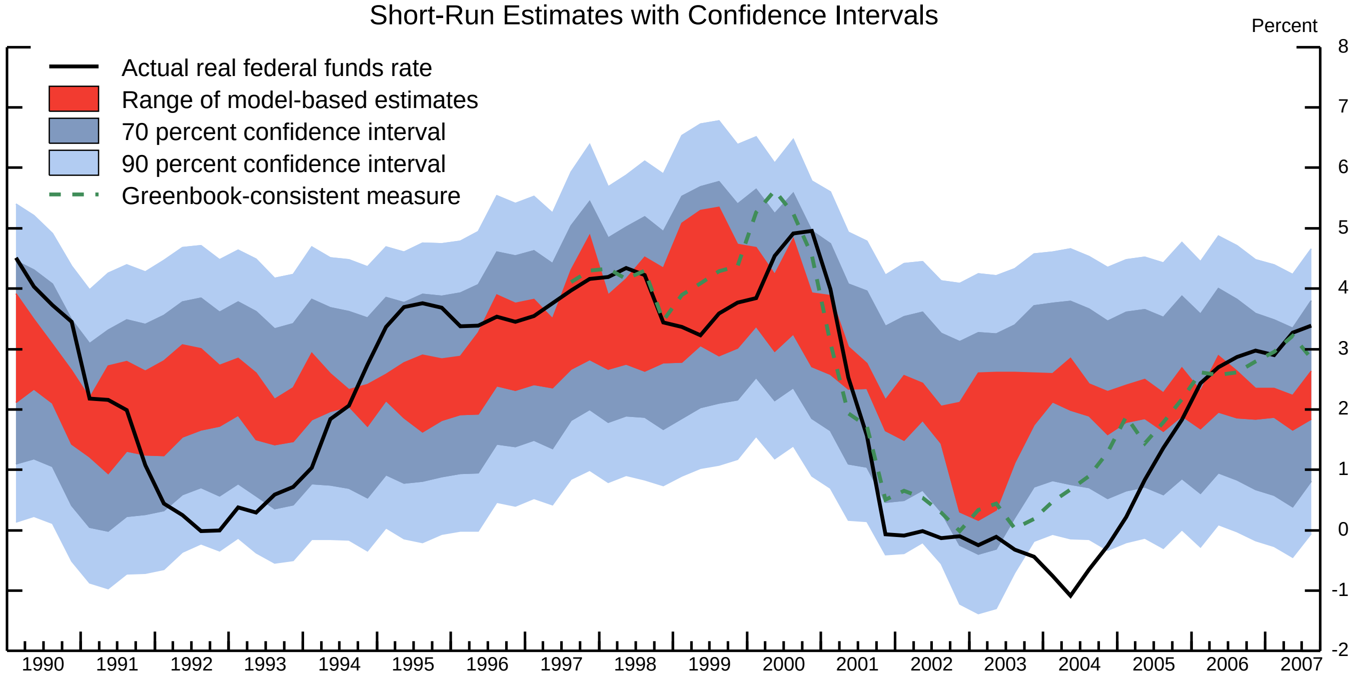
estimate of the NAIRU having been revised down, the staff now envisions the emergence of some slack in labor and product markets and has consequently marked down its inflation forecast a bit. Core PCE inflation is forecast to average 2 percent in the second half of this year before edging down to just under 2 percent in the next two years. With energy prices decelerating, total PCE inflation is projected to average close to 2 percent in the second half of this year and to fall to around 1¾ percent in 2008 and 2009.

Update on Medium-Term Strategies

(16) This section provides an update of the materials on medium-term strategies for monetary policy that were presented in the August Bluebook. As shown in Chart 5, the Greenbook-consistent measure of short-run r^* has been revised downward by about 50 basis points and now stands at 2.8 percent, about 60 basis points below the actual real federal funds rate.[2] This downward revision largely reflects the staff's assessment of the implications for aggregate demand of the recent financial turbulence, which has increased the cost of credit to many borrowers, diminished the availability of specific types of mortgage funding, weakened the outlook for house prices, contributed to a fall in consumer confidence, and worsened the prospects for foreign real activity. In addition, anecdotal information and some of the statistical data that pertain directly to the period since the onset of financial turbulence have been downbeat. The three model-based estimates of short-run r^* range from 1.8 to 2.6 percent, about the same range as in the August Bluebook; it should be noted that these three measures do not incorporate current-quarter information or

[2] For the current quarter, the actual real rate is constructed as the difference between the nominal funds rate target as of the Bluebook publication date and the average core PCE inflation rate over the past year.

Chart 5
Equilibrium Real Federal Funds Rate



Short-Run and Medium-Run Measures

	Current Estimate	*Previous Bluebook*
Short-Run Measures		
Single-equation model	2.5	*2.5*
Small structural model	1.8	*1.8*
Large model (FRB/US)	2.6	*2.4*
Confidence intervals for three model-based estimates		
70 percent confidence interval	0.8 - 3.8	
90 percent confidence interval	-0.1 - 4.7	
Greenbook-consistent measure	2.8	*3.3*
Medium-Run Measures		
Single-equation model	2.3	*2.4*
Small structural model	1.9	*1.9*
Confidence intervals for two model-based estimates		
70 percent confidence interval	1.2 - 3.1	
90 percent confidence interval	0.7 - 3.8	
TIPS-based factor model	2.1	*2.1*
Memo		
Actual real federal funds rate	3.4	*3.3*

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

judgmental adjustments and hence do not reflect the recent deterioration in financial market conditions.

(17) Chart 6 depicts optimal control simulations of the FRB/US model using the Greenbook forecast and its extension beyond 2009.[3] In these simulations, policymakers place equal weights 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 funds rate.[4] For an inflation goal of 1½ percent (the left-hand set of charts), the optimal control simulation prescribes a nominal federal funds rate path that rises slightly to about 5½ percent over the next few quarters and then declines to about 3¾ percent by the end of 2012. With an inflation goal of 2 percent (the right-hand set of charts), the optimal funds rate declines nearly a full percentage point over the next few quarters to a plateau somewhat below 4½ percent. Under both specifications of the inflation goal, the prescriptions for policy through 2010 are ½ to ¾ percentage point lower than in August, primarily reflecting the downward revision to aggregate demand. The path of the unemployment rate over the next several years in each simulation is little changed from the previous Bluebook, while the subsequent decline reflects the downward revision of the staff's assessment of the

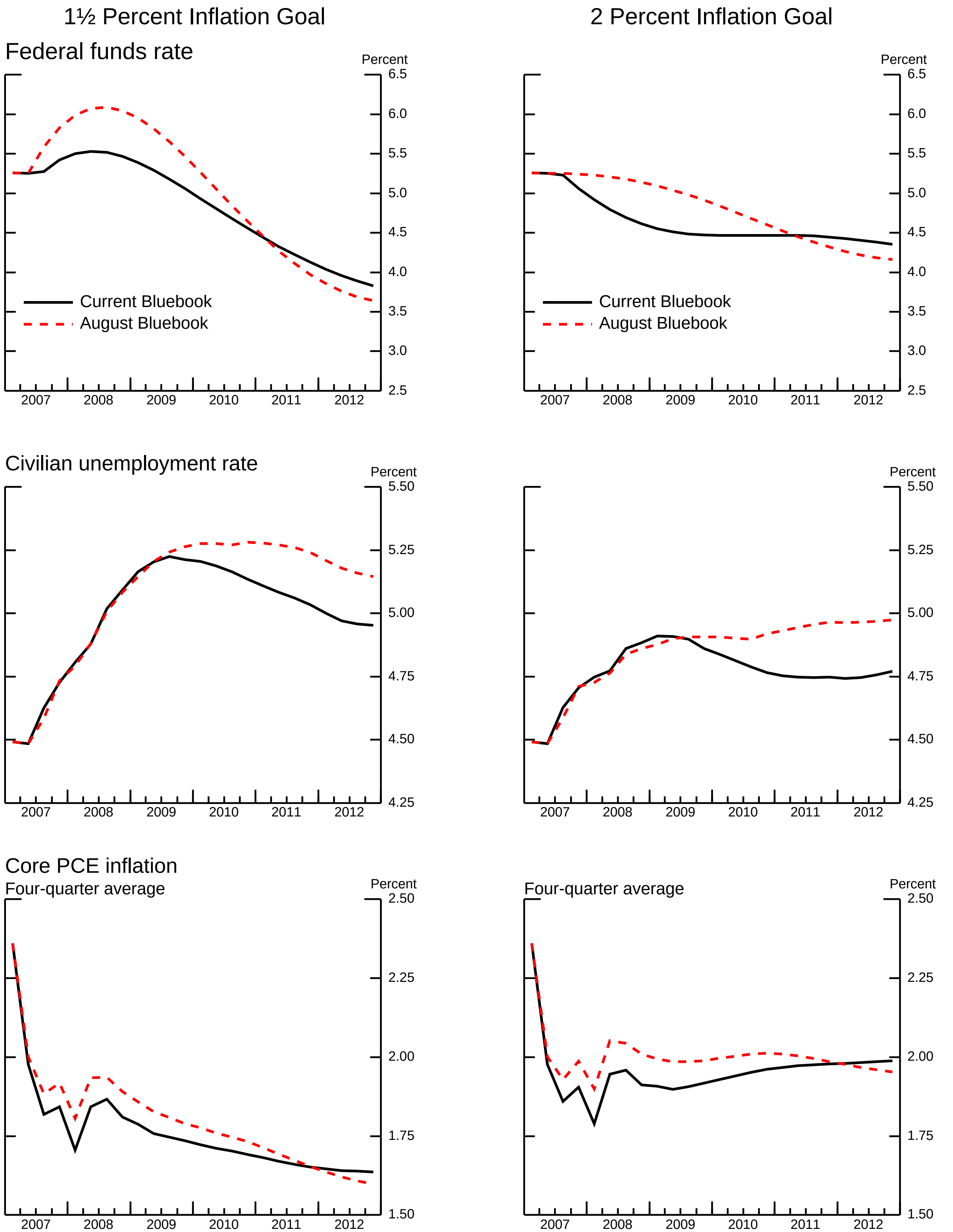
---

3 The characteristics of the extension are described in the memo to the Committee by Jean-Philippe Laforte, "The Extended Greenbook Forecast," September 12, 2007.

4 The FRB/US model is specified at a quarterly frequency and utilizes the quarterly average value of the federal funds rate. Therefore, in representing the interest rate smoothing motive in optimal policy simulations, it is necessary to account for the timing of the FOMC meeting within the initial quarter of the simulation (2007Q3 in the current Bluebook) because a funds rate change late in the quarter has a smaller effect on the average funds rate than if the same change had occurred earlier in the quarter. Starting with this Bluebook, this consideration is captured in the optimal policy simulations by assigning a greater penalty to an interest rate change in the initial quarter of the simulation compared with the penalty on interest rate changes in subsequent quarters; the increase in the penalty depends on the relative timing of the FOMC meeting within the quarter. The paths shown in Chart 6 for the August Bluebook are those actually shown in the previous Bluebook and were computed under the previous procedure, which did not impose any increased penalty for interest rate changes in the initial quarter of each simulation.

Chart 6

Optimal Policy Under Alternative Inflation Goals



NAIRU. The paths for core PCE inflation through 2010 are slightly lower than in August.

(18) As shown in Chart 7, the outcome-based monetary policy rule prescribes a funds rate path that declines to about 4¼ percent in the second half of 2008—about ¾ percentage point lower than in the August Bluebook—and then rises about 50 basis points through the rest of the decade. Stochastic simulations of the FRB/US model indicate a 70 percent probability that the funds rate will be in a range of 3 to 6 percent at the end of next year.[5] Financial market participants' expectations regarding the funds rate path from 2008 through 2012 appear to have declined about ½ percentage point over the intermeeting period, roughly the same amount as the decline in the Greenbook-consistent measure of short-run *r**. This suggests that market participants' assessment of the strength of the economy may have been marked down by an amount similar to that in the staff outlook. Interest rate caps indicate that the lower bound of the 70 percent confidence interval for the funds rate at the end of 2008 is now at about 3 percent, consistent with some other evidence suggesting that market participants perceive a substantial likelihood of very slow growth or even a recession over the year ahead. Prescriptions from simple policy rules are about ¼ to ½ percentage point lower than in the previous Bluebook.

Short-Run Policy Alternatives

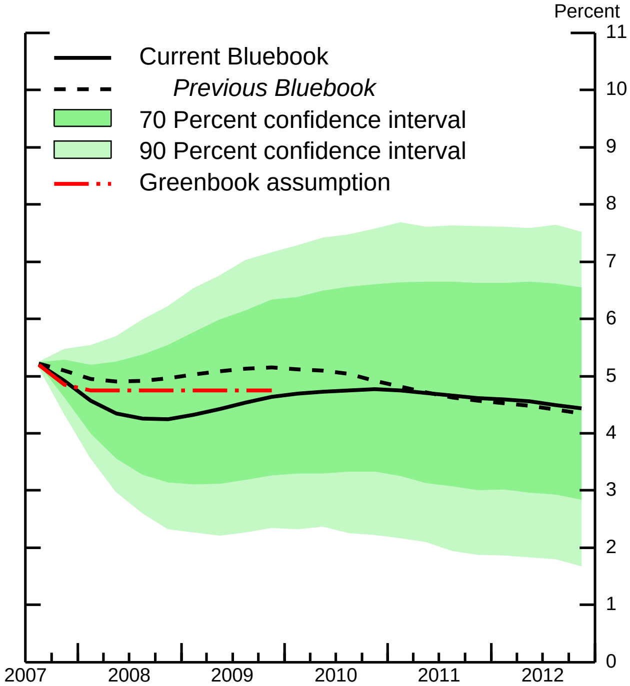
(19) This Bluebook presents four policy alternatives for the Committee's consideration, summarized in Table 1. Language that was not shown in the either of the Committee's August FOMC statements is shown in red, while wording from the unscheduled August 17 statement is colored blue. The statements from the August 7 and 17 FOMC meetings are shown on page 23. Under Alternatives A and B, the

[5] The width of these confidence intervals is determined by the past two decades of estimated model residuals and hence does not change in response to incoming data.

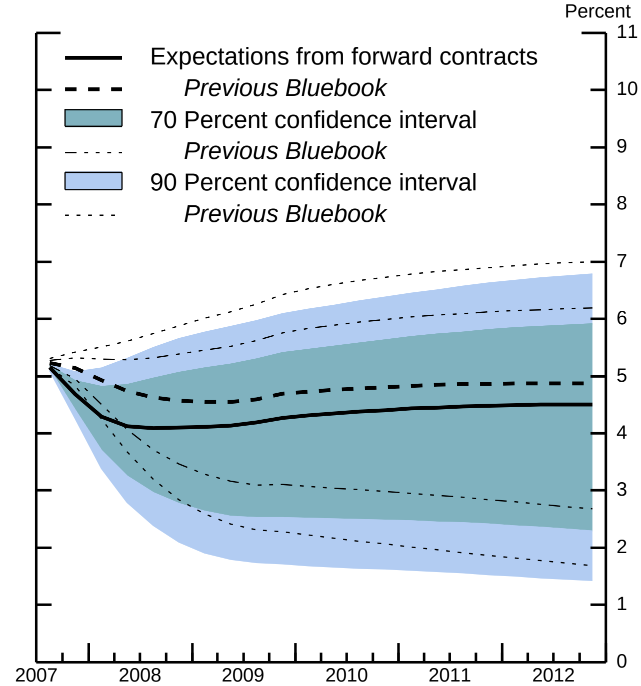
Chart 7

The Policy Outlook in an Uncertain Environment

FRB/US Model Simulations of Estimated Outcome-Based Rule



Information from Financial Markets



Near-Term Prescriptions of Simple Policy Rules

	1½ Percent Inflation Objective		2 Percent Inflation Objective	
	2007Q3	2007Q4	2007Q3	2007Q4
Taylor (1993) rule	4.3	4.2	4.1	4.0
Previous Bluebook	*4.5*	*4.5*	*4.2*	*4.2*
Taylor (1999) rule	4.6	4.3	4.3	4.1
Previous Bluebook	*4.7*	*4.7*	*4.5*	*4.4*
Taylor (1999) rule with higher r*	5.3	5.1	5.1	4.8
Previous Bluebook	*5.5*	*5.4*	*5.2*	*5.2*
First-difference rule	5.2	5.1	5.0	4.6
Previous Bluebook	*5.4*	*5.5*	*5.1*	*5.0*

Memo	2007Q3	2007Q4
Estimated outcome-based rule	5.2	4.9
Estimated forecast-based rule	5.2	4.8
Greenbook assumption	5.2	4.9
Market expectations	5.2	4.7

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

Table 1: Alternative Language for the September 2007 FOMC Announcement				
	Alternative A	**Alternative B**	**Alternative C**	**Alternative D**
Policy Decision	1. The Federal Open Market Committee decided today to lower its target for the federal funds rate 50 basis points to 4¾ percent.	The Federal Open Market Committee decided today to lower its target for the federal funds rate 50 basis points to 4¾ percent.	The Federal Open Market Committee decided today to lower its target for the federal funds rate 25 basis points to 5 percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.
Rationale	2. Tighter credit conditions and the intensification of the housing correction appear likely to exert appreciable restraint on economic growth. Moreover, the potential for significant spillovers from credit market disruptions to business and household spending poses a risk to the outlook. Today's action is intended to help mitigate the adverse effects on the broader economy arising from the disruptions in financial markets and to promote moderate growth over time.	Economic growth was moderate during the first half of the year, but the tightening of credit conditions has the potential to intensify the housing correction and to restrain economic growth more generally. Today's action is intended to help forestall some of the adverse effects on the broader economy that might otherwise arise from the disruptions in financial markets and to promote moderate growth over time.	Economic growth was moderate during the first half of the year, but the tightening of credit conditions has the potential to intensify the housing correction and to restrain economic growth more generally. Today's action is intended to help forestall some of the adverse effects on the broader economy that might otherwise arise from the disruptions in financial markets and to promote moderate growth over time.	Economic growth was moderate during the first half of the year. Financial market conditions have deteriorated in recent weeks, leading to tighter credit and an intensification of the housing correction. These developments have the potential to restrain growth in economic activity. Nonetheless, the economy seems likely to continue to expand at a moderate pace over coming quarters, supported by solid growth outside the housing sector and a robust global economy.
	3. Readings on core inflation have improved modestly this year. However, the Committee judges that some inflation risks remain, and it will continue to monitor inflation developments carefully	Readings on core inflation have improved modestly this year. However, the Committee judges that some inflation risks remain, and it will continue to monitor inflation developments carefully.	Readings on core inflation have improved modestly this year. However, the Committee judges that some inflation risks remain, and it will continue to monitor inflation developments carefully.	Readings on core inflation have improved modestly this year. However, a sustained moderation in inflation pressures has yet to be convincingly demonstrated. Moreover, the high level of resource utilization has the potential to sustain those pressures.
Assessment of Risk	4. Even after today's action, the Committee judges that the downside risks to economic growth outweigh the upside risks to inflation. Future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information.	The Committee will continue to closely follow timely indicators of economic prospects and will act as needed to foster price stability and sustainable economic growth.	Even after today's action, the Committee judges that the downside risks to economic growth outweigh the upside risks to inflation. Future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information.	In the current circumstances, the Committee judges that the downside risks to economic growth are now roughly balanced by the upside risks to inflation. Future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information.

Language from August 2007 FOMC Statements		
	August 7 FOMC Meeting	**August 17 Unscheduled Meeting**
Policy Decision	1. The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	[None.]
Rationale	2. Economic growth was moderate during the first half of the year. Financial markets have been volatile in recent weeks, credit conditions have become tighter for some households and businesses, and the housing correction is ongoing. Nevertheless, the economy seems likely to continue to expand at a moderate pace over coming quarters, supported by solid growth in employment and incomes and a robust global economy.	Financial market conditions have deteriorated, and tighter credit conditions and increased uncertainty have the potential to restrain economic growth going forward.
	3. Readings on core inflation have improved modestly in recent months. However, a sustained moderation in inflation pressures has yet to be convincingly demonstrated. Moreover, the high level of resource utilization has the potential to sustain those pressures.	[None.]
Assessment of Risk	4. Although the downside risks to growth have increased somewhat, the Committee's predominant policy concern remains the risk that inflation will fail to moderate as expected. Future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information.	In these circumstances, although recent data suggest that the economy has continued to expand at a moderate pace, the Federal Open Market Committee judges that the downside risks to growth have increased appreciably. The Committee is monitoring the situation and is prepared to act as needed to mitigate the adverse effects on the economy arising from the disruptions in financial markets.

Committee would lower the target federal funds rate 50 basis points to 4¾ percent. Alternative A would characterize the downside risks to growth as outweighing upside risks to inflation, while Alternative B would not provide an assessment of the overall balance of risks. Under Alternative C, the policy rate would be lowered 25 basis points to 5 percent, and the statement would indicate that the downside risks to economic growth outweigh the upside risks to inflation. Alternative D would leave the target rate unchanged at 5¼ percent and report that the risks to growth and inflation are roughly balanced. As for the rationale portion of the statement, Alternatives A, B, and C substantially modify the August 7 assessment of the outlook for growth and of the risks around that outlook in light of credit and housing market developments, using some of the wording from the August 17 statement. In contrast, Alternative D recognizes the deterioration in financial conditions but repeats the judgment that moderate growth is likely over coming quarters. Inflation readings have continued to be benign but have not improved further over the past several months. Accordingly, under all four alternatives, the statement that inflation readings have improved "in recent months" is changed to shift the time reference for the improvement in inflation to "this year." In addition, under the first three alternatives, the inflation assessment is modified to observe that "some inflation risks remain" and that the Committee will "monitor inflation developments carefully," but the reference to pressures on resource utilization is deleted. This may be appropriate if the Committee is now a bit more confident that the continued favorable inflation readings represent a permanent moderation in inflation and if it shares the staff view of the degree of pressure in the labor market. In Alternative D, the inflation assessment is unchanged from the August 7 statement. As usual, the Committee could consider combining elements from more than one alternative.

(20) Financial conditions have deteriorated sharply on balance since the August 7 FOMC meeting, making it more difficult and costly for households to

obtain nonconforming mortgages and also leading to tighter credit conditions for some firms. In addition, some nonfinancial indicators, including the August employment report, pending home sales, and anecdotal reports from contacts in private industry, suggest a weaker near-term outlook. In view of these developments, the Committee may judge that prospects for economic activity have deteriorated notably, and that the risk of a substantial and protracted slowdown in economic growth is now unacceptably large. With such an outlook, and with inflation data continuing to be benign, members might see it as appropriate to counter the effect of tighter financial conditions by easing policy by 50 basis points at this meeting, as in **Alternative B**. If members judge that evolving circumstances will likely warrant easing policy by 50 basis points or more over the next several months, as in the staff forecast, then they might think it prudent to implement a half-percentage-point cut at this meeting. The real federal funds rate is now about 50 basis points above its Greenbook-consistent equilibrium value (Chart 5) and is also above the range of model-based equilibrium estimates, suggesting that a half-point easing in policy is unlikely to lead to unacceptable pressures on resources. A 50 basis point rate cut is also consistent with the prescriptions of a number of simple policy rules, even with a 1½ percent inflation objective (Chart 7). A relatively aggressive easing of policy might also be viewed as valuable insurance against the risk of a further slide in investor and consumer confidence or a possible further deterioration in financial market conditions. Should such fears ultimately prove to be unfounded, and financial markets and the outlook for the economy improve, the Committee might believe that it could act quickly to take back some or all of the easing.

(21) The draft language of Alternative B repeats the observation from the August 7 FOMC statement that economic growth was moderate in the first half of the year. However, it drops the assessment from the August 17 statement that "recent data suggest that the economy has continued to expand at a moderate pace,"

as information that has subsequently become available suggests greater weakness in activity. It then adapts language from the August 17 statement to note the potential dampening effect of financial market turmoil on the housing market and the growth outlook more generally. The statement observes that the rate cut is intended to forestall the effects of these developments on the economy and to promote moderate growth "over time." This wording leaves open the possibility that growth may be weak for a time but suggests that the longer-term outlook remains healthy. Alternative B refrains from making any explicit characterization of the balance of risks, stating that "The Committee will continue to closely follow timely indicators of economic prospects and will act as needed" to attain its dual objectives. Although this sentence does not literally express any asymmetry, analysts are likely to read the statement overall as indicating some predelication to ease policy further. This approach could be seen as giving the Committee flexibility going forward, either to ease further in response to soft incoming data or to stand pat if the economy appears to be stabilizing. If members find Alternative B attractive, but wish to adopt an explicit statement of balanced risks, then they might insert the sentence "After today's action, the Committee judges that the downside risks to economic growth are now roughly balanced by the upside risks to inflation" at the start of the assessment of risk paragraph.

(22) Measuring market expectations is especially challenging in the current environment, but investors appear to place substantial odds on two possible target rate decisions at this meeting—a quarter-point cut and a half-point cut—and seem to envision cumulative easing of 75 to 100 basis points by the end of this year. With Alternative B putting 50 basis points of easing in place and suggesting at least some possibility of further rate cuts, this alternative would likely prompt a modest decline in short-term interest rates and the foreign exchange value of the dollar might edge lower. However, intermediate-term interest rates would probably change relatively

little. The effect on equity, credit, and term funding markets would depend on how investors interpreted the decision. They would most likely conclude that the sizable policy response may offset some of the macroeconomic effects of credit market turmoil, leading equity prices to rally and risk spreads to narrow. But it is possible that the relatively large policy move and the statement could lead investors to infer that the growth outlook is weaker than they had previously thought, having the opposite effect. Going forward, the reference to the Committee closely following timely indicators may sharpen the sensitivity of markets to near-term and forward-looking economic data.

(23) If members are particularly pessimistic about the growth outlook, or see the downside risks as especially large, then they may prefer to both ease 50 basis points and explicitly point to downside risks in order to maximize the scope for further near-term policy action, as envisioned in **Alternative A**. Members might view the current configuration of asset prices and credit spreads as possibly presaging a sharp slowdown in growth or even a recession. (See box “Financial indicators of recession risk.”) The Committee may be concerned that the housing correction could be more severe than anticipated by the staff, as explored in the “Greater housing correction” alternative simulation in the Greenbook. Members may also worry that a serious credit crunch could be emerging with economic consequences of the sort explored in the Greenbook “Bank capital crunch” scenario. If asset-backed commercial paper programs draw even more heavily on bank backup liquidity lines and banks come to hold a large volume of leveraged loans and mortgages on their balance sheets, banks may tighten terms and standards for lending to households and businesses in order to conserve liquidity and balance sheet capacity. Continued market volatility or the emergence of news of losses could lead to solvency concerns about one or more major market participants, which would likely worsen counterparty credit concerns and interbank funding problems. The Committee may consider these

Financial Indicators of Recession Risk

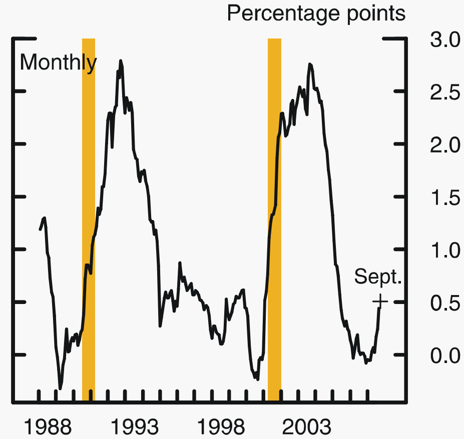
Some financial market observers consider the slope of the Treasury yield curve to be a useful predictor of future macroeconomic conditions. The yield curve had been inverted or flat until June and recently has steepened somewhat; thus, by that measure, the risk of recession appears to have diminished in recent months. However, spreads between corporate yields and comparable-maturity Treasury yields also have had considerable statistical power in predicting recent recessions. Some of those credit spreads have surged over the past month to levels comparable to those reached in 1989 and 2000. Thus, markets may be signaling high odds of imminent macroeconomic deterioration, despite the steepening of the Treasury yield curve.

Combining term and credit spreads in a logistic regression produces a model that performs well in "predicting" the last two recessions one year ahead while at the same time minimizing the number of false positives—that is, predictions of recessions that did not occur. Different measures of term and credit spreads produce slightly different results in this model, but a good fit is achieved—over the 1988 through 2006 estimation period—by using the spread on AA-rated five-year corporate bonds and the difference between ten- and two-year Treasury yields.[1] The August 2007 average values of these variables suggest a probability of about 40 percent that the U.S. economy will be in a recession in August 2008. This is the largest probability that the model has produced since late 2000, and it is up from virtually zero earlier in the year. If spreads during the first part of September were to persist for the remainder of the month, the estimated probability would rise to over 80 percent.

The apparently heightened risk of recession is notable, but some caveats are in order. In particular, given the rather unprecedented nature of recent developments, it is possible that the term and credit spreads currently reflect different factors than they did prior to the previous two recessions. Moreover, the AA spread has risen more dramatically than some other credit spreads in recent weeks. For example, high-yield bond spreads remained near their historical averages and thus continued to suggest less than 10 percent odds of a recession as of August. Although high-yield spreads have not previously performed as well in predicting business cycles as AA spreads, the sensitivity of the prediction to which credit spread is used indicates that the recent readings should be interpreted with care.

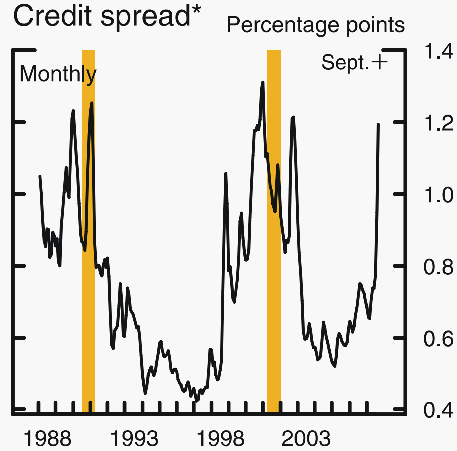
[1] Specifically, these two variables forecast recent recessions and expansions at least as well as alternative measures of term and credit spreads, based on both in- and out-of-sample tests. See King, T. B.; Levin, A. T; and Perli, R., "Financial Market Perceptions of Recession Risk." Working paper, July 2007.

Yield curve slope*



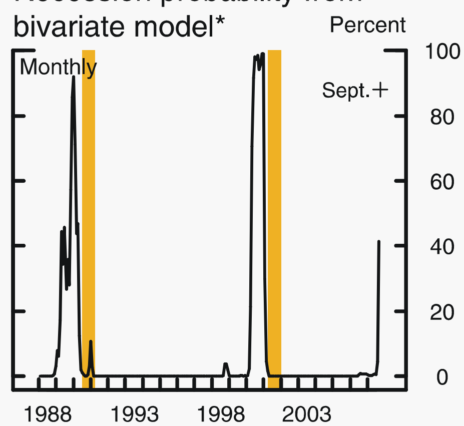
*Ten-year to two-year Treasury spreads.

Credit spread*



*Spread of AA 5-year rate over Treasury.

Recession probability from bivariate model*



*One-year-ahead probability based on ten-year to two-year term spreads and five-year AA credit spreads.

Note. Most recent values are based on data through September 13.

risks sufficiently palpable to warrant a downward tilt to the balance of risks even after a half-point rate cut.

(24) The draft statement for Alternative A is similar to that for Alternative B, but with four main differences. First, the reference to economic growth having been moderate in the first half of the year is deleted, as this may be seen as no longer relevant to the outlook, given the abrupt shift in circumstances. Second, Alternative A states that credit conditions and the housing correction "appear likely to exert appreciable restraint" on growth, which is stronger than the statement that they have "the potential . . . to restrain economic growth." Third, in addition to giving a more gloomy modal assessment of the growth outlook, the draft language also cites the potential for significant financial spillovers to business and household spending as posing downside risks to that outlook. Finally, the draft for Alternative A is explicit that the downside risks to growth outweigh the upside risks to inflation.

(25) A 50 basis point rate cut and the adoption of the statement language in Alternative A would cause short-term interest rates to decline appreciably, as investors would be somewhat surprised by the magnitude of the policy action and would also infer that policy probably would be eased further. Longer-term interest rates likely would decline modestly and the dollar would depreciate. As with Alternative B, the effect on equity, credit and term funding markets is ambiguous, but the negative growth outlook in this alternative might well spook investors and cause stock prices to fall and risk spreads to rise.

(26) The Greenbook forecast is predicated on an assumption of a quarter-point easing in policy at this meeting and a second easing at the October meeting. If the Committee finds the staff forecast to be both plausible and likely to be the best attainable outcome under the current difficult circumstances, then it may choose to ease policy 25 basis points at this meeting and issue a statement pointing to downside risks to the outlook, as in **Alternative C**. Members may judge that the growth

outlook has deteriorated, but might not be convinced that the downside risks are sufficient to justify a 50 basis point easing at this meeting. Also, they may be unsure of the magnitude of the macroeconomic fallout from recent financial turmoil, and prefer to await more information before responding further. Indeed, they may think that financial market conditions could improve quickly, along the lines of the "Faster rebound" Greenbook alternative simulation. That view may be reinforced by the general resilience of equity prices in the face of credit market disruptions, a pattern that does not seem consistent with a serious financial crisis being underway. Members may also be concerned that a half-point easing in monetary policy at this time would be misconstrued by some investors as a sign that the Committee was responding directly to asset prices, potentially exacerbating moral hazard by encouraging excessive risk taking among market participants in the future. Moreover, some members may be concerned that investors could perceive a half-point easing at this meeting as signaling a downweighting of the Committee's price stability objective. If so, they may prefer to implement a more modest cut in rates at this time while expressing the judgment that the downside risks to growth outweigh the upside risks to inflation, even after the policy easing. Members may find this option especially attractive if they are concerned about the speed with which the Committee could reverse a larger rate cut should financial markets stabilize sooner than currently expected. A quarter-point easing in policy at this meeting is also in line with the prescription from optimal policy simulations with a 2 percent inflation goal (Chart 6).

(27) In the draft statement accompanying Alternative C, the assessment of the outlook for growth and inflation would be identical to that in Alternative B, but the balance of risks would point to the downside.

(28) With investors placing considerable weight on a 50 basis point cut at this meeting, the adoption of Alternative C would probably cause short-term interest rates to rise somewhat, even though the downside balance of risks would suggest that

further easing could well be forthcoming. The foreign exchange value of the dollar would likely appreciate modestly. With the Federal Reserve perhaps perceived as inclined to respond only gradually to the evolving circumstances—an impression that might be amplified by the Committtee's assessment that the risks are tilted to the downside—investors might mark down their outlook for economic growth, leading long-term yields and equity prices to fall and spreads in credit markets to widen somewhat.

(29) Members may be especially concerned about the dangers of overreacting to financial market developments and may not be convinced that the recent credit market turmoil will persist or have large macroeconomic implications. And, with the unemployment rate unchanged since the August FOMC meeting, productivity having decelerated considerably, core PCE inflation still close to 2 percent, and crude oil prices surging to record levels, some members may continue to be quite concerned about the inflation outlook. If so, they may prefer to leave policy unchanged at this meeting. An unchanged stance of policy, coupled with an assessment that the risks have moved into balance, as envisioned in **Alternative D,** would allow the Committee more time to gauge the need for policy adjustments while leaving the flexibility for policy to be eased at the next meeting, if such a move appears necessary at that time. Members may be particularly attracted to this alternative if they see a risk that a premature easing of policy could cause long-run inflation expectations to drift upwards. Indeed, optimal policy simulations with a 1½ percent inflation goal (Chart 6) suggest that policy should actually be tightened further at some point this year.

(30) The draft statement accompanying Alternative D retains the observation that economic growth was moderate during the first half of the year. It adopts language from the August 17 statement about recent financial developments and notes that such developments have the potential to restrain growth, but indicates that weakness in residential investment is likely to be offset by solid growth in other

sectors of the economy and concludes that the economy is nonetheless likely to continue to expand at a moderate pace. The inflation paragraph is barely changed from the August 7 statement, and the reference to pressures on resources is retained, suggesting that nothing has changed to diminish concerns about inflation. Given the potential for financial developments to restrain growth and the essentially unchanged inflation picture, the Committee would conclude that the risks to growth and inflation are now roughly balanced.

(31) Although investors do not completely rule out an unchanged target funds rate at this meeting, the adoption of Alternative D would come as a considerable surprise. Short-term interest rates would surely rise, and it is likely that equity prices would fall substantially and the Treasury yield curve would flatten, particularly if market participants marked up the odds of slow growth or a recession in light of the decision to leave policy unchanged.

Money and Debt Forecasts

(32) Under the Greenbook forecast, M2 growth is projected to average about 4½ percent at an annualized rate over the second half of 2007 and to continue to expand at roughly that rate in 2008 and 2009. The projected growth rate of M2 through the end of this year is a bit faster than in the August Greenbook, reflecting the easier path of policy now assumed.

(33) After having expanded at an annualized rate of 7½ percent in the first half of the year, domestic nonfinancial sector debt is expected to decelerate to a 6¼ percent pace in the second half and about 5 percent in both 2008 and 2009. The weaker outlook for the housing sector this round has led the staff to project a steeper decline in household borrowing than in the August forecast. Corporate debt growth is expected to slow later this year as the pace of merger and acquisition activity falls back from its recent elevated level. Owing to recent financial market stress, the

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

		M2		M2
	50 bp Easing	25 bp Easing	No change	Greenbook Forecast*
Monthly Growth Rates				
Apr-07	9.1	9.1	9.1	9.1
May-07	3.8	3.8	3.8	3.8
Jun-07	2.5	2.5	2.5	2.5
Jul-07	4.2	4.2	4.2	4.2
Aug-07	10.6	10.6	10.6	10.6
Sep-07	3.2	3.0	2.8	3.0
Oct-07	2.7	2.1	1.5	2.1
Nov-07	4.9	4.1	3.2	4.4
Dec-07	4.4	3.7	3.0	4.5
Jan-08	4.2	3.6	3.0	4.4
Feb-08	4.2	3.8	3.3	4.5
Mar-08	4.4	4.0	3.6	4.5
Quarterly Growth Rates				
2007 Q1	7.1	7.1	7.1	7.1
2007 Q2	6.7	6.7	6.7	6.7
2007 Q3	5.1	5.1	5.1	5.1
2007 Q4	4.4	3.9	3.4	4.1
2008 Q1	4.4	3.8	3.2	4.5
Annual Growth Rates				
2006	4.9	4.9	4.9	4.9
2007	6.0	5.8	5.7	5.9
2008	4.4	4.1	3.8	4.4
2009	4.4	4.4	4.4	4.4
Growth From To				
Aug-07 Dec-07	3.8	3.2	2.6	3.5
Sep-07 Dec-07	4.0	3.3	2.6	3.7
Sep-07 Mar-08	4.2	3.6	3.0	4.1
2007 Q2 Mar-08	4.7	4.3	3.9	4.6
2007 Q3 Mar-08	4.4	3.9	3.3	4.3
2007 Q3 2008 Q1	4.4	3.8	3.3	4.3
2007 Q3 2008 Q4	4.4	4.1	3.8	4.4
2007 Q2 Dec-07	4.8	4.4	4.1	4.6
2007 Q2 Mar-08	4.7	4.3	3.9	4.6

* 25 basis point cut in the target federal funds rate at the September and October FOMC meetings. This forecast is consistent with nominal GDP and interest rates in the Greenbook forecast.

forecast for the level of commercial paper outstanding has been revised down in the second half of the year but, offsetting this, the forecast for bank loans and corporate bonds has been marked up. These effects are mostly expected to unwind over coming quarters. Corporate bond spreads are forecast to edge down from their current levels, but to remain higher than they were earlier this year throughout the forecast period. Terms and standards on bank loans are expected to tighten moderately and those on mortgage loans to be substantially tighter for some borrowers for an extended period.

Directive and Balance of Risks Statement

Draft language for the directive and draft risk assessments identical to those presented in Table 1 are 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 ________ ~~5¼~~ percent.

Risk Assessments

A. Even after today's action, the Committee judges that the downside risks to economic growth outweigh the upside risks to inflation. Future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information.

B. The Committee will continue to closely follow timely indicators of economic prospects and will act as needed to foster price stability and sustainable economic growth.

C. Even after today's action, the Committee judges that the downside risks to economic growth outweigh the upside risks to inflation. Future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information.

D. In the current circumstances, the Committee judges that the downside risks to economic growth are now roughly balanced by the upside risks to inflation. Future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information.

Appendix A: Measures of the Equilibrium Real Rate

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

The actual real federal funds rate is constructed as the difference between the nominal rate and realized inflation, where the nominal rate is measured as the quarterly average of the observed federal funds rate, and realized inflation is given by the log difference between the core PCE price index and its lagged value four quarters earlier. For the current quarter, the nominal rate is specified as the target federal funds rate on the Bluebook publication date. For the current quarter and the previous quarter, the inflation rate is computed using the staff's estimate of the core PCE price index.

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 five variables: the output gap, the equity premium, the federal budget surplus, the trend growth rate of output, and the real bond yield.
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 ($\Delta^4 y_{t+3|t} - \Delta^4 y_{t+3|t}^*$), 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), while the third is a variant of the Taylor (1999) rule—introduced in the August Bluebook—with a higher value of r^*. 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	$i_t = 2 + \pi_t + 0.5(\pi_t - \pi^*) + (y_t - y_t^*)$
Taylor (1999) rule with higher *r**	$i_t = 2.75 + \pi_t + 0.5(\pi_t - \pi^*) + (y_t - y_t^*)$
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.

References:

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

—————— (1999). "A Historical Analysis of Monetary Policy Rules," in John B. Taylor, ed., *Monetary Policy Rules*. The University of Chicago Press, pp. 319-341.

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

Appendix C Table 1

Selected Interest Rates
(Percent)

	Short-term						Long-term									
	Federal funds	Treasury bills secondary market			CDs secondary market	Comm. paper	Off-the-run Treasury yields				Indexed yields		Moody's Baa	Municipal Bond Buyer	Conventional home mortgages primary market	
		4-week	3-month	6-month	3-month	1-month	2-year	5-year	10-year	20-year	5-year	10-year			Fixed-rate	ARM
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
06 -- High	5.34	5.27	5.13	5.33	5.50	5.32	5.32	5.20	5.32	5.45	2.63	2.68	6.94	5.31	6.80	5.83
-- Low	4.22	3.91	4.17	4.37	4.50	4.22	4.34	4.28	4.42	4.59	1.82	1.94	6.08	4.52	6.10	5.15
07 -- High	5.41	5.27	5.19	5.19	5.77	5.30	5.12	5.16	5.33	5.44	2.77	2.81	6.86	4.77	6.74	5.84
-- Low	4.54	2.39	3.16	4.08	5.28	4.99	3.91	3.98	4.45	4.70	1.97	2.15	6.09	4.38	6.14	5.40
Monthly																
Sep 06	5.25	4.76	4.93	5.08	5.34	5.21	4.78	4.64	4.80	4.94	2.35	2.35	6.43	4.82	6.40	5.56
Oct 06	5.25	4.97	5.05	5.12	5.33	5.20	4.81	4.66	4.80	4.95	2.49	2.43	6.42	4.78	6.36	5.55
Nov 06	5.25	5.22	5.07	5.15	5.32	5.21	4.74	4.54	4.66	4.79	2.39	2.30	6.20	4.59	6.24	5.51
Dec 06	5.24	4.86	4.98	5.07	5.32	5.23	4.68	4.50	4.63	4.79	2.27	2.27	6.22	4.54	6.14	5.45
Jan 07	5.25	4.92	5.11	5.15	5.32	5.22	4.88	4.72	4.83	4.96	2.45	2.45	6.34	4.55	6.22	5.47
Feb 07	5.26	5.18	5.16	5.16	5.31	5.22	4.85	4.68	4.80	4.94	2.33	2.38	6.28	4.53	6.29	5.51
Mar 07	5.26	5.22	5.08	5.10	5.30	5.23	4.62	4.46	4.65	4.83	2.04	2.20	6.27	4.41	6.16	5.44
Apr 07	5.25	4.99	5.01	5.07	5.31	5.23	4.71	4.57	4.77	4.96	2.11	2.28	6.39	4.47	6.18	5.45
May 07	5.25	4.81	4.87	4.98	5.31	5.22	4.79	4.64	4.82	4.99	2.25	2.39	6.39	4.49	6.26	5.52
Jun 07	5.25	4.51	4.74	4.95	5.33	5.24	5.01	5.00	5.17	5.30	2.66	2.69	6.70	4.73	6.66	5.68
Jul 07	5.26	4.80	4.96	5.04	5.32	5.23	4.84	4.86	5.08	5.20	2.62	2.66	6.65	4.69	6.70	5.71
Aug 07	5.02	4.19	4.32	4.55	5.49	5.24	4.36	4.44	4.80	5.02	2.43	2.48	6.65	4.58	6.57	5.67
Weekly																
Jul 13 07	5.24	4.70	4.96	5.04	5.32	5.24	4.95	4.97	5.18	5.28	2.68	2.73	6.69	4.71	6.73	5.71
Jul 20 07	5.27	4.75	4.97	5.06	5.32	5.23	4.88	4.90	5.11	5.21	2.66	2.69	6.62	4.70	6.73	5.72
Jul 27 07	5.27	4.97	4.96	5.03	5.32	5.24	4.71	4.72	4.97	5.10	2.55	2.57	6.61	4.63	6.69	5.69
Aug 3 07	5.26	5.02	4.91	4.96	5.33	5.24	4.59	4.59	4.87	5.01	2.47	2.49	6.62	4.45	6.68	5.59
Aug 10 07	5.19	4.81	4.83	4.92	5.43	5.28	4.57	4.60	4.91	5.08	2.55	2.57	6.66	4.53	6.59	5.65
Aug 17 07	4.76	3.89	4.22	4.52	5.52	5.24	4.34	4.45	4.84	5.07	2.43	2.51	6.70	4.53	6.62	5.67
Aug 24 07	4.93	3.33	3.71	4.17	5.49	5.23	4.20	4.35	4.75	5.03	2.39	2.45	6.68	4.75	6.52	5.60
Aug 31 07	5.11	4.22	4.17	4.38	5.59	5.22	4.20	4.27	4.67	4.92	2.35	2.40	6.60	4.64	6.45	5.84
Sep 7 07	5.02	4.32	4.30	4.39	5.73	5.19	4.09	4.15	4.61	4.84	2.23	2.34	6.55	4.51	6.31	5.74
Sep 14 07	--	4.03	4.05	4.24	5.69	5.04	4.01	4.07	4.51	4.74	2.09	2.19	--	--	6.31	5.66
Daily																
Aug 28 07	5.30	4.60	4.40	4.48	5.53	5.21	4.16	4.25	4.66	4.92	2.33	2.39	6.60	--	--	--
Aug 29 07	5.00	4.02	3.98	4.30	5.58	5.20	4.20	4.29	4.69	4.95	2.36	2.42	6.62	--	--	--
Aug 30 07	5.00	3.69	3.84	4.21	5.63	5.24	4.14	4.22	4.64	4.89	2.29	2.37	6.58	--	--	--
Aug 31 07	4.96	4.03	4.01	4.21	5.68	5.22	4.20	4.25	4.66	4.90	2.33	2.39	6.59	--	--	--
Sep 3 07	4.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sep 4 07	5.22	4.57	4.47	4.52	5.70	5.19	4.20	4.26	4.68	4.90	2.33	2.41	6.60	--	--	--
Sep 5 07	5.18	4.41	4.36	4.41	5.77	5.20	4.08	4.15	4.61	4.84	2.24	2.34	6.54	--	--	--
Sep 6 07	4.98	4.28	4.29	4.42	5.73	5.22	4.13	4.18	4.63	4.86	2.27	2.37	6.57	--	--	--
Sep 7 07	4.86	4.03	4.06	4.20	5.71	5.16	3.95	4.02	4.50	4.76	2.10	2.23	6.48	--	--	--
Sep 10 07	5.07	3.93	3.96	4.20	5.70	5.10	3.91	3.98	4.45	4.70	2.06	2.19	6.47	--	--	--
Sep 11 07	5.06	4.13	4.11	4.27	5.72	5.03	4.00	4.05	4.48	4.71	2.09	2.19	6.48	--	--	--
Sep 12 07	5.18	4.00	4.04	4.20	5.65	4.99	4.01	4.08	4.52	4.74	2.10	2.21	6.54	--	--	--
Sep 13 07	5.20 p	4.04	4.08	4.27	5.68	--	4.13	4.19	4.59	4.81	2.19	2.26	--	--	--	--

NOTE: Weekly data for columns 1 through 13 are week-ending averages. Columns 2 through 4 are on a coupon equivalent basis. Data in column 6 are interpolated from data on certain commercial paper trades settled by the Depository Trust Company. Column 14 is the Bond Buyer revenue index, which is a 1-day quote for Thursday. Column 15 is the average contract rate on new commitments for fixed-rate mortgages (FRMs) with 80 percent loan-to-value ratios at major institutional lenders. Column 16 is the average initial contract rate on new commitments for 1-year, adjustable-rate mortgages (ARMs) at major institutional lenders offering both FRMs and ARMs with the same number of discount points.

p - preliminary data

Appendix C Table 2

Money Aggregates

Seasonally Adjusted

Period	M1	M2	Nontransactions Components in M2
	1	2	3
Annual growth rates (%):			
Annually (Q4 to Q4)			
2004	5.4	5.3	5.3
2005	0.3	4.1	5.1
2006	-0.4	4.9	6.3
Quarterly (average)			
2006-Q3	-3.4	4.0	5.9
Q4	-0.3	6.4	8.1
2007-Q1	-0.4	7.1	8.9
Q2	2.2	6.7	7.8
Monthly			
2006-Aug.	0.1	4.6	5.7
Sep.	-7.2	3.8	6.5
Oct.	4.4	8.6	9.7
Nov.	1.3	6.1	7.3
Dec.	-4.2	6.9	9.6
2007-Jan.	5.3	8.9	9.8
Feb.	-10.0	3.8	7.2
Mar.	7.9	9.4	9.8
Apr.	8.3	9.1	9.3
May	0.0	3.8	4.8
June	-10.9	2.5	5.6
July	1.7	4.2	4.8
Aug. p	-0.8	10.6	13.3
Levels ($billions):			
Monthly			
2007-Apr.	1379.3	7206.0	5826.7
May	1379.3	7229.0	5849.8
June	1366.8	7243.9	5877.0
July	1368.7	7269.3	5900.5
Aug. p	1367.8	7333.8	5966.0
Weekly			
2007-Aug. 6	1375.0	7282.4	5907.4
13	1355.8	7288.9	5933.1
20	1351.5	7334.3	5982.8
27p	1366.7	7399.7	6033.0
Sep. 3p	1423.0	7366.1	5943.1

p preliminary

Appendix C Table 3
Changes in System Holdings of Securities [1]
(Millions of dollars, not seasonally adjusted)

September 13, 2007

	Treasury Bills			Treasury Coupons						Federal Agency	Net change total	Net RPs [5]		
	Net Purchases [2]	Redemptions (-)	Net Change	Net Purchases [3] < 1	Net Purchases [3] 1-5	Net Purchases [3] 5-10	Net Purchases [3] Over 10	Redemptions (-)	Net Change	Redemptions (-)	outright holdings [4]	Short-Term [6]	Long-Term [7]	Net Change
2004	18,138	---	18,138	7,994	17,249	5,763	1,364	---	32,370	---	50,507	-2,522	-331	-2,853
2005	8,300	---	8,300	2,894	11,309	3,626	2,007	2,795	17,041	---	25,341	-2,415	-192	-2,607
2006	5,748	---	5,748	4,967	26,354	4,322	3,299	10,552	28,390	---	34,138	-2,062	-556	-2,618
2006 QII	---	---	---	1,375	6,063	1,181	---	1,217	7,402	---	7,402	-627	-4,413	-5,040
QIII	1,649	---	1,649	415	3,323	548	228	3,931	583	---	2,232	-3,229	-839	-4,068
QIV	---	---	---	1,977	9,525	889	1,852	4,084	10,159	---	10,159	-2,379	4,848	2,469
2007 QI	---	---	---	817	1,061	---	---	---	1,878	---	1,878	-2,815	1,059	-1,755
QII	---	---	---	1,394	6,478	290	640	---	8,802	---	8,802	1,520	-4,673	-3,153
2007 Jan	---	---	---	---	---	---	---	---	---	---	---	-428	-3,806	-4,234
Feb	---	---	---	817	1,061	---	---	---	1,878	---	1,878	-6,853	3,911	-2,941
Mar	---	---	---	---	---	---	---	---	---	---	---	1,965	-492	1,473
Apr	---	---	---	1,394	3,742	290	640	---	6,066	---	6,066	1,250	-2,425	-1,174
May	---	---	---	---	2,736	---	---	---	2,736	---	2,736	2,165	-4,930	-2,765
Jun	---	---	---	---	---	---	---	---	---	---	---	-331	97	-234
Jul	---	---	---	---	---	---	---	---	---	---	---	1,600	-903	697
Aug	---	10,000	-10,000	---	---	---	---	1,236	-1,236	---	-11,236	2,888	677	3,565
2007 Jun 20	---	---	---	---	---	---	---	---	---	---	---	2,201	---	2,201
Jun 27	---	---	---	---	---	---	---	---	---	---	---	-1,000	-3,000	-4,000
Jul 4	---	---	---	---	---	---	---	---	---	---	---	4,027	4,000	8,027
Jul 11	---	---	---	---	---	---	---	---	---	---	---	-4,816	1,000	-3,816
Jul 18	---	---	---	---	---	---	---	---	---	---	---	3,801	-4,000	-199
Jul 25	---	---	---	---	---	---	---	---	---	---	---	-3,613	---	-3,613
Aug 1	---	---	---	---	---	---	---	---	---	---	---	6,094	-1,000	5,094
Aug 8	---	---	---	---	---	---	---	---	---	---	---	-4,527	-1,000	-5,527
Aug 15	---	---	---	---	---	---	---	1,236	-1,236	---	-1,236	11,005	7,000	18,005
Aug 22	---	---	---	---	---	---	---	---	---	---	---	-13,673	---	-13,673
Aug 29	---	5,000	-5,000	---	---	---	---	---	---	---	-5,000	7,428	-5,000	2,428
Sep 5	---	5,000	-5,000	---	---	---	---	---	---	---	-5,000	8,386	---	8,386
Sep 12	---	---	---	---	---	---	---	---	---	---	---	-3,003	---	-3,003
2007 Sep 13	---	---	---	---	---	---	---	---	---	---	---	-18,144	---	-18,144
Intermeeting Period														
Aug 7-Sep 13	---	10,000	-10,000	---	---	---	---	1,236	-1,236	---	-11,236	3,326	2,000	5,326
Memo: LEVEL (bil. $)														
Sep 13			267.0	113.6	237.3	75.5	86.2		512.6	---	779.6	-18.6	12.0	-6.6

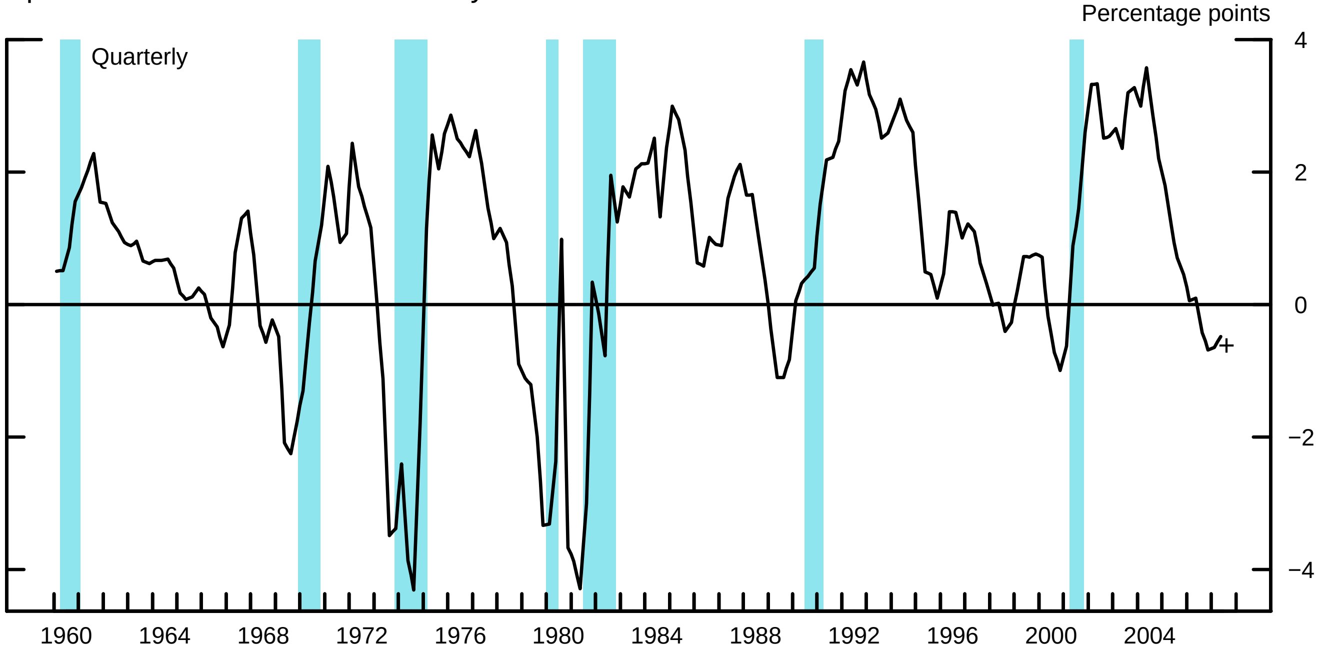
1. Change from end-of-period to end-of-period. Excludes changes in compensation for the effects of inflation on the principal of inflation-indexed securities.
2. Outright purchases less outright sales (in market and with foreign accounts).
3. Outright purchases less outright sales (in market and with foreign accounts). Includes short-term notes acquired in exchange for maturing bills. Excludes maturity shifts and rollovers of maturing issues, except the rollover of inflation compensation.
4. Includes redemptions (-) of Treasury and agency securities.
5. RPs outstanding less reverse RPs.
6. Original maturity of 13 days or less.
7. Original maturity of 14 to 90 days.

MRA:HJR

Appendix C Chart 1

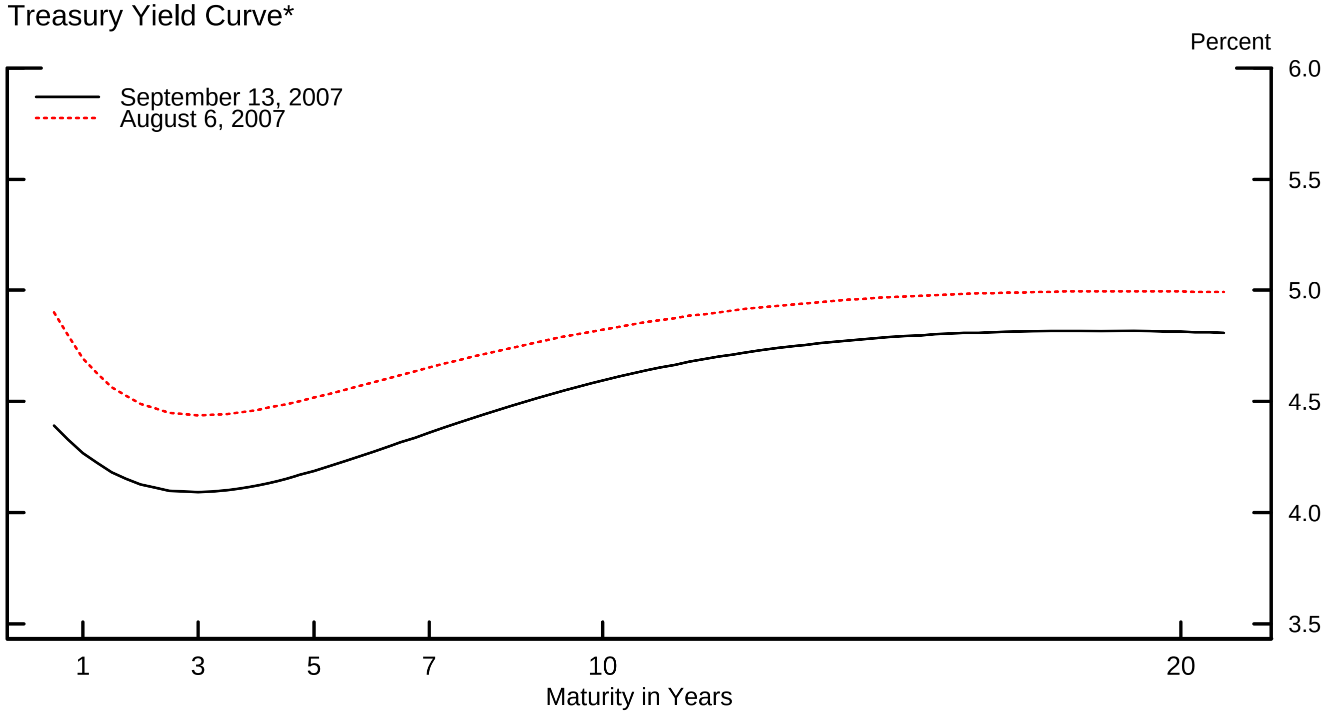
Treasury Yield Curve

Spread Between Ten−Year Treasury Yield and Federal Funds Rate



+ Denotes most recent weekly value.
Note. Blue shaded regions denote NBER−dated recessions.

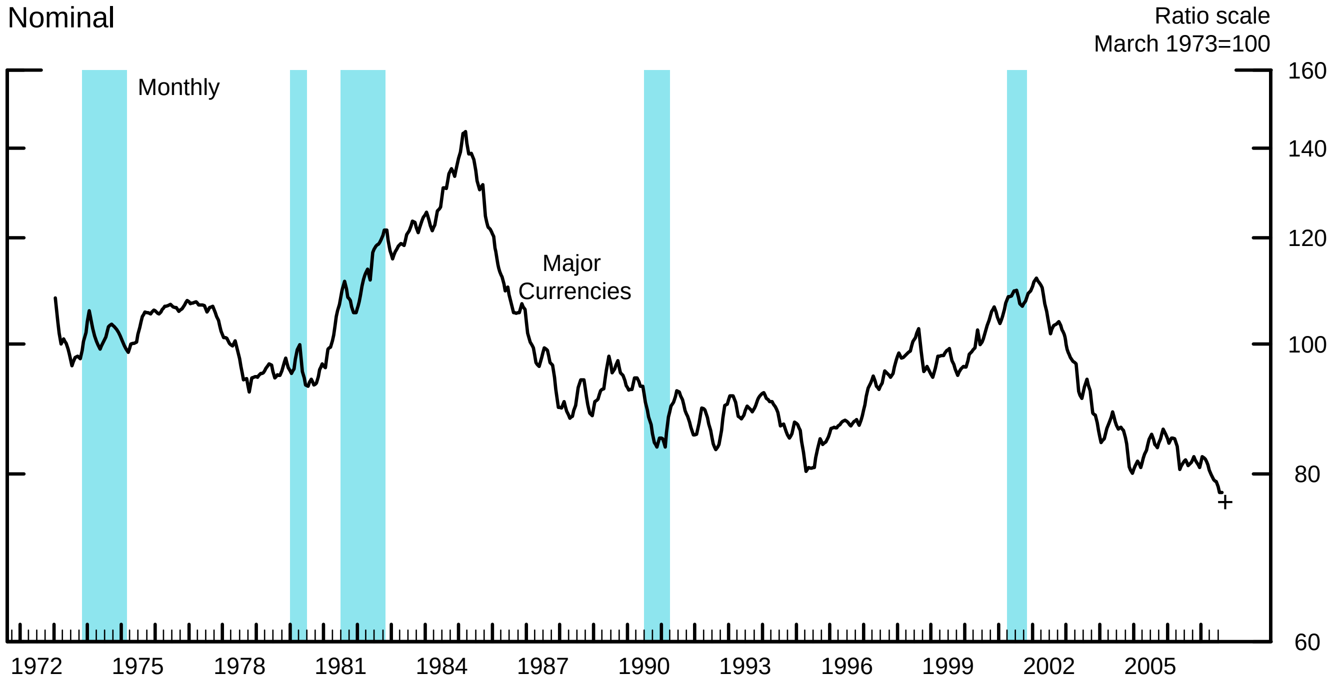
Treasury Yield Curve*



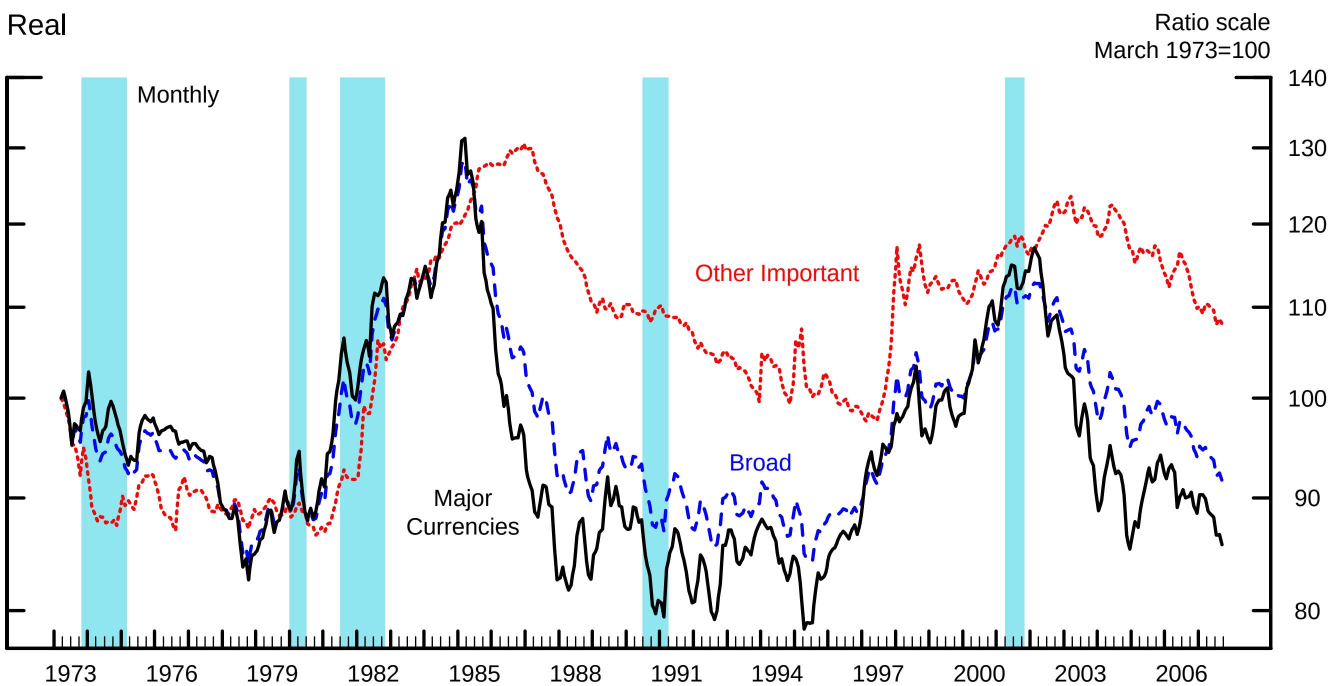
*Smoothed yield curve estimated from off−the−run Treasury coupon securities. Yields shown are those on notional par Treasury securities with semi−annual coupons.

Appendix C Chart 2

Dollar Exchange Rate Indexes



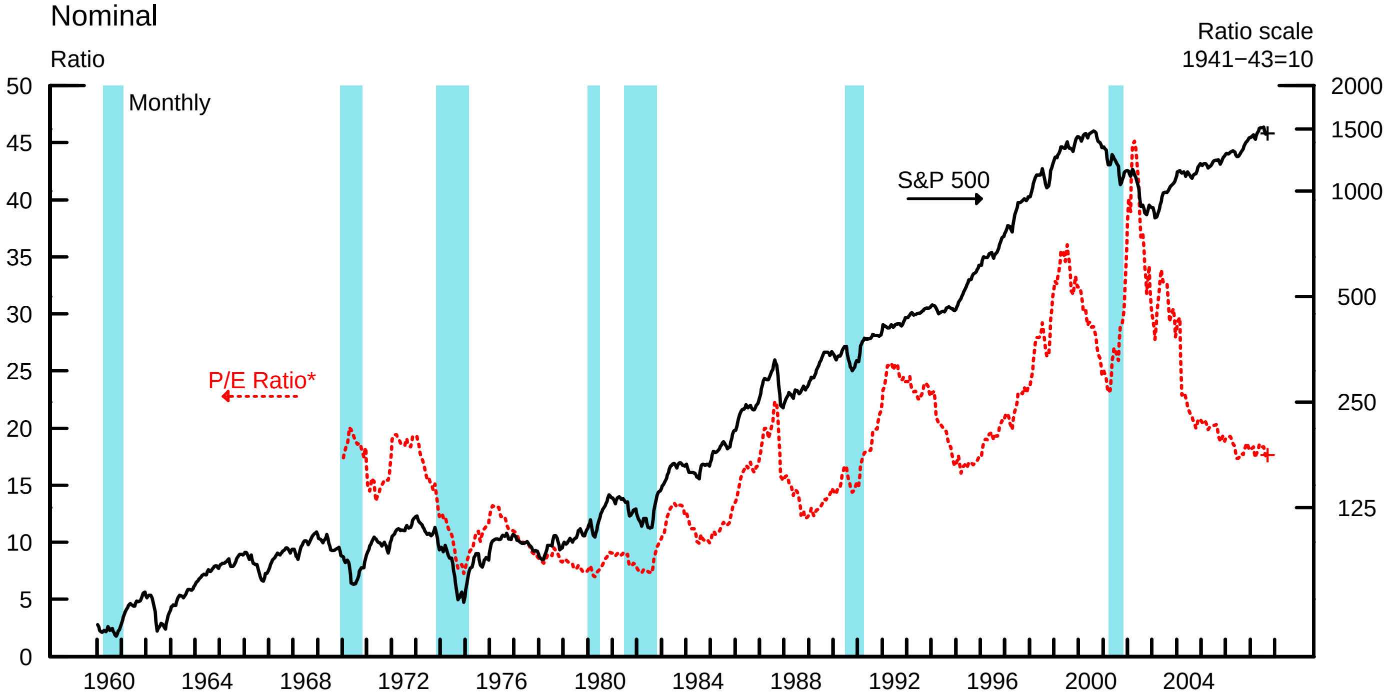
+ Denotes most recent weekly value.



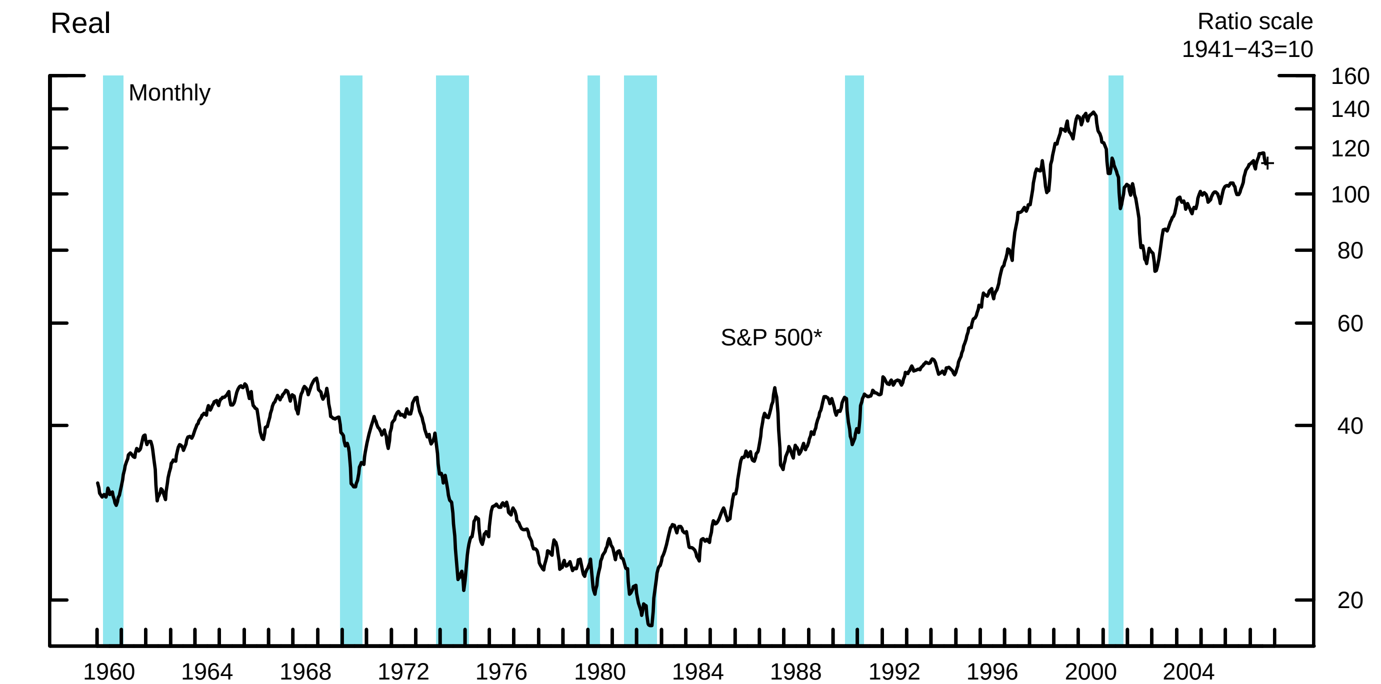
Note. The major currencies index is the trade−weighted average of currencies of the euro area, Canada, Japan, the U.K., Switzerland, Australia, and Sweden. The other important trading partners index is the trade−weighted average of currencies of 19 other important trading partners. The Broad index is the trade−weighted average of currencies of all important trading partners. Real indexes have been adjusted for relative changes in U.S. and foreign consumer prices. Blue shaded regions denote NBER−dated recessions. The most recent monthly observations are based on staff forecasts of CPI inflation for those countries where actual data are not yet available.

Appendix C Chart 3

Stock Indexes



* Based on trailing four−quarter earnings.
+ Denotes most recent weekly value.

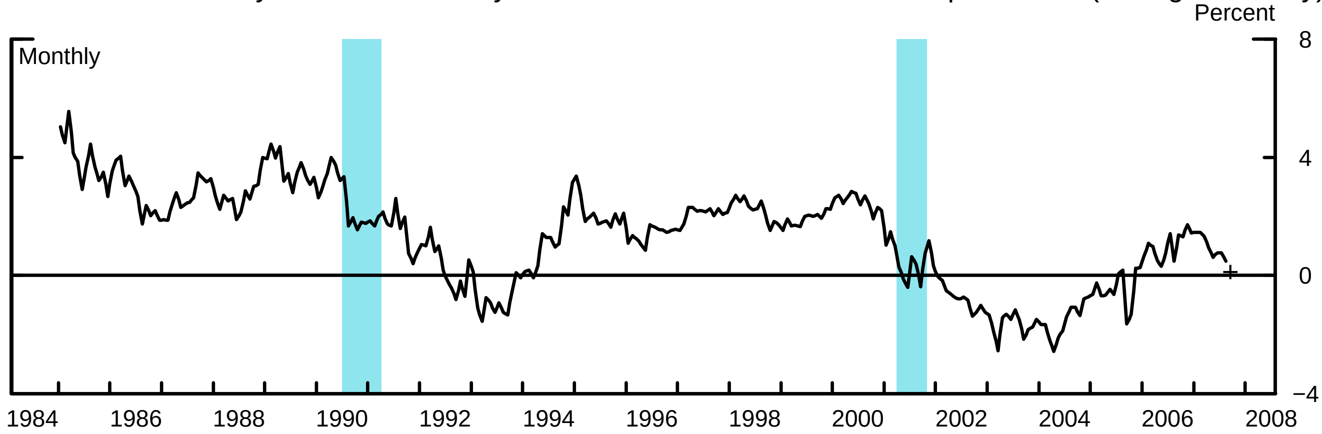


* Deflated by the CPI.
+ Denotes most recent weekly value.
Note. Blue shaded regions denote NBER−dated recessions.

Appendix C Chart 4

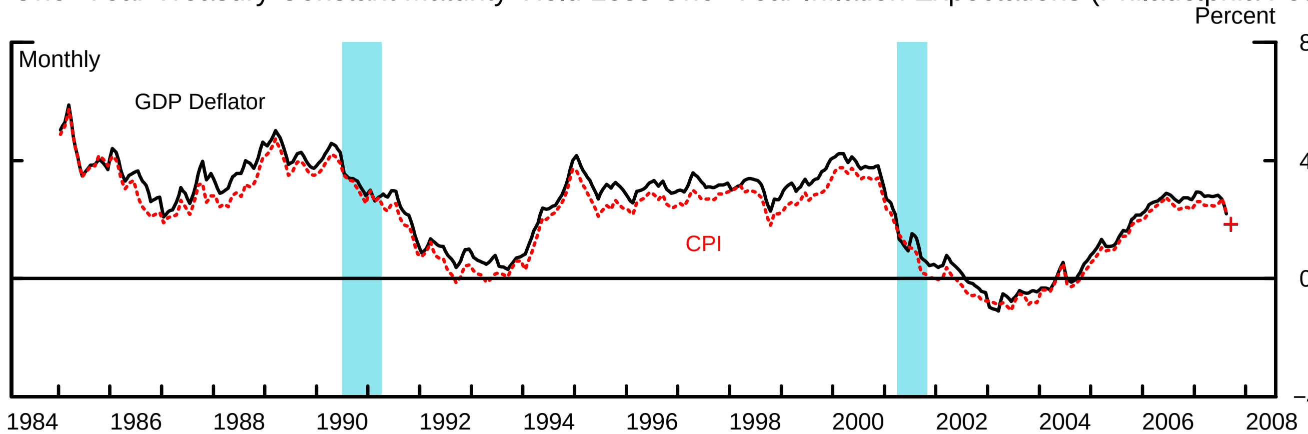
One−Year Real Interest Rates

One−Year Treasury Constant Maturity Yield Less One−Year Inflation Expectations (Michigan Survey)*



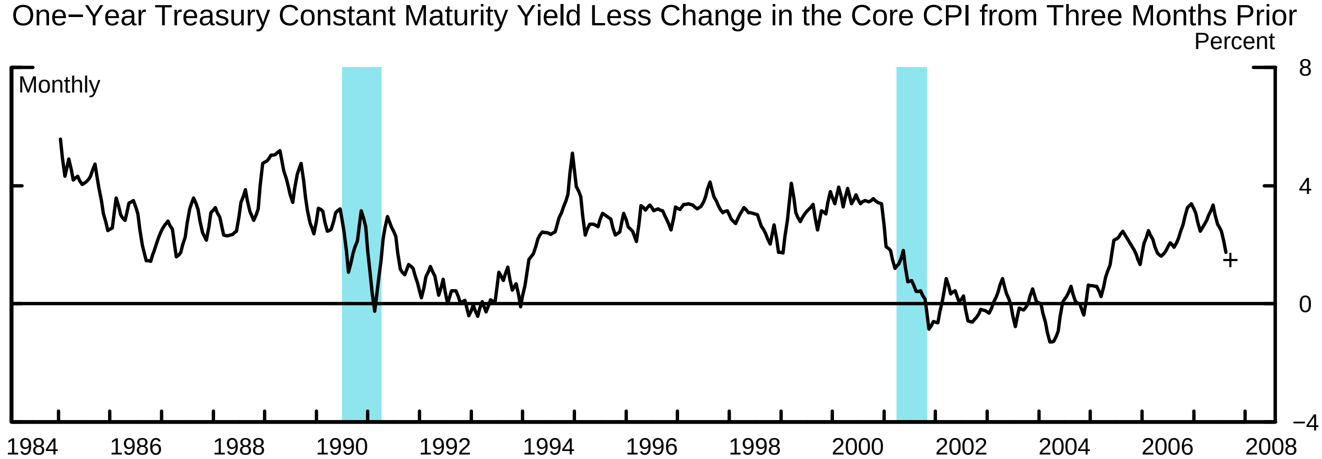
* Mean value of respondents.

One−Year Treasury Constant Maturity Yield Less One−Year Inflation Expectations (Philadelphia Fed)*



* ASA/NBER quarterly survey until 1990:Q1; Philadelphia Federal Reserve Bank Survey of Professional Forecasters thereafter. Median value of respondents.

One−Year Treasury Constant Maturity Yield Less Change in the Core CPI from Three Months Prior

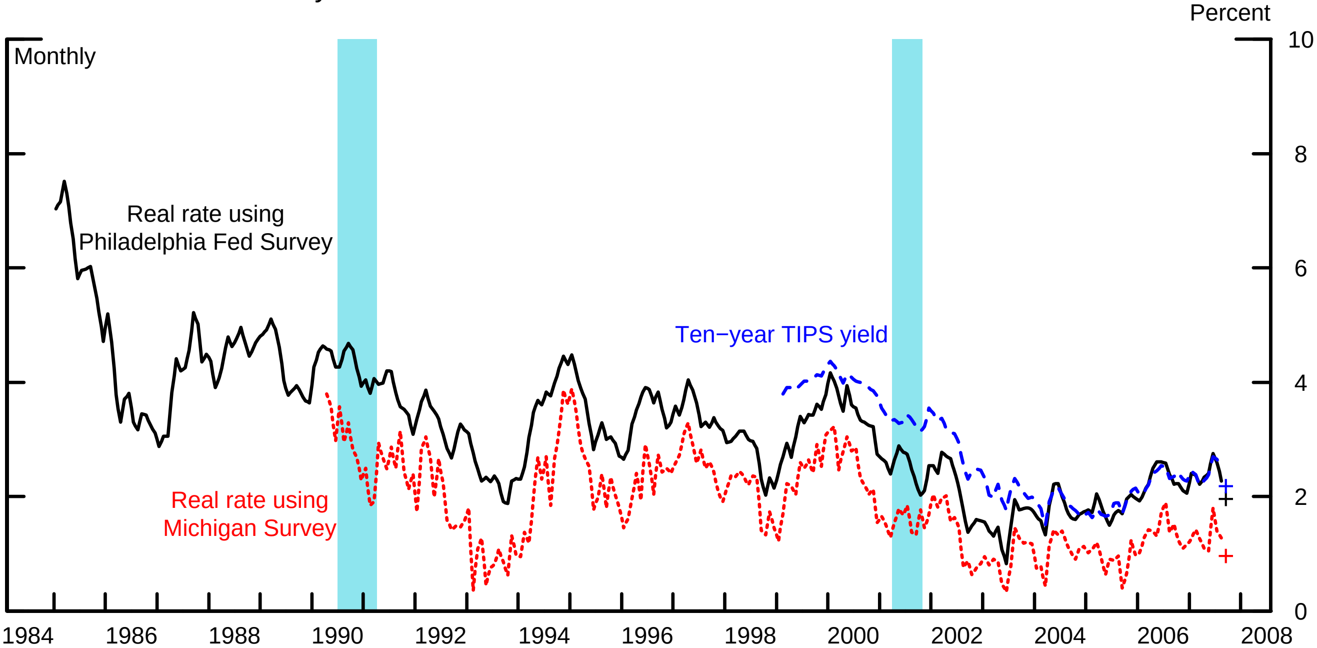


\+ Denotes most recent weekly Treasury constant maturity yield less most recent inflation expectation.
Note. Blue shaded regions denote NBER−dated recessions.

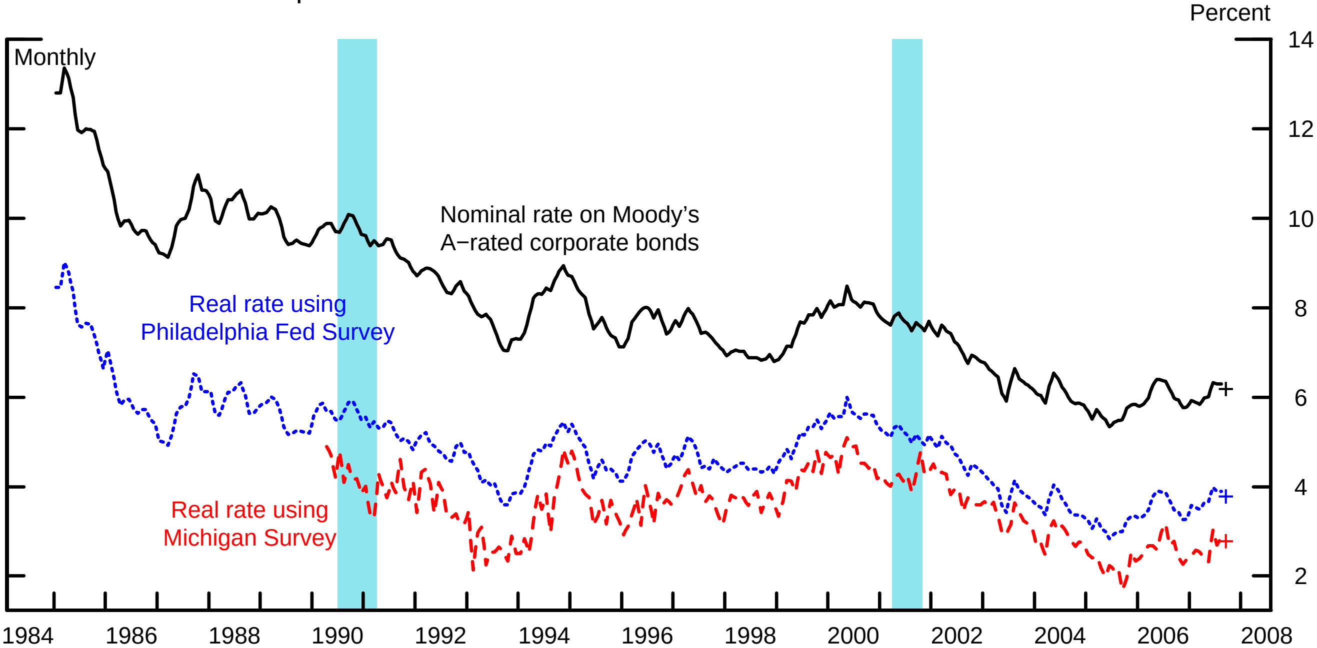
Appendix C Chart 5

Long−Term Real Interest Rates*

Real Ten−Year Treasury Yields



Nominal and Real Corporate Bond Rates

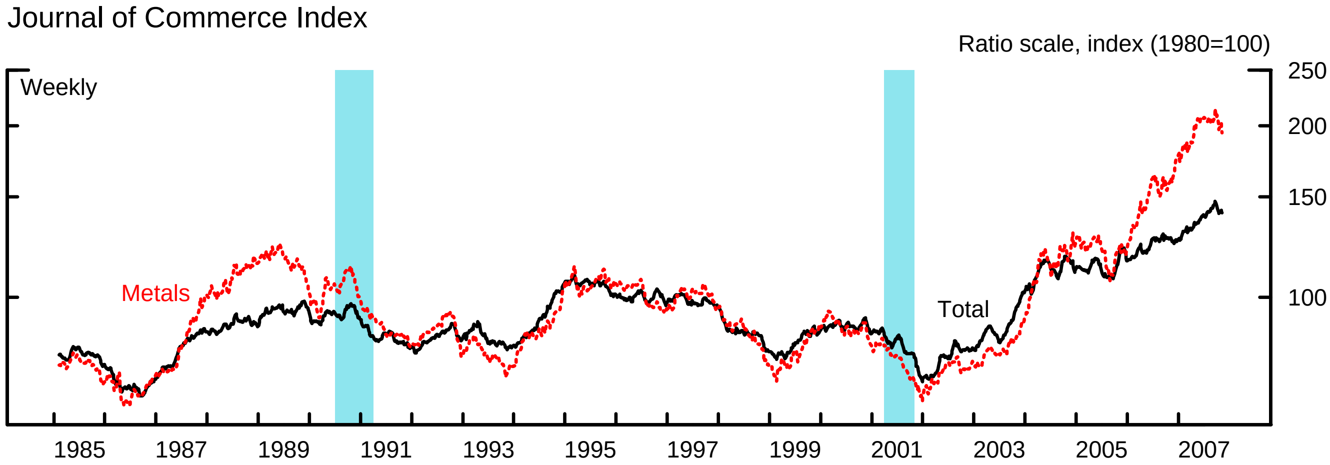


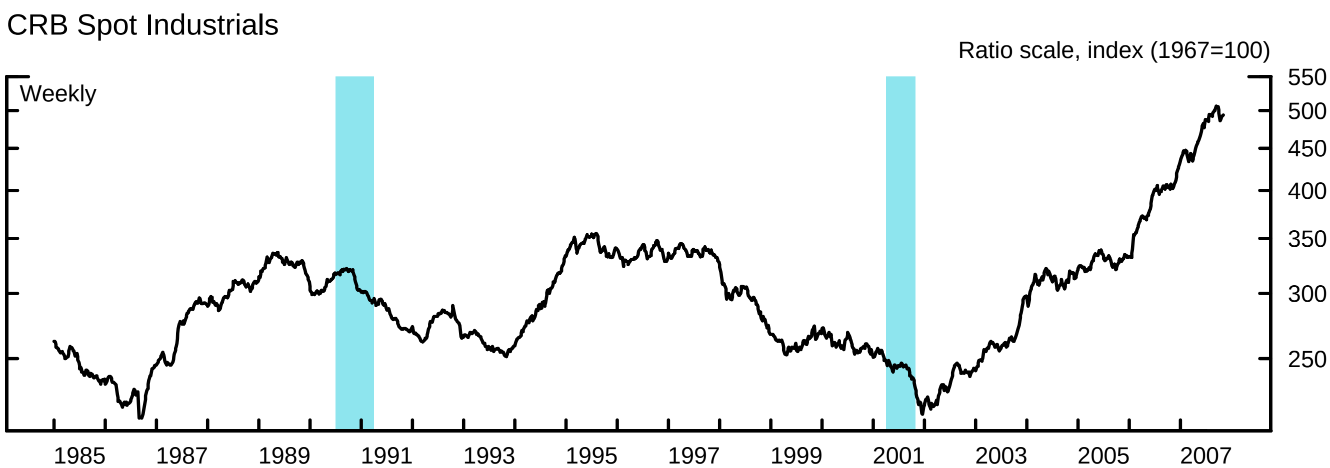
* For real rates, measures using the Philadelphia Fed Survey employ the ten−year inflation expectations from the Blue Chip Survey until April 1991 and the Philadelphia Federal Reserve Bank Survey of Professional Forecasters thereafter (median value of respondents). Measures using the Michigan Survey employ the five− to ten−year inflation expectations from that survey (mean value of respondents).

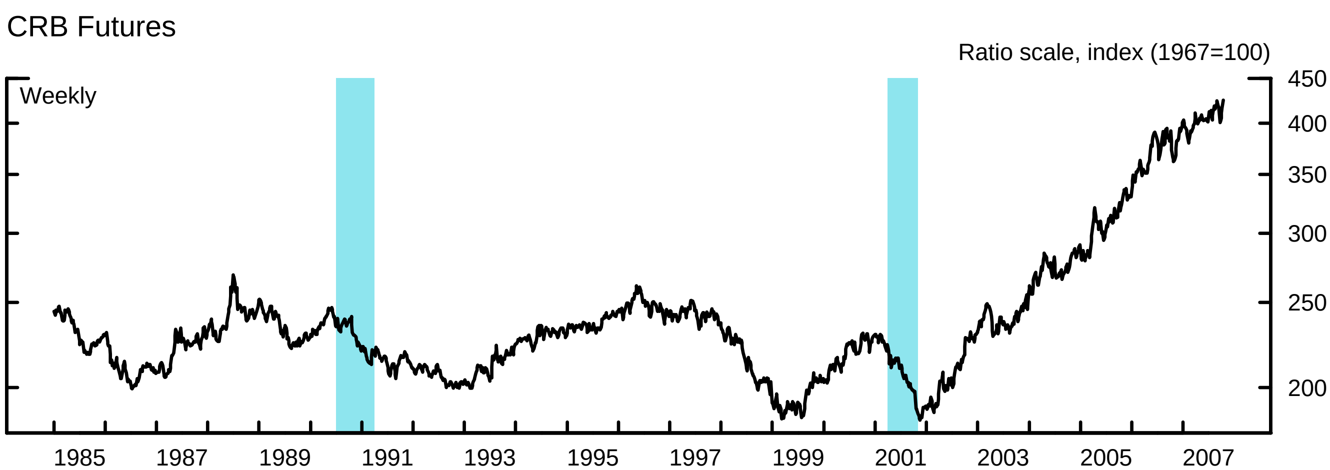
\+ For TIPS and nominal corporate rate, denotes the most recent weekly value. For other real rate series, denotes the most recent weekly nominal yield less the most recent inflation expectation.
Note. Blue shaded regions denote NBER−dated recessions.

Appendix C Chart 6

Commodity Price Measures





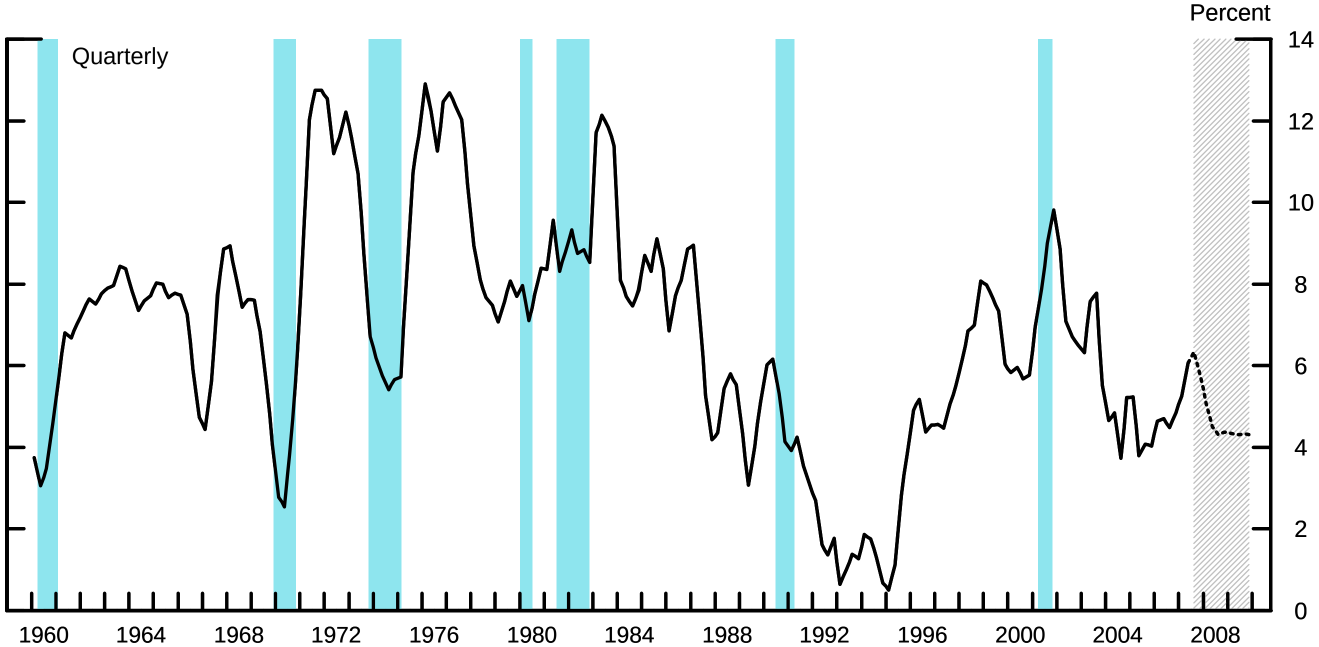


Note. Blue shaded regions denote NBER−dated recessions.

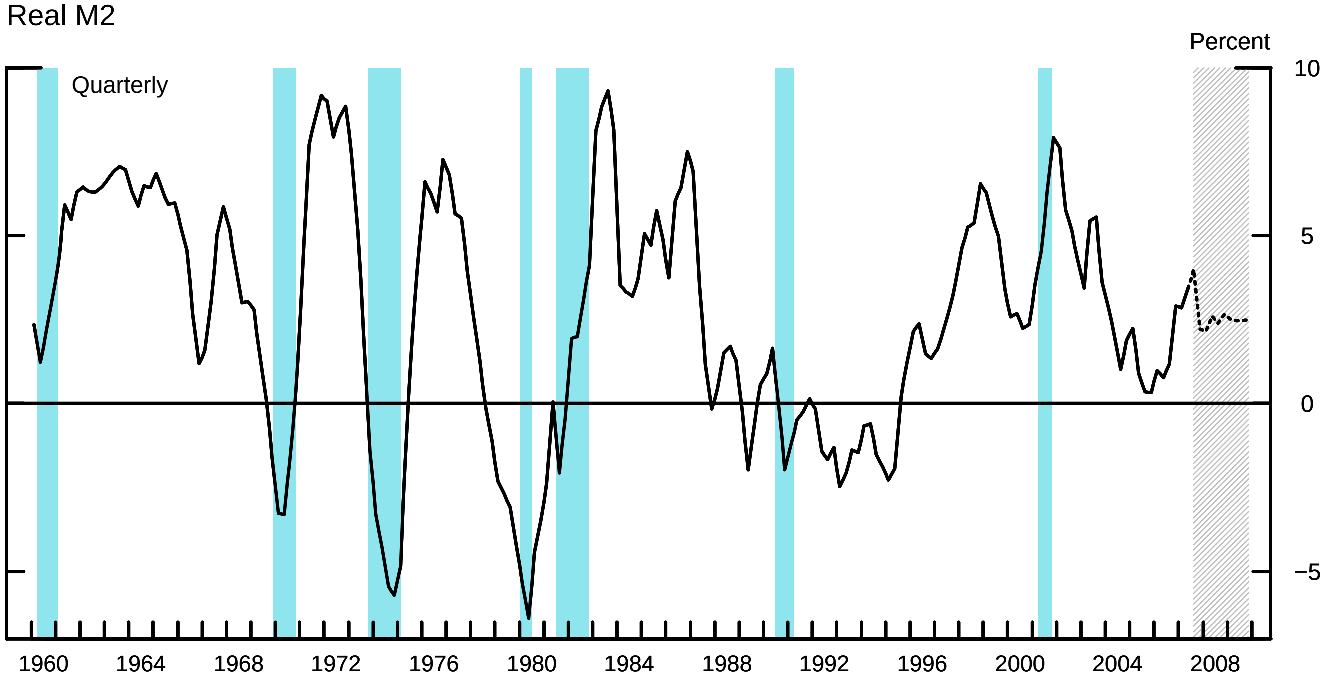
Appendix C Chart 7

Growth of M2

Nominal M2



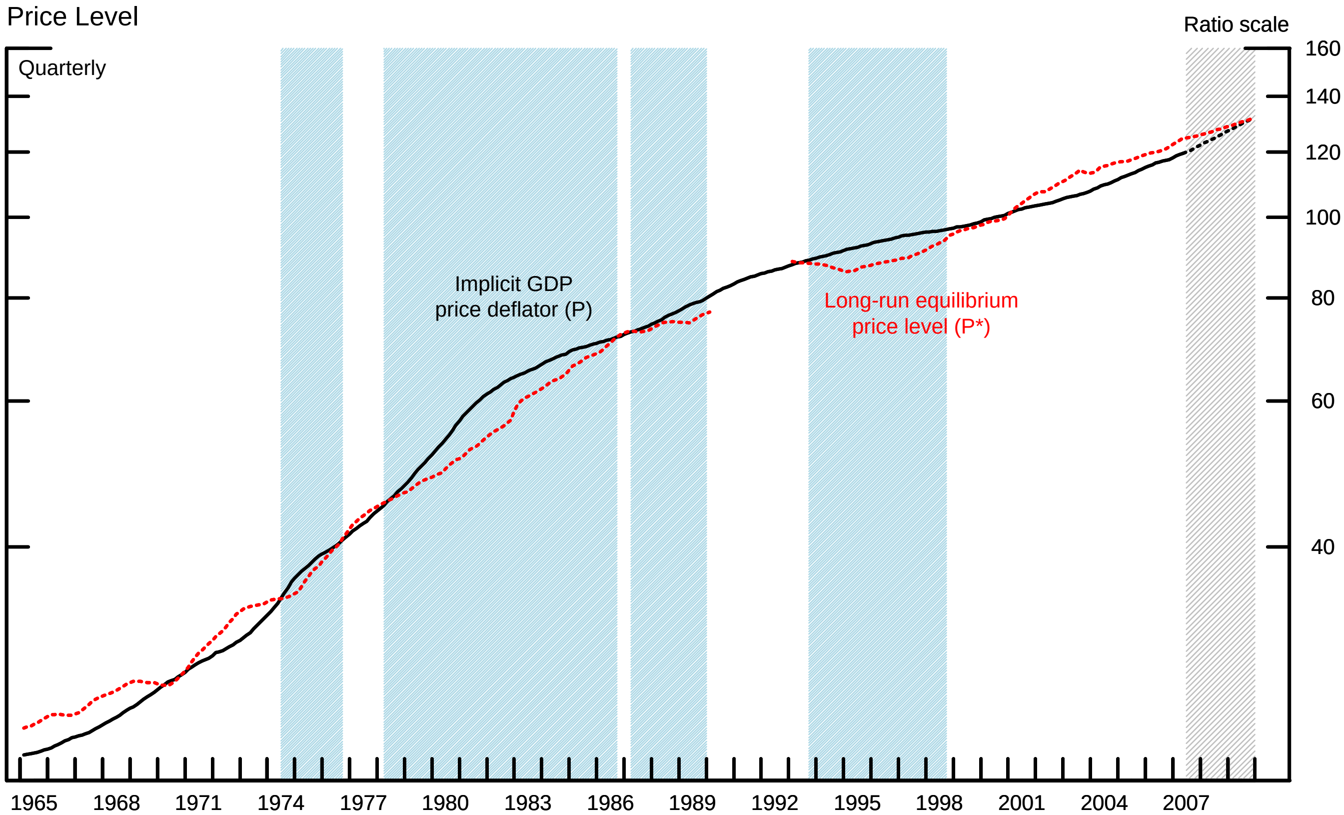
Real M2

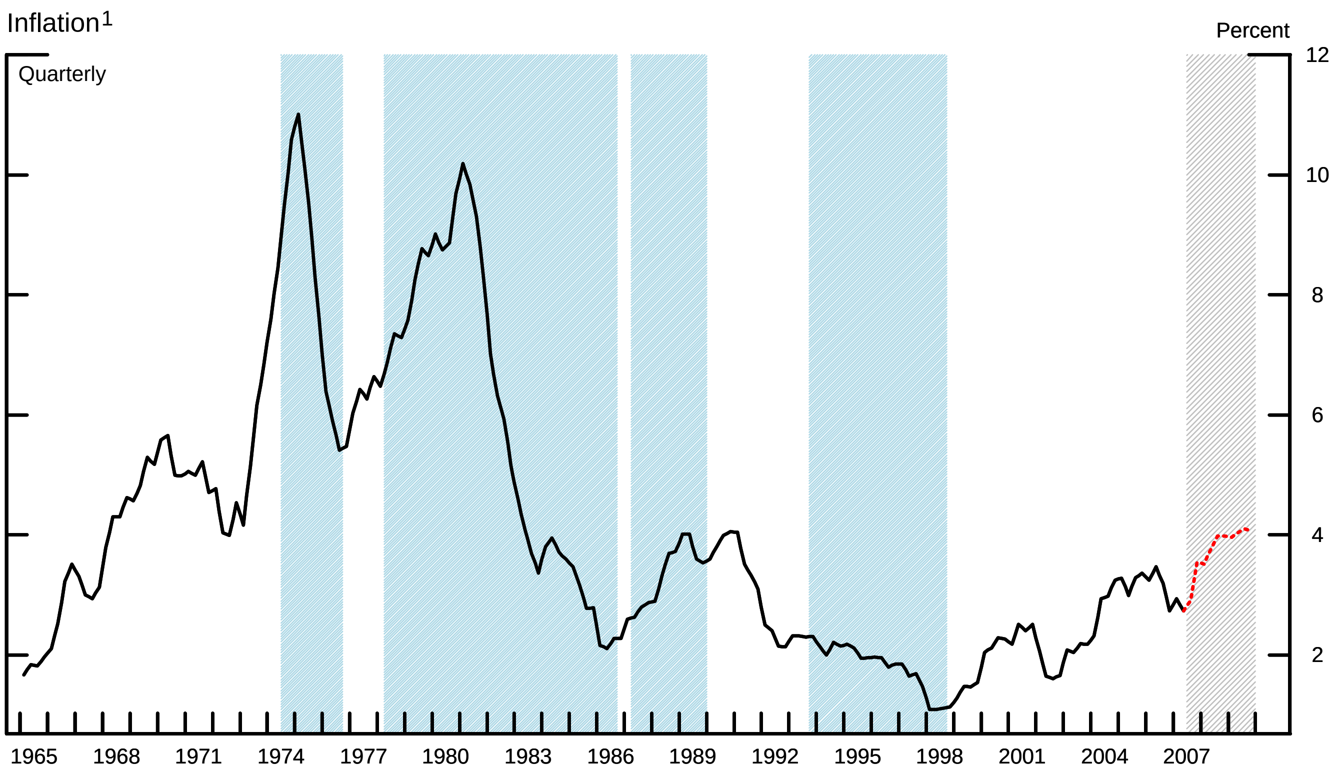


Note. Four−quarter moving average. Blue shaded regions denote NBER−dated recessions. Gray areas denote projection period. Real M2 is deflated by CPI.

Appendix C Chart 8

Inflation Indicator Based on M2





1. Change in the implicit GDP price deflator over the previous four quarters.

Note: P* is defined to equal M2 times V* divided by potential GDP. V*, or long-run velocity, is estimated using average velocity over the 1959:Q1-to-1989:Q4 period and then, after a break, over the interval from 1993:Q1 to the present. For the forecast period, P* is based on the staff M2 forecast and P is simulated using a short-run dynamic model relating P to P*. Blue areas indicate periods in which P* is notably less than P. Gray areas denote the projection period.