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.

OCTOBER 25, 2007

MONETARY POLICY ALTERNATIVES

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

Class I FOMC - Restricted Controlled (FR) **October 25, 2007**

MONETARY POLICY ALTERNATIVES

Recent Developments

Summary

(1) Financial market functioning improved somewhat over the intermeeting period, but conditions in a number of markets remained strained. Market interest rates declined and the expected path of the federal funds rate shifted down following the FOMC's decision at its September meeting to lower the target federal funds rate by 50 basis points. Amid mixed economic data releases and some worsening of credit concerns, yields moved down a bit further, on balance, over the remainder of the period. In longer-term corporate markets, investment- and speculative-grade bond spreads narrowed somewhat over the period as a whole. Bond issuance by investment-grade firms continued to be strong, a few LBO-related bonds were issued for the first time since early summer, and underwriters were able to syndicate a portion of a few large LBO-related loans to nonbank lenders. In housing finance, the spread between offer rates on prime jumbo fixed-rate mortgages and conforming loans declined a bit, but remained elevated. Issuance of securities backed by subprime mortgages stayed low, while issuance of those backed by prime jumbo mortgages appears to have increased only modestly. Respondents to the October Senior Loan Officer Opinion Survey reported having tightened standards and terms on many types of loans over the past three months. The exchange value of the dollar moved lower over the intermeeting period, and broad stock price indexes increased, on net, despite some recent sharp sell-offs.

Monetary Policy Expectations and Treasury Yields

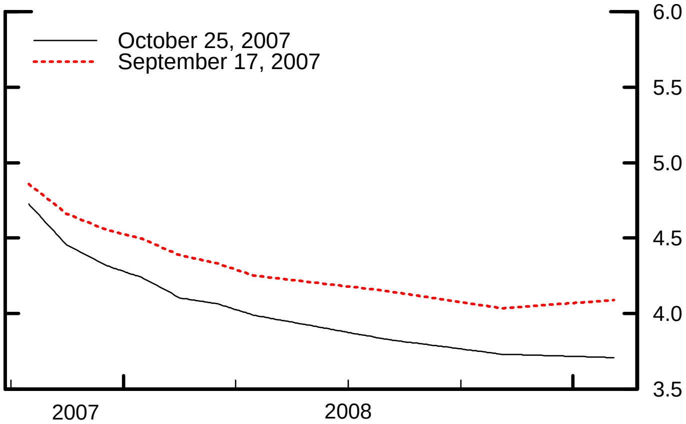
(2) The FOMC's decision at its September 18 meeting to lower the target federal funds rate by 50 basis points to 4¾ percent prompted a decline in market interest rates, as investors apparently had attached substantial odds to a smaller policy move.[1] The subsequent publication of the minutes of the September meeting left little imprint in financial markets. The anticipated path of monetary policy moved down somewhat further, on net, over the remainder of the period in response to mixed economic data releases and some worsening of credit concerns (Chart 1). Market quotes indicate that investors currently assign about 60 percent probability to a 25 basis point easing at the October meeting and nearly 30 percent probability to a larger easing move. Investors appear to expect about a 100 basis point cumulative reduction in the target federal funds rate by the end of 2008—about 35 basis points more than just before the September meeting. With regard to the statement language, respondents to the Desk's survey of primary dealers, conducted between October 18 and October 22, were about equally divided between those expecting the Committee to judge that downside risks to growth are now the predominant policy concern; those anticipating a balanced risk assessment; and those expecting the Committee, as in September, to offer no explicit assessment of risk. Measures of uncertainty around the future funds rate path derived from option prices were little changed, on net, over

---

[1] The effective federal funds rate averaged 4.75 percent over the intermeeting period. During the period, the federal funds rate was more volatile than usual. The intraday standard deviation averaged 22 basis points, considerably higher than the 7 basis point average for the year through the end of July. The funds rate continued to show a tendency to soften over the course of the day, reportedly reflecting in part strong demand for funds from European banks during morning trading. The root mean squared deviation of the daily effective federal funds rate from the target also was higher than its average between the start of the year and the end of July. Over the period, the Desk did not purchase any securities outright. The volume of long-term RPs remained at $12 billion.

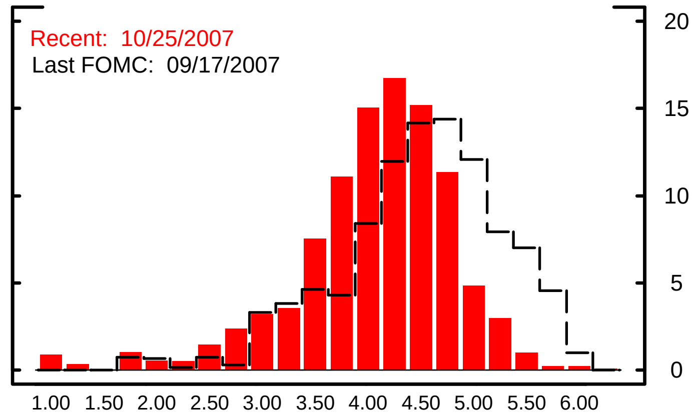
Chart 1
Interest Rate Developments

Expected Federal Funds Rates*



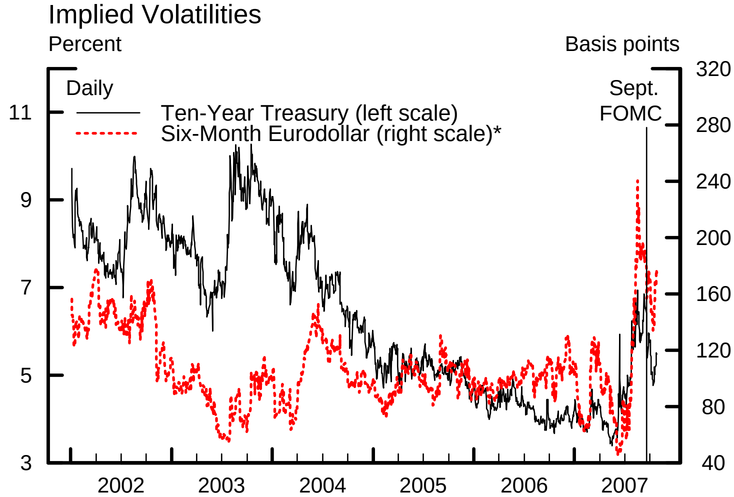
*Estimates from federal funds and Eurodollar futures, with an allowance for term premiums and other adjustments.

Implied Distribution of Federal Funds Rate Six Months Ahead*



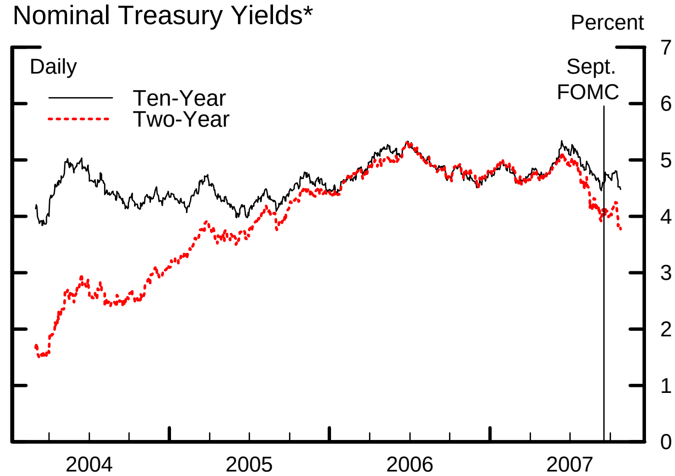
*Derived from options on Eurodollar futures contracts, with term premium and other adjustments to estimate expectations for the federal funds rate.

Implied Volatilities



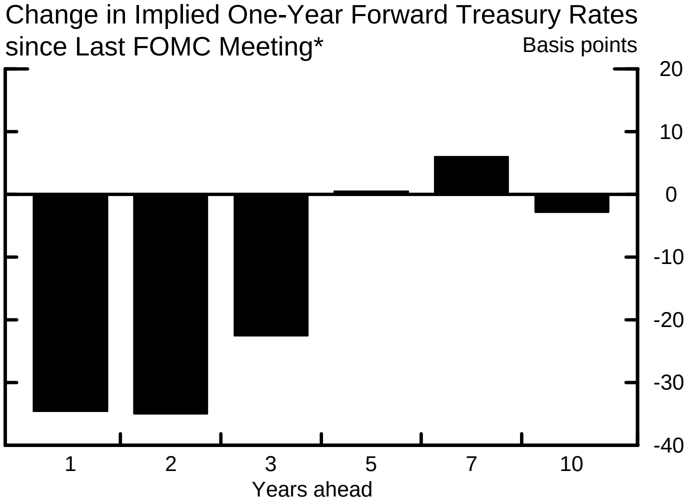
*Width of a 90 percent confidence interval estimated from the term structures for the expected federal funds rate and implied volatility.

Nominal Treasury Yields*



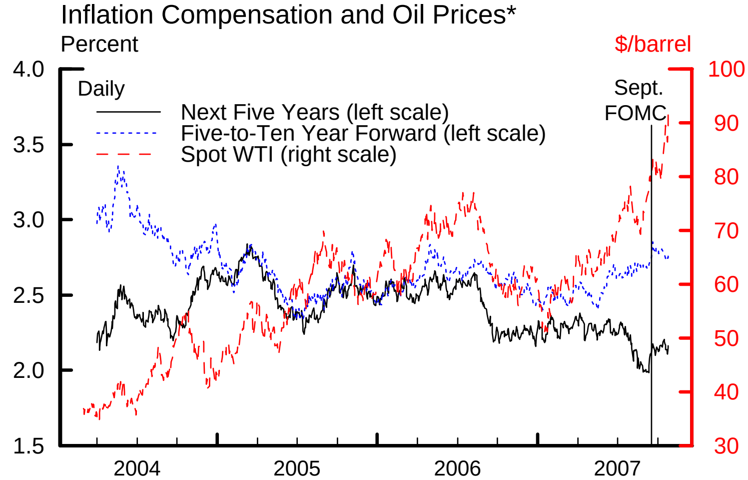
*Par yields from a smoothed nominal off-the-run Treasury yield curve.

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 September 17, 2007. Last daily observations are for October 25, 2007.

the intermeeting period, and the distribution of federal funds rates at six- and twelve-month horizons remained skewed to the downside.

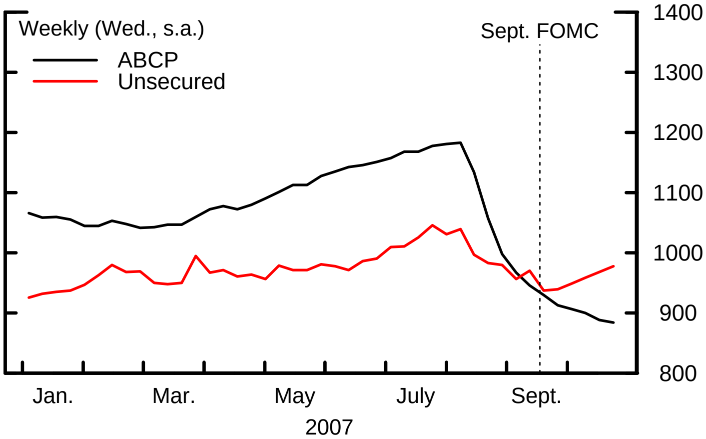
(3) Consistent with the revision in policy expectations, two-year nominal Treasury yields fell 35 basis points, on net, over the intermeeting period, while ten-year nominal yields declined 10 basis points. Despite a marked rise in spot oil prices, TIPS-based inflation compensation was about unchanged. Measures of short- and long-term inflation expectations from the Reuters-Michigan survey ticked down in October.

Money Markets

(4) Conditions in money markets appear to have improved a bit during the intermeeting period, with much of the improvement coming on the heels of the September policy easing. In the United States, spreads on asset-backed commercial paper (ABCP) and on lower-rated unsecured commercial paper declined, on balance, but remained above their July levels. Outstanding ABCP has continued to contract, albeit at a slower pace than in August, whereas unsecured paper has expanded so far in October (Chart 2). A proposal by a consortium of large banks to create a Master Liquidity Enhanced Conduit that would purchase sound assets of some SIV conduits as a means of avoiding asset "fire sales" met with mixed reviews from other market participants. The volume of ABCP issued in Europe appeared to stabilize in early October, but declined again late in the intermeeting period. In Canada, the deadline for final agreement on restructuring outstanding ABCP was extended two more months to mid-December. Conditions in term bank funding markets eased a little over the intermeeting period, although some signs of year-end pressures emerged. (See box "Early Indications of Year-end Pressures.") Spreads of term libor and federal funds rates over comparable overnight index swap rates stepped down after the September FOMC meeting, but they remained wide by historical standards.

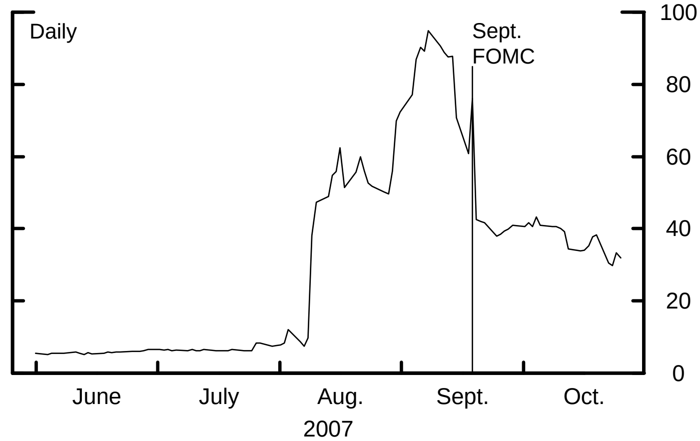
Chart 2
Asset Market Developments

Commercial Paper Outstanding



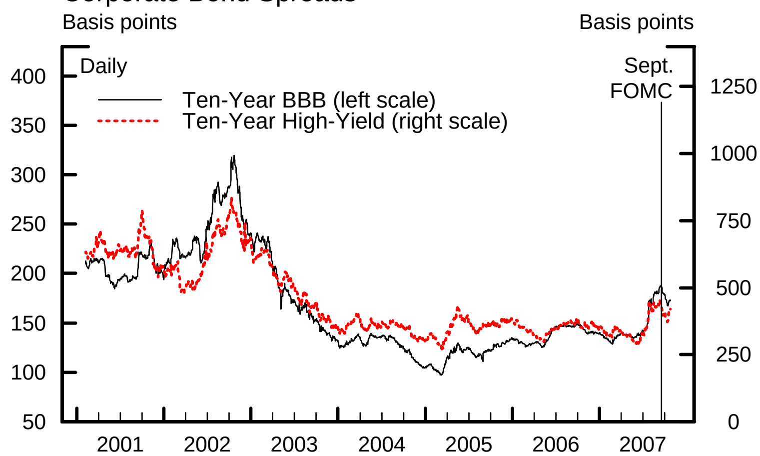
Last weekly observation is for October 24, 2007.

One-month Libor minus OIS rate



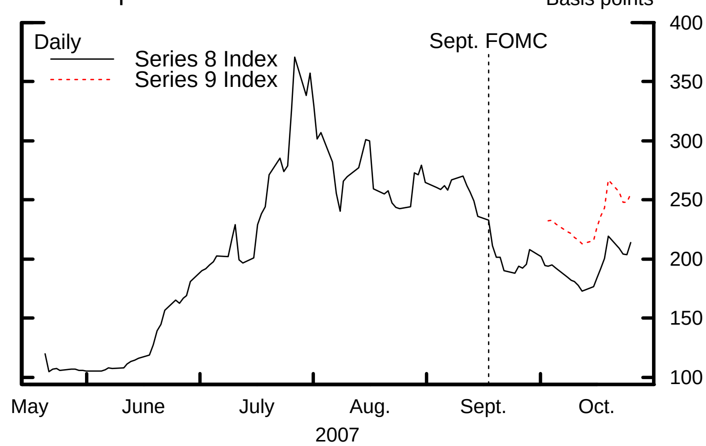
An overnight index swap (OIS) is a fixed/floating interest rate swap, with the floating leg tied to an index of daily overnight rates.

Corporate Bond Spreads*



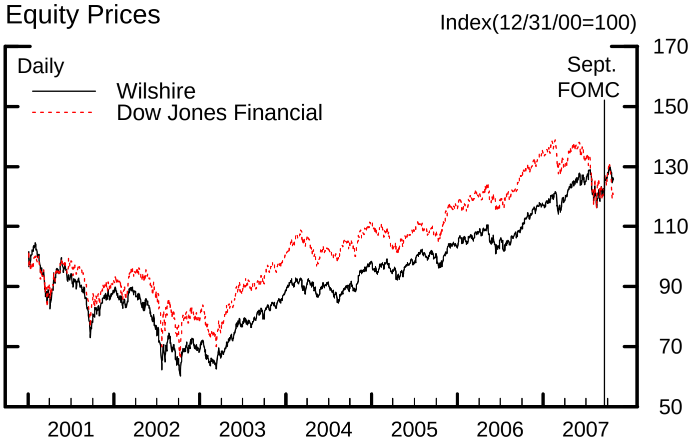
*Measured relative to an estimated off-the-run Treasury yield curve.

LCDX Spreads

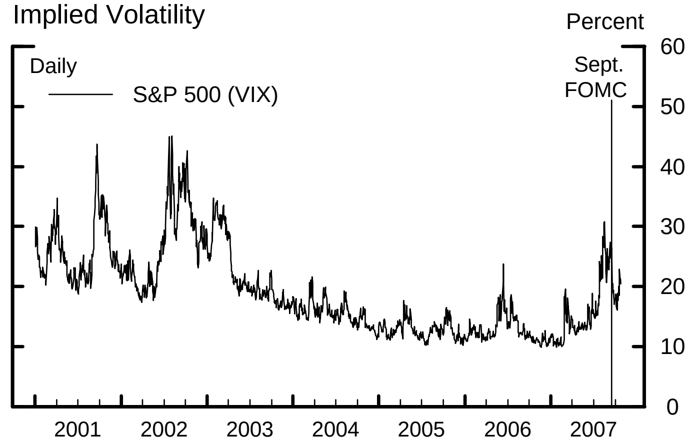


Note. LCDX Series 8 Index started trading May 22, 2007. LCDX Series 9 Index started trading October 3, 2007. The Series 9 Index includes a somewhat riskier set of loans.
Source. Markit.

Equity Prices



Implied Volatility

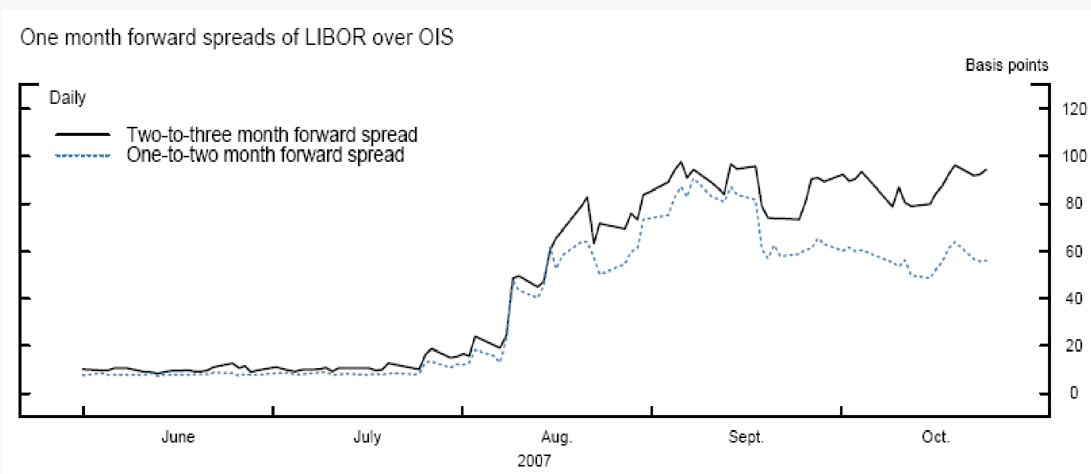


Note. Vertical lines indicate September 17, 2007. Last daily observations are for October 25, 2007.

Funding reportedly was available at somewhat longer maturities than in August and early September. In European interbank money markets, spreads narrowed substantially at the shortest maturities and more modestly at longer maturities. The functioning of the foreign exchange swap market improved somewhat over the period, but has not yet returned to pre-crisis conditions.

Early Indications of Year-end Pressures

In recent years, year-end pressures in money markets have been muted. This year, the extent of year-end pressures is difficult to gauge because diminished liquidity in term funding markets complicates the interpretation of forward rates. Nonetheless, there are some signs of year-end pressures in interbank funding markets. The spread of the one-month forward libor rate ending three months hence over the corresponding one-month forward Overnight Indexed Swap (OIS) rate—a measure that encompasses the year-end—is currently over 90 basis points. In contrast, the adjacent one-month forward spreads covering intervals ending two and four months hence—and thus excluding the year-end—are both around 55 basis points. Moreover, the gap between the one-month forward libor-OIS spreads ending two and three months hence widened around the time that the maturity date on a three-month deposit crossed into the new year. This development could reflect an increased premium that borrowers in the libor market are willing to pay in order to secure funding over year-end. Moreover, the expectation that the Desk will supply generous reserves to avoid a spike in the effective federal funds rate on the last day of the year acts to keep the OIS rate from drifting higher. Market participants in the commercial paper market have expressed some concerns about year-end pressures. However, direct evidence on such pressures in the CP market is scarce because very little lower-grade commercial paper has been issued that matures beyond the end of December.



(5) Flows to prime money market mutual funds, which invest heavily in commercial paper, were robust over the intermeeting period, while government-only funds registered only small net inflows. Functioning in the Treasury bill market has improved some since the September FOMC meeting, but continues to show signs of pressure; bill lending from the SOMA portfolio was heavy at times. Bid-asked spreads in the interdealer market for Treasury bills reportedly remain somewhat elevated, though less so than in August. The thinness of the market has been exacerbated by paydowns of Treasury bills in recent weeks following the receipt of September tax payments. Day-to-day movements in bill yields have been outsized at times, and yields on three-month bills declined about 20 basis points, on net, over the period.

Capital Markets

(6) Conditions in corporate bond markets improved somewhat over the intermeeting period. Spreads on longer-term investment- and speculative-grade bonds narrowed as much as 20 and 60 basis points, respectively, over the first part of the intermeeting period, but they widened more recently to end the period down about 15 basis points, on net. Investment-grade corporate bond issuance was strong in September and early October, and speculative-grade issuance has picked up notably this month. For the first time since early summer, a few LBO-related bonds were issued. Conditions also appear to have improved a bit in the leveraged loan market. An index of credit default swap spreads on leveraged syndicated loans (the LCDX) fell 20 basis points, on balance, and secondary market credit spreads on the most liquid loans reportedly narrowed some. The pipeline of underwritten leveraged loans that have not yet been syndicated, which includes some large LBO deals, remained substantial. However, underwriters were able to sell portions of a few of these loans to institutional investors, including traditional loan investors such as mutual funds,

pension funds, and collateralized loan obligations (CLOs), but also hedge funds and bank proprietary desks. The syndications of these deals were reportedly followed very closely by market participants, partly because they could serve as a template for sales of other large deals that are still in the pipeline. However, new issuance of CLOs, which provided much of the demand for leveraged loans in recent years, remained well below the pace observed during the first two quarters of the year. On net, broad stock price indexes rose 2 to 4 percent despite some sharp sell-offs in the latter part of the intermeeting period. Outside the financial sector, earnings generally exceeded expectations. For financial firms, however, earnings in the third quarter came in below analysts' expectations, reflecting in part substantial write-downs of mortgage-related assets and collateralized debt obligations (CDOs). Options-implied volatility on the S&P 500 declined, on net, over the period.

(7) Markets for nonconforming home mortgages showed little improvement over the intermeeting period: The spread between offer rates on prime jumbo fixed-rate mortgages and comparable conforming loans stayed elevated, and securitization activity for jumbo mortgages appears to have increased modestly. A significant net fraction of respondents to the October Senior Loan Officer Opinion Survey reported that their originations of prime jumbo mortgages declined over the past three months compared with the previous three-month period. Spreads on indexes of credit default swaps on subprime mortgages widened notably, and delinquency rates on variable-rate subprime mortgages posted a further increase in August. Issuance of subprime-mortgage-backed securities remained weak through mid-October. Considerable fractions of respondents to the October Senior Loan Officer Opinion Survey indicated that they had tightened lending standards on prime as well as nontraditional and subprime residential mortgage loans over the past three months. In contrast, available information suggests that the origination of conforming mortgages has been little affected by recent developments.

Foreign Developments

(8) As in the United States, conditions in financial markets abroad improved noticeably following the FOMC's decision to cut the target federal funds rate, but a number of foreign markets remain unsettled. The European Central Bank continued to provide substantial amounts of liquidity during the intermeeting period. The Bank of England also added liquidity and allowed banks greater flexibility in meeting their target balances. Equity prices in major industrial countries gained 2 to 5 percent over the period, and their implied volatilities declined (Chart 3). Yields on long-term government securities recorded small net changes. Stock prices in emerging market economies, which generally had been less affected by the recent financial crisis, performed even better in most cases, and EMBI+ spreads for many key emerging market economies narrowed.

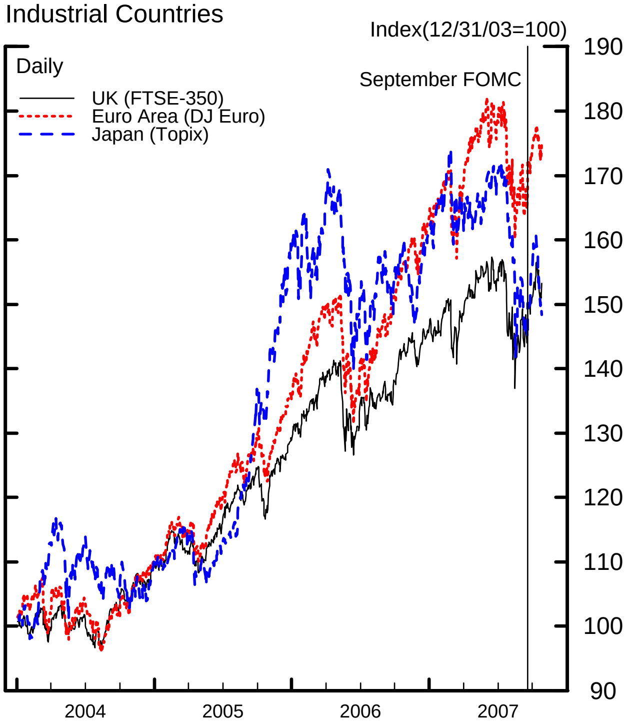
(9) The foreign exchange value of the dollar recorded a decline of more than 3½ percent over the intermeeting period against a trade-weighted index of major foreign currencies, with a wide range of moves against individual currencies.[2] The dollar dropped almost 5½ percent versus the Canadian dollar in response to indications of continued robust Canadian economic performance and higher prices for oil and other commodities. The U.S. dollar fell below parity with the Canadian currency for the first time in more than thirty years. The dollar declined 3 percent on balance against the euro and reached a record low during the period. The dollar moved down somewhat less versus the yen, which appeared to be weakened by the re-establishment of yen-funded carry trade positions. Both the Australian dollar and New Zealand dollar, currencies that are often on the other side of carry trades, appreciated substantially over the period. The dollar also declined about 1¾ percent against an index of currencies of our other important trading partners.

2

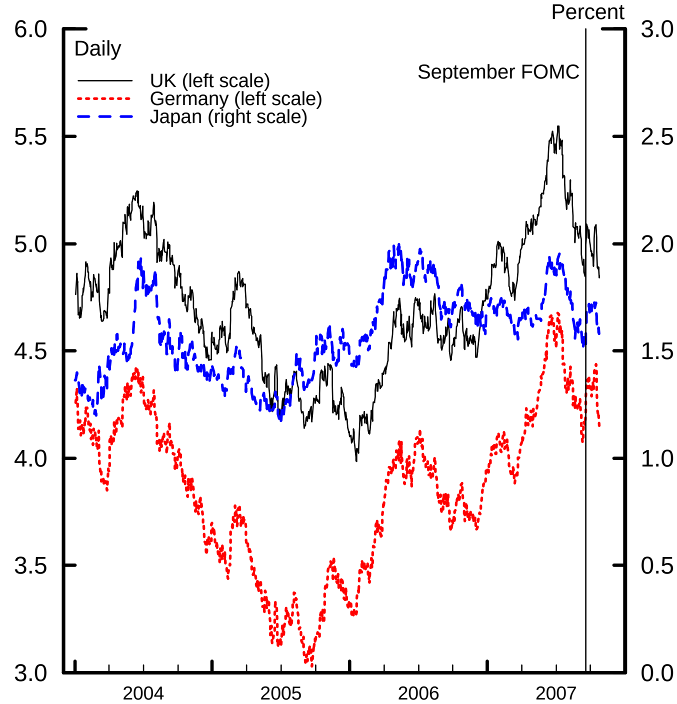
.

Chart 3
International Financial Indicators

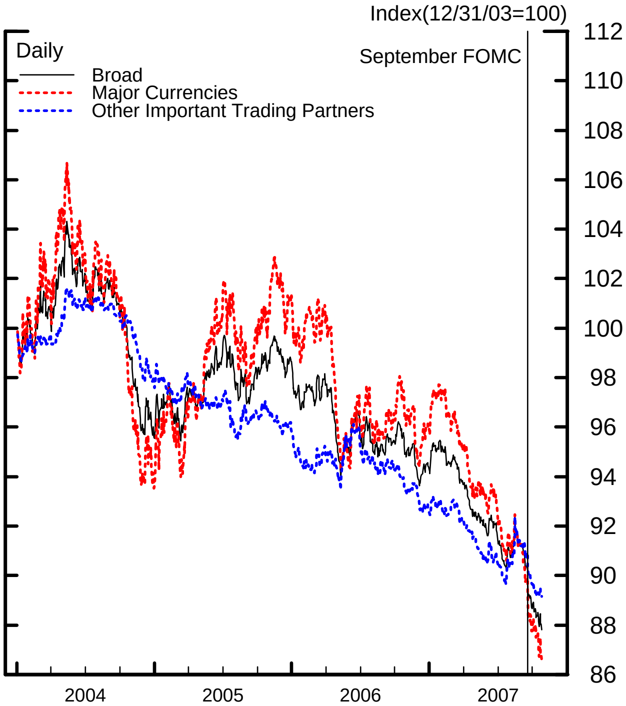
Stock Price Indexes
Industrial Countries



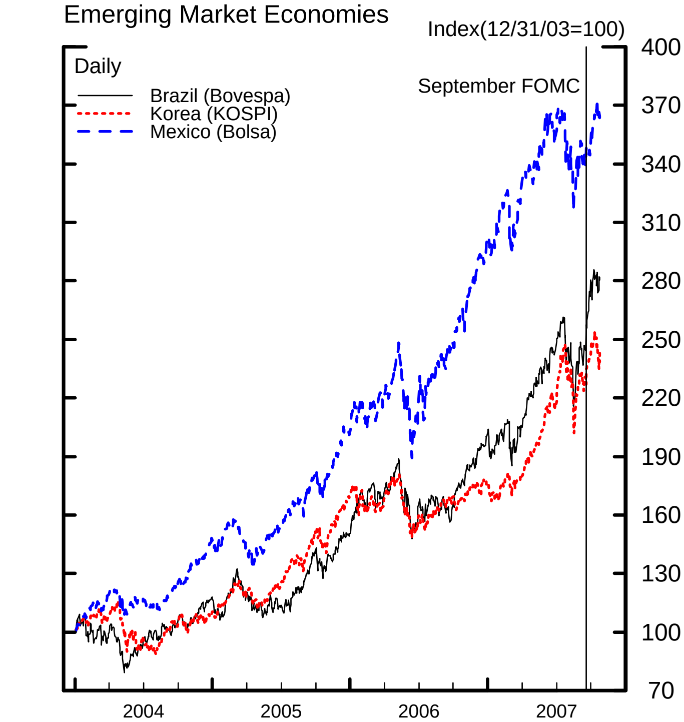
Ten-Year Government Bond Yields (Nominal)



Nominal Trade-Weighted Dollar Indexes



Stock Price Indexes
Emerging Market Economies



Note: Vertical lines indicate September 18, 2007. Last daily observations are for October 25, 2007.

Debt and Money

(10) Domestic nonfinancial sector debt is estimated to have increased at an annual rate of 7½ percent in the third quarter, a bit faster than in the second quarter, as slower borrowing by households and nonfinancial businesses was more than offset by faster expansion of federal government debt (Chart 4). Notable net fractions of banks reported in the October Senior Loan Officer Opinion Survey that they had tightened lending terms on C&I loans over the previous three months. (See box "Recent Developments at Commercial Banks.") Even so, business debt growth remained strong, reflecting robust issuance of investment-grade bonds and the continued surge in C&I lending. The growth of C&I loans was partly the result of LBO-related financings that underwriters could not syndicate to institutional investors ending up on banks' books. Household mortgage borrowing is estimated to have decelerated again in the third quarter, reflecting further declines in home price appreciation and home sales and tighter credit conditions for nonconforming mortgages. In contrast, consumer credit continued to expand at a moderate pace through August.

(11) M2 advanced at a 5½ percent annual rate in September and October, a significant deceleration from the rapid pace experienced in August in the midst of the financial market tumult. After surging in August, liquid deposits contracted in September and seem to be growing only modestly in October. Retail money market funds expanded rapidly again last month, and available data for October point to continued strong growth. Small time deposits grew briskly in both months, apparently owing in part to relatively attractive rates offered by some institutions on such deposits.

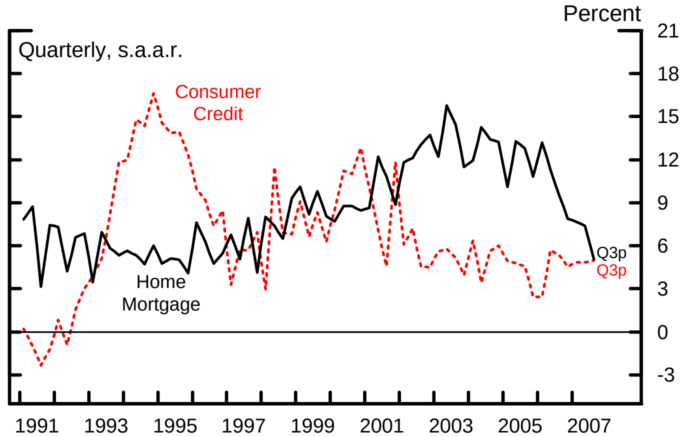
Chart 4
Debt and Money

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	8.8
	Q4	8.4	11.4	8.0
2007				
	Q1	7.9	8.9	7.0
	Q2	7.1	10.6	7.1
	Q3p	7.4	9.2	5.2

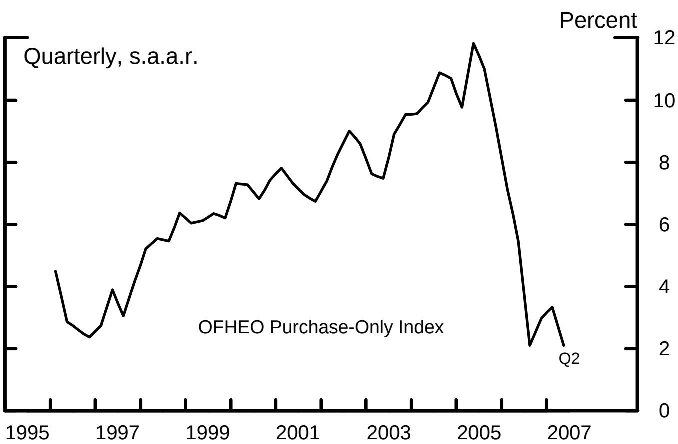
p Projected.

Growth of Debt of Household Sector

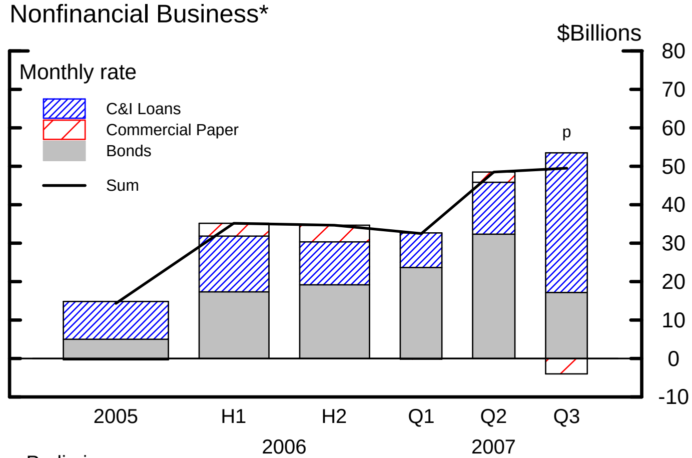


p Projected.

Growth of House Prices



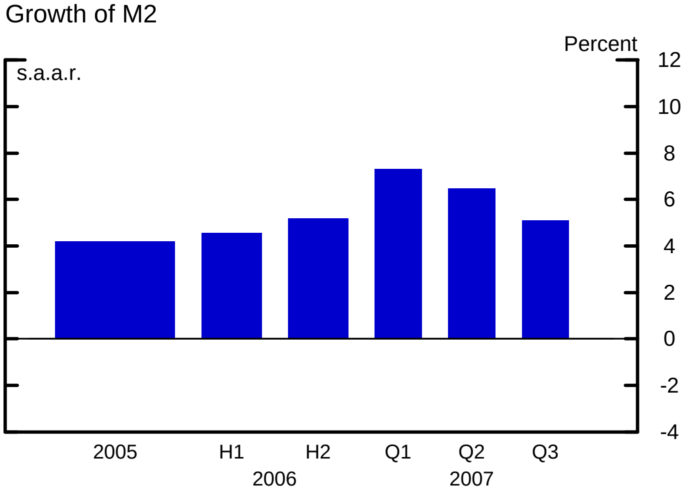
Changes in Selected Components of Debt of Nonfinancial Business*



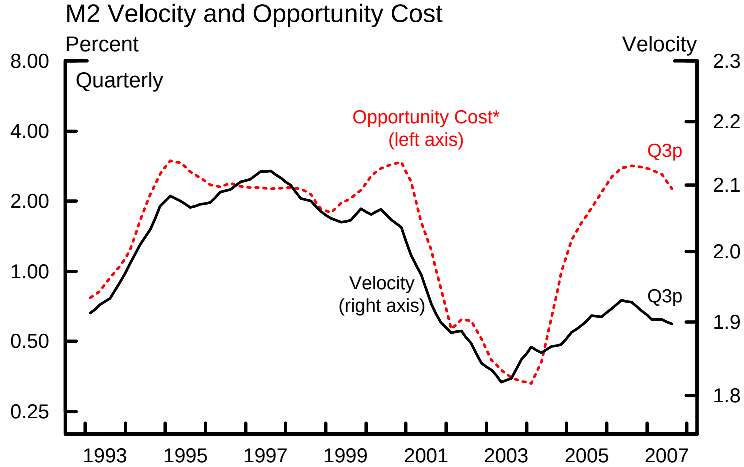
p Preliminary.

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

Growth of M2



M2 Velocity and Opportunity Cost



*Two-quarter moving average.

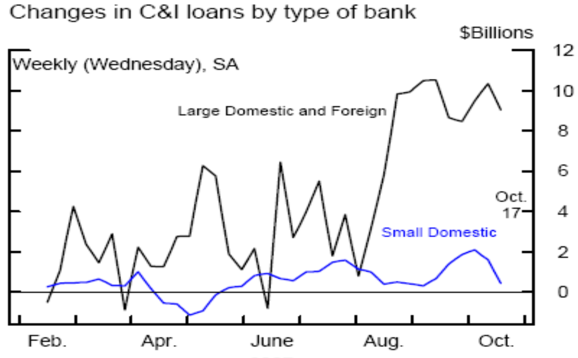
Recent Developments in Commercial Banking

Commercial bank credit has grown at a 13 percent annual rate since the end of July. Most of the advance has been accounted for by a surge in C&I loans (left hand chart) and loans to nonbank financial institutions extended by large domestic commercial banks and U.S. branches and agencies of foreign banks. The increase in these banks' C&I loans has been caused partly by the retention of underwritten LBO-related loans that these institutions have not been able to syndicate. The jump in loans to financial institutions occurred in August and early September and was consistent with reports that some banks provided short-term financing to commercial paper conduits and to other nonbank financial institutions. In addition, steady expansion of C&I loans at smaller banks suggests appreciable underlying growth in the demand for bank-intermediated business credit that is unrelated to the dislocations in financial markets.

Banks have funded the expansion of their balance sheets largely with managed liabilities, such large time deposits and nondeposit sources, which include Federal Home Loan Bank advances. Perhaps in an effort to conserve balance sheet capacity, large banks shed U.S. housing finance agencies' mortgage pass-through securities. The October Senior Loan Officer Opinion Survey indicated that, on net, banks have tightened standards and terms for most categories of loans to businesses and households over the past three months, probably reflecting in part a desire to manage their balance sheet capacity as well as their credit risk.

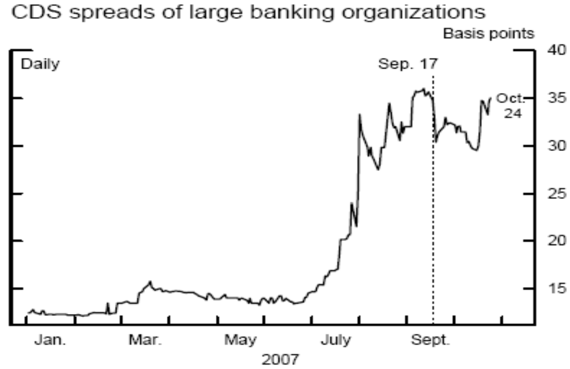
Profits declined at many large banking companies last quarter, and results often came in below analysts' estimates. Many of the firms attributed their disappointing earnings largely to deteriorating credit quality, particularly in the home mortgage sector, while several of the largest firms also reported significant write-downs on leveraged syndicated loans and structured financial products. Partly as a result, CDS spreads for large banking organizations remained elevated over the intermeeting period (right hand chart).

Changes in C&I loans by type of bank



Note. Four-week moving averages of weekly changes.

CDS spreads of large banking organizations



Note. Median spread at 25 large banking organizations.

Medium-Term Strategies

(12) To shed additional light on the economic outlook and possible monetary policy strategies over the medium term, the staff has extended the Greenbook forecast beyond 2009 using the FRB/US model with adjustments to ensure consistency with the staff's assessment of longer-run trends.[3] This extended forecast embeds several key assumptions for the period beyond 2009: Trend multifactor productivity grows 1 percent per year; energy prices are approximately flat in real terms; the real value of the dollar depreciates 1¼ percent per year; and the unified federal budget deficit edges up to 2½ percent of GDP by 2012. In the extension, the unemployment rate beyond 2009 stays close to the staff's assumed long-run NAIRU of 4¾ percent while core PCE inflation remains fairly stable at about 2 percent—a rate roughly consistent with recent survey measures of long-run inflation expectations. The real funds rate path consistent with these outcomes declines from slightly above 2¾ percent in 2009 to about 2¼ percent on average in 2011 and 2012.

(13) As shown in Chart 5, the Greenbook-consistent measure of short-run r^*—the value that would close the output gap over the next twelve quarters—has shifted up 10 basis points and now stands at 2.9 percent, about the same as the actual real federal funds rate. The three model-based estimates of short-run r^* range from 1.6 to 2.6 percent; on average, these estimates are a bit lower than in the previous Bluebook.[4] The model-based and TIPS-based estimates of medium-run r^* range from 1.9 to 2.4 percent and are little changed from the previous Bluebook.

(14) Chart 6 depicts optimal control simulations of the FRB/US model using the staff's extension of the Greenbook forecast beyond 2009. In these simulations,

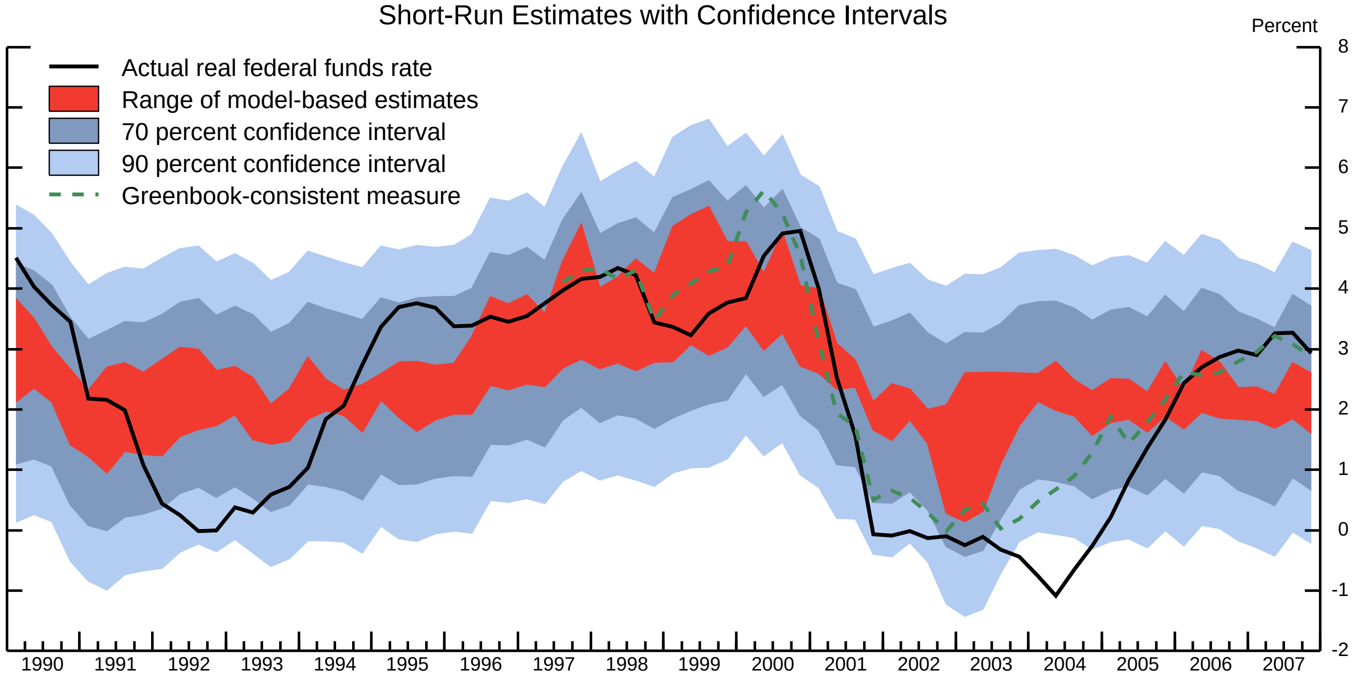
---

[3] The characteristics of the extension are described in the memo to the Committee by Michael McCracken, "The Extended Greenbook Forecast," October 25, 2007.

[4] In contrast with past practice, starting with this Bluebook all model-based estimates of r^* take as given the staff's estimates of real activity and other economic variables in the current quarter.

Chart 5
Equilibrium Real Federal Funds Rate

Short-Run Estimates with Confidence Intervals



Short-Run and Medium-Run Measures

	Current Estimate	*Previous Bluebook*
Short-Run Measures		
Single-equation model	2.6	*2.5*
Small structural model	1.6	*1.8*
Large model (FRB/US)	2.3	*2.6*
Confidence intervals for three model-based estimates		
70 percent confidence interval	0.7 - 3.7	
90 percent confidence interval	-0.2 - 4.6	
Greenbook-consistent measure	2.9	*2.8*
Medium-Run Measures		
Single-equation model	2.4	*2.3*
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 - 3.9	
TIPS-based factor model	2.1	*2.1*
Memo		
Actual real federal funds rate	2.9	*3.4*

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

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 federal funds rate.[5] 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 from about 5¼ percent in the third quarter to roughly 5½ percent by the end of 2008 and then declines gradually to a little under 4 percent by the end of 2012. With an inflation goal of 2 percent (the right-hand set of charts), the optimal funds rate gradually falls to a bit under 4½ percent by the end of 2012. The prescription for the trajectory of the funds rate with a 1½ percent inflation goal is a little higher than that shown in the September Bluebook, reflecting the somewhat stronger assessment by the staff of the outlook for aggregate demand. Under either inflation goal, the paths of the unemployment rate and the inflation rate over the next few years are a bit lower than those shown in the previous Bluebook, consistent with the revisions to the Greenbook forecast.

(15) As shown in Chart 7, the outcome-based monetary policy rule (the left panel) prescribes a funds rate path that declines to around 4½ percent by the middle of next year and then rises to about 5 percent near the end of the decade before falling back. This path is about ¼ percentage point on average higher than in the September Bluebook, reflecting the upward revision to the projection for real growth, and is somewhat above the funds rate path anticipated by financial market participants (the right panel). Stochastic simulations of the FRB/US model indicate a 70 percent probability that the prescriptions of the outcome-based rule will fall in a range of

---

[5] In conducting these simulations, policymakers and participants in financial markets are assumed to understand fully the forces shaping the economic outlook (as summarized by the extended Greenbook projection), whereas households and firms form their expectations using more limited information. In this Bluebook, the current quarter is the first period of the simulation for which a value for the nominal funds rate different from that embedded in the extended Greenbook projection is permitted.

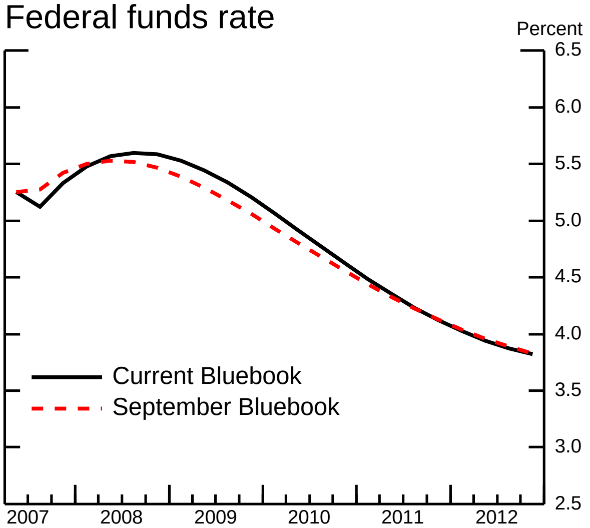
Chart 6

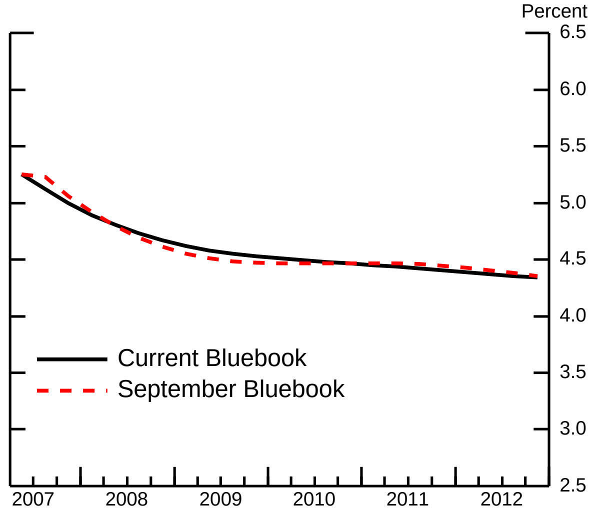
Optimal Policy Under Alternative Inflation Goals

1½ Percent Inflation Goal

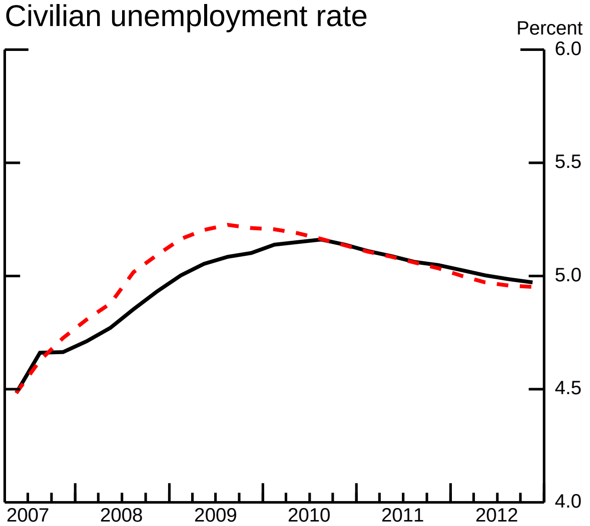
2 Percent Inflation Goal

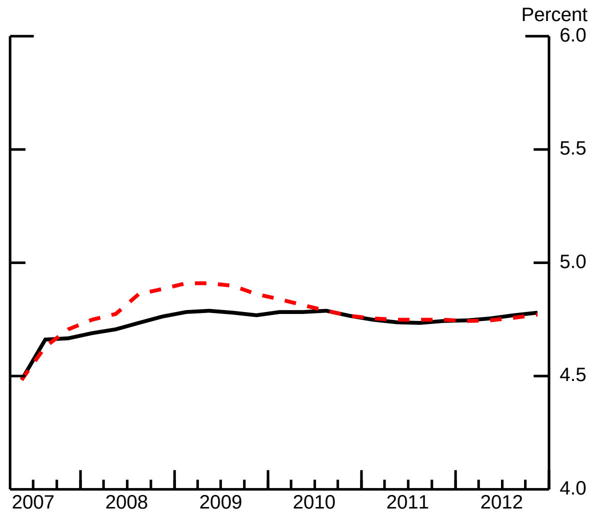
Federal funds rate





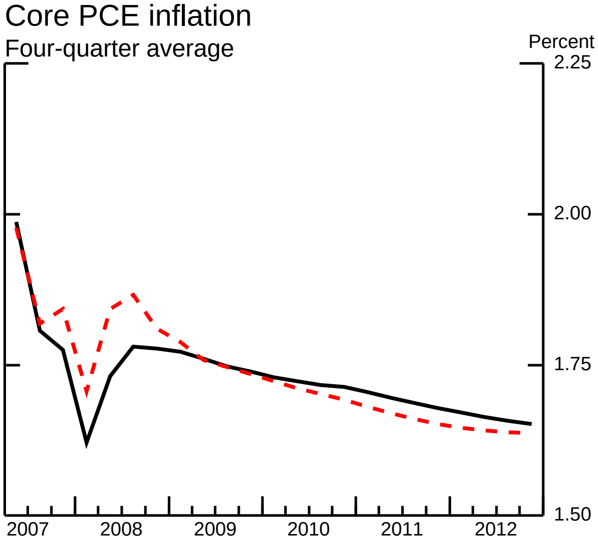
Civilian unemployment rate





Core PCE inflation

Four-quarter average



Four-quarter average

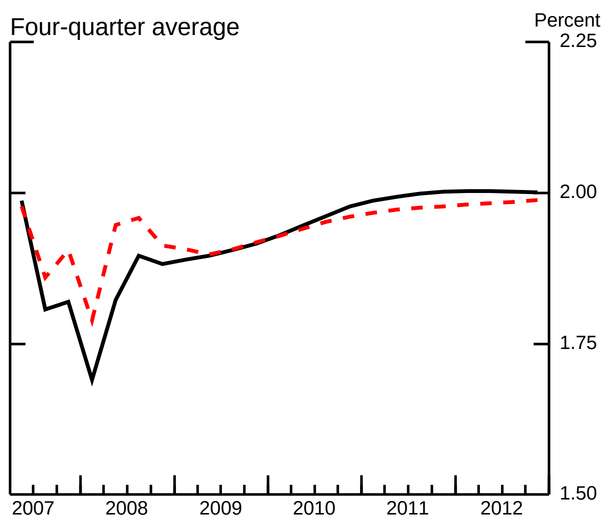
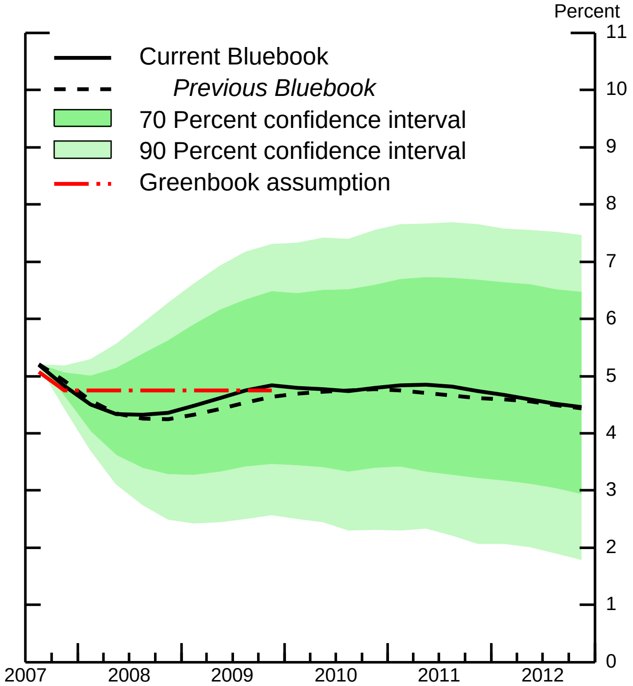


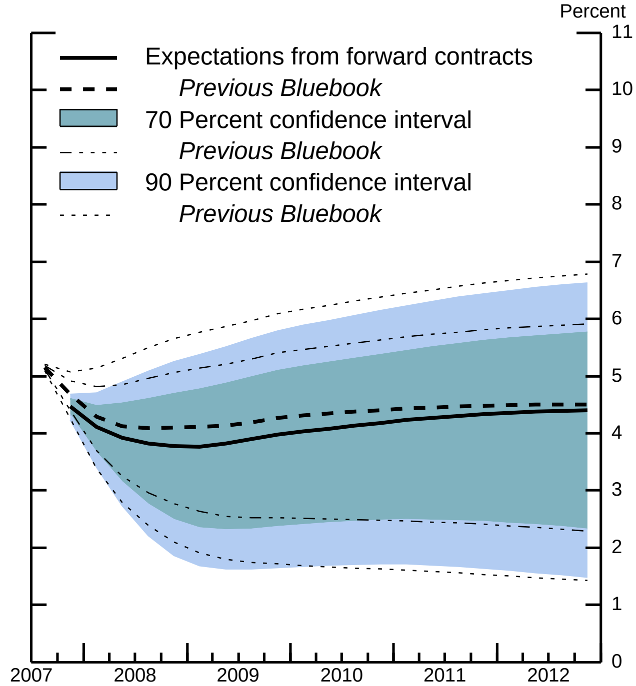
Chart 7

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	
	2007Q4	2008Q1	2007Q4	2008Q1
Taylor (1993) rule	4.3	4.0	4.0	3.7
Previous Bluebook	*4.2*	*4.0*	*4.0*	*3.7*
Taylor (1999) rule	4.5	4.1	4.3	3.9
Previous Bluebook	*4.3*	*3.9*	*4.1*	*3.7*
Taylor (1999) rule with higher r*	5.3	4.9	5.0	4.6
Previous Bluebook	*5.1*	*4.7*	*4.8*	*4.4*
First-difference rule	5.0	5.0	4.7	4.5
Previous Bluebook	*5.1*	*5.0*	*4.6*	*4.3*

Memo

	2007Q4	2008Q1
Estimated outcome-based rule	4.8	4.5
Estimated forecast-based rule	4.8	4.5
Greenbook assumption	4.8	4.8
Market expectations	4.5	4.1

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

3½ to 5¾ percent at the end of next year.[6] Interest rate caps suggest a broadly similar degree of uncertainty in financial markets regarding the prospective path of policy over the next several years, with a 70 percent confidence interval of about 2½ to 4¾ percent at the end of 2008.

(16) For an inflation goal of either 1½ percent or 2 percent, the near-term prescriptions of simple policy rules generally point to additional policy easing, although the Taylor (1999) rule with a higher r^* and the first difference rule with an inflation goal of 1½ percent both suggest a slightly tighter policy stance. The prescriptions of the Taylor (1993) rule are virtually unchanged from those of the previous Bluebook, reflecting the offsetting influences of a slightly higher output gap and slightly lower core inflation. Because the Taylor (1999) rule responds more aggressively to output gaps, the prescriptions from this rule—and the variant with a higher intercept—have been revised up more noticeably, about 15 basis points. The first-difference rule responds to three-quarter-ahead projections of four-quarter core inflation and GDP growth relative to potential; the prescriptions from this rule are little changed for an inflation goal of 1½ percent and are up a notch for an inflation goal of 2 percent.

---

[6] The width of these confidence intervals is determined by the past two decades of estimated model residuals.

Economic Outlook through 2009

(17) Reflecting incoming economic data that were, on balance, stronger than expected, as well as higher stock prices, lower corporate bond rates, and a weaker foreign exchange value of the dollar, the staff outlook for growth in aggregate demand has been marked up a bit over the near term but is little changed farther ahead. The staff has retained its assumption that the target federal funds rate will be held constant at 4¾ percent during 2008 and 2009. As investors instead anticipate some policy easing at this and subsequent meetings, longer-term Treasury yields are expected to firm going forward. As usual, stock prices are assumed to rise at the 6½ percent annual rate required to equate the risk-adjusted return on equities to that on Treasury securities. The real foreign exchange value of the dollar is projected to depreciate about 1¼ percent per year. Consistent with futures market quotes, spot oil prices are projected to decline gradually but from a substantially higher level than in the September forecast. Against this backdrop, the pace of economic expansion is projected to slow from 3¼ percent in the third quarter to about 1½ percent in the current quarter and the first quarter of 2008, as the housing correction deepens and the recent strength in consumer and business spending moderates. Beyond the first quarter of 2008, the staff's forecast is little changed from the September Greenbook: Output is projected to expand somewhat more slowly than potential over the remainder of 2008, and at about the same rate as potential in 2009, when residential investment is anticipated to begin growing modestly. The unemployment rate remains essentially equal to the staff's 4¾ percent estimate of the NAIRU through the end of the forecast period. Spurred by the recent surge in oil prices, total PCE inflation climbs to nearly 2¾ percent in the fourth quarter; it then drops to 2¼ percent in the first quarter of next year and to about 1¾ percent for the rest of the forecast period as oil prices trend down. Core PCE inflation rises from 1½ percent

over the past two quarters to 2 percent in the current quarter and subsequently remains just under that rate through 2009.

Short-Run Policy Alternatives

(18) This Bluebook presents three policy alternatives for the Committee's consideration, summarized in Table 1. Alternative A lowers the target federal funds rate 25 basis points to 4½ percent, while Alternatives B and C leave the target rate unchanged at 4¾ percent. In the rationale paragraph, all three alternatives recognize that economic growth was solid in the third quarter. (The advance report for third-quarter GDP growth will be published on October 31, the second day of the FOMC meeting. The staff and most private sector forecasters expect that output grew significantly faster than potential last quarter. If third-quarter growth turns out to be considerably above or below expectations, "strong" or "moderate" perhaps could be substituted for "solid.") All three alternatives also acknowledge that strains in financial markets have eased somewhat on balance and suggest that the Committee expects some slowing of the pace of economic expansion in the near term. Alternative A alludes to the possibility that the tightening of credit conditions since earlier this year could restrain economic growth, and Alternative B makes that point more directly. Because recent inflation readings have continued to be relatively benign but have not shown signs of further moderation, Alternatives A and B maintain the language regarding inflation used in the September statement. In contrast, Alternative C states that the high level of resource utilization and recent increases in energy prices may put renewed upward pressures on both overall and core inflation. While considerable uncertainty about the economic outlook remains, the three alternatives assume that the Committee is prepared to resume the practice of assessing the balance of risks to growth and inflation. Alternatives A and C characterize the downside risks to growth as roughly balancing the upside risks to

Table 1: Alternative Language for the October 2007 FOMC Announcement

	September FOMC	Alternative A	Alternative B	Alternative C
Policy Decision	1. The Federal Open Market Committee decided today to lower its target for the federal funds rate 50 basis points to 4-3/4 percent.	The Federal Open Market Committee decided today to lower its target for the federal funds rate 25 basis points to 4-1/2 percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 4-3/4 percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 4-3/4 percent.
Rationale	2. 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 solid in the third quarter, and strains in financial markets have eased somewhat on balance. However, the pace of economic expansion will likely slow somewhat in the near term, partly reflecting the intensification of the housing correction. Today's action, combined with the policy action taken in September, should help forestall some of the adverse effects on the broader economy that might otherwise arise from the disruptions in financial markets and promote moderate growth over time.	Economic growth was solid in the third quarter, and strains in financial markets have eased somewhat on balance. The pace of economic expansion will likely slow somewhat in the near term, partly reflecting the intensification of the housing correction. But, to date, other sectors of the economy have proven resilient and the global economy remains strong. The Committee anticipates that the economic expansion will return to a moderate pace over time, but sees continuing risks to growth, notably the potential impact of the tightening of credit conditions for some households and businesses.	Economic growth was solid in the third quarter despite an intensification of the housing correction. Strains in financial markets have eased somewhat on balance, reducing the downside risks to growth. Though incoming indicators point to some near-term slowing in the pace of economic expansion, the recent easing of monetary policy should help promote moderate growth over time.
	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, but the high level of resource utilization and recent increases in energy prices may put renewed upward pressures on overall and core inflation.
Assessment of Risk	4. Developments in financial markets since the Committee's last regular meeting have increased the uncertainty surrounding the economic outlook. The Committee will continue to assess the effects of these and other developments on economic prospects and will act as needed to foster price stability and sustainable economic growth.	The Committee judges that the upside risks to inflation roughly balance the downside risks to growth. The Committee will continue to assess the effects of financial and other developments on economic prospects and will act as needed to foster price stability and sustainable economic growth.	On balance, the Committee views downside risks to growth as the greater policy concern. The Committee will continue to assess the effects of financial and other developments on economic prospects and will act as needed to foster price stability and sustainable economic growth.	The Committee judges that the upside risks to inflation roughly balance the downside risks to growth. Future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information.

inflation, while Alternative B identifies the downside risks to growth as the greatest policy concern. As usual, the Committee could combine language from different alternatives.

(19) If the Committee judges that the current stance of policy is likely to be consistent with sustainable growth and an acceptable trajectory for inflation over time but sees appreciable downside risks to growth, it may wish to choose **Alternative B**. The economy seems to have expanded at a brisk pace in the third quarter, boosted primarily by personal consumption and business expenditures, suggesting considerable underlying strength of spending prior to the recent financial turbulence. In addition, strains in financial markets have eased somewhat on balance, partly allaying concerns about a severe credit crunch. The strong performance of the global economy could also support U.S. economic growth. And while the housing data received during the intermeeting period were not encouraging, they also were not greatly surprising, at least from the perspective of the September Greenbook forecast. The real federal funds rate is now equal to its Greenbook-consistent equilibrium value and just a bit above the range of model-based estimates (Chart 5), suggesting that the current policy stance is likely to keep output in the vicinity of its potential. In addition, the present target for the federal funds rate remains close to near-term policy prescriptions derived from optimal policy simulations with a 2 percent inflation target (Chart 6) and is consistent with a number of policy rules, even assuming a 1½ percent inflation objective (Chart 7). However, the functioning of some financial markets is still quite far from normal, credit conditions have tightened considerably for some households and businesses since early in the year, and there is some possibility that recent improvements in market functioning could be reversed. The Committee may be sufficiently concerned about a possible further deterioration in financial conditions or about potential spillovers from the housing sector to believe that the risks to its growth outlook are significantly skewed to the downside. Moreover, it may see the

possibility that a weakening of the economy could have a negative impact on financial markets, leading to further tightening of credit conditions. At the same time, the Committee may believe that the inflation outlook is acceptable, although with some upside risks. Inflation data have been fairly benign in recent months, suggesting that the underlying rate of inflation is relatively moderate, and the Committee may be optimistic that recognition of its commitment to price stability will help gradually reduce inflation over time. But the high level of resource utilization, the recent increases in energy and other commodity prices, and the decline in the foreign exchange value of the dollar may be viewed as presenting upside risks to inflation. Nonetheless, the Committee may believe that the downside risks to growth are the greater policy concern.

(20) Given that the economy likely expanded at a pace noticeably above that of potential in the third quarter, the draft statement for Alternative B describes recent growth as "solid." It also takes note of the fact that strains in financial markets have eased somewhat on balance. While recognizing that the ongoing housing deterioration will likely weigh substantially on economic performance over the next few quarters, the statement points out that other sectors of the economy have proven resilient so far and that the global economy remains strong. The assessment of risk paragraph would note that downside risks to growth are a greater policy concern to the Committee than inflation risks and then repeats the second sentence of the risk assessment from the September statement.

(21) Market participants have priced in more than 25 basis points of easing at this meeting. Thus, a decision to leave the federal funds rate unchanged is likely to produce a considerable backup in shorter-term interest rates. However, with the statement pointing to downside risks to growth and thus suggesting that further policy easing could be forthcoming, short-term rates are not likely to move up by the full amount of the policy surprise. The anticipation of future policy easing will likely

restrain the increase in longer-term interest rates even more. With relative yields probably adjusting in favor of dollar assets, the recent tendency for the foreign exchange value of the dollar to depreciate could be reduced. Equity prices would likely decline, given the policy surprise and the assessment that risks to growth are tilted to the downside.

(22) If the Committee has a modal outlook similar to the Greenbook projection that growth will return to potential in a few quarters and sees the risks around that forecast as relatively balanced, it might be inclined to choose **Alternative C**. Under this alternative, there would be no change in the target federal funds rate, and the statement would indicate that downside risks to growth are balanced by upside risks to inflation. Members might view the partial easing of the strains in financial markets since mid-summer as substantially reducing the likelihood that instability in the financial system will undermine economic performance, especially since there do not appear to have been significant spillovers to consumer and business spending as yet. Indeed, the Committee may see the improved financial market conditions and the outlook for growth near potential in 2008 and 2009 as close to the situation it envisioned after the September policy easing. Even if the Committee believes that ongoing financial strains pose downside risks to growth, it may also believe that those risks are partly offset by other factors. For example, Committee members might be more optimistic than the staff regarding the persistence of the recent robust growth in business fixed investment and household consumption, along the lines of the "Greater Momentum in Aggregate Demand" alternative scenario in the Greenbook. On the inflation side, the Committee may have become more worried about the potential for renewed price pressures. While inflation readings have remained relatively benign, the Committee might view the increase in energy prices over the past few weeks as likely to push up overall inflation in the near term, with potential adverse effects on inflation expectations. Indeed, the Committee may be concerned

by the increase since earlier this year of around 25 basis points in forward inflation compensation implied by TIPS securities. The weakening of the dollar may also be seen as posing a greater inflationary threat than foreseen by the staff. Some members may also be worried that current levels of resource utilization are not sustainable and pose an upside risk to inflation. Others may see particularly high costs to an increase in inflation from its recent readings and, partly for that reason, may have little expectation that a near-term easing of policy would be warranted. Under these circumstances, the Committee might judge that the current stance of policy is appropriate and believe that the downside risks to growth are balanced by upside risks to inflation.

(23) The proposed statement for Alternative C indicates that economic growth was solid in the third quarter despite the ongoing housing correction. It then notes the easing in financial market strains and associates that development with a reduction in the downside risks to growth. The statement proceeds to affirm the expectation that the pace of economic expansion will slow in the near term but also that the substantial easing of monetary policy in September should help promote moderate growth over time. The statement makes no explicit mention of potential risks induced by tighter credit conditions. The wording on inflation begins by noting the improvement in inflation readings this year, as in the September FOMC statement, but then cites the risk that the high level of resource utilization and recent increases in energy prices may put renewed upward pressures on overall and core inflation. The Committee would indicate that the downside risks to growth are balanced by the upside risks to inflation and would reintroduce the indication that future policy adjustments will depend on the outlook for both inflation and economic growth. Market participants would be quite surprised by the combination of no policy action at this meeting and the statement proposed for Alternative C. They would likely conclude that the Committee has no inclination to lower rates in the near term.

Given that high odds are placed on policy easing at this and coming meetings, both short- and long-term interest rates would likely increase considerably following the announcement. In response to the jump in interest rates, the foreign exchange value of the dollar might appreciate somewhat. Although investors' views about economic prospects might be buoyed to some extent by an inference that the Federal Reserve anticipated sustainable growth at the current level of the federal funds rate, it seems more likely that market participants would mark down their expectations for economic growth. Consequently, concerns about credit risk could increase, and equity prices could decline significantly.

(24) While strains in financial markets have eased in recent weeks, functioning in some markets remains impaired. Moreover, banks appear to have responded to the problems in funding markets, concerns about balance sheet capacity, and worries about the economic outlook by tightening terms and standards across a broad range of credit products. The Committee might see these developments as reducing its modal outlook for aggregate demand relative to its expectations after its September action. Alternatively, members might see the failure of credit market conditions to improve more significantly and incoming evidence of a steepening contraction in the housing sector as indicating that the downside risks to overall economic performance remain unacceptably large; the potential implications of such factors are illustrated in the "Greater Fallout from Financial Stress" alternative scenario in the Greenbook. Either view might incline the Committee to choose **Alternative A**, which lowers the target federal funds rate 25 basis points. The Committee might see easing policy another notch as an appropriate risk-management tactic, given the potential for particularly adverse outcomes, especially since a 25 basis point cut in the target federal funds rate would still be consistent with several policy rules (Chart 7). Given that inflation data have continued to be favorable, the Committee may also believe that a policy easing would be consistent with its price stability objectives, especially if

members believe that, if necessary, they could act quickly in the future to reverse some or all of the easing implemented since September.

(25) The draft statement for Alternative A, like those for Alternatives B and C, begins by noting the solid economic performance in the third quarter and the easing of strains in financial markets. As the other alternatives, it also recognizes that the pace of economic expansion will likely slow in the near term but, by prefacing that consideration with the word "however," gives it more prominence. The statement then asserts that the cut in the target rate, combined with the policy easing at the September meeting, should help forestall some of the adverse effects on the broader economy that might otherwise arise from the disruptions in financial markets, replicating the words in the September statement. The paragraph regarding inflation is unchanged from September, as in Alternative B. If the Committee believes that, after this move, the risks to growth would still be tilted somewhat to the downside while some upside inflation risks would remain, it could characterize the risks as balanced and continue by stating its intent to assess the effects of financial and other developments on economic prospects as in Alternative B.

(26) Investors currently see a 25 basis point policy easing at this meeting as the most likely outcome. Thus, very short-term interest rates would likely change little in response to an announcement along the lines of that proposed under Alternative A. However, because market participants expect more than 25 basis points of easing over the next few quarters, the balanced risk assessment, which would likely be seen as suggesting that further policy easing may not be forthcoming, could prompt a modest increase in intermediate- and longer-term interest rates. If participants interpreted the statement as suggesting reasonably good odds of sustainable growth given the easier stance of policy, the equity market might rally modestly and the foreign exchange value of the dollar could firm a bit.

Money and Debt Forecasts

(27) Under the Greenbook projection, M2 is forecast to grow at about a 5½ percent rate on average in the current quarter and the first quarter of 2008—about 1 percentage point higher than in the previous forecast, which assumed a more gradual policy easing than the Committee implemented at the September meeting. After the first quarter of next year, M2 growth is projected to slow to just under a 4½ percent pace for the remainder of the projection period, about in line with the rate forecast in the September Bluebook.

(28) After having expanded at an annual rate of 7½ percent in the first half of the year, domestic nonfinancial debt is expected to increase at about a 6½ percent pace in the second half of 2007 and a 4¾ percent rate in 2008 and 2009. The deceleration in total nonfinancial sector debt reflects a projected slowdown in borrowing across all major sectors except the federal government. With house prices expected to decline, home sales seen as falling further before posting a modest recovery in 2009, and tighter standards and terms on mortgage loans projected to persist for at least some borrowers, the staff expects household debt growth to slow to 4¾ percent at an annual rate in the second half of this year and to 3½ percent in 2008 and 2009, which would be the slowest annual rate of growth in real terms since 1991. Nonfinancial business debt, which expanded robustly in the third quarter, is projected to decelerate somewhat over the forecast period, as the demand for funds to finance LBOs and share repurchases abates.

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

		25 bp Easing	No Change/ Greenbook Forecast*
Monthly Growth Rates			
	Apr-07	9.0	9.0
	May-07	3.2	3.2
	Jun-07	2.0	2.0
	Jul-07	4.1	4.1
	Aug-07	10.6	10.6
	Sep-07	5.2	5.2
	Oct-07	5.6	5.6
	Nov-07	5.3	4.9
	Dec-07	5.2	4.4
	Jan-08	6.2	5.4
	Feb-08	5.1	4.4
	Mar-08	5.1	4.6
Quarterly Growth Rates			
	2007 Q2	6.5	6.5
	2007 Q3	5.1	5.1
	2007 Q4	6.0	5.8
	2008 Q1	5.5	4.8
Annual Growth Rates			
	2006	4.9	4.9
	2007	6.4	6.3
	2008	4.8	4.4
	2009	4.3	4.3
Growth From	To		
Oct-07	Mar-08	5.4	4.8

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

Directive

Draft language for the directive is provided below.[7]

> 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 ________ ~~4¾~~ percent.

[7] The Committee plans to vote on the entire statement beginning with the October meeting. Draft statements associated with the various alternatives are presented in Table 1.

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	$i_t = 1.20i_{t-1}–0.39i_{t-2}+0.19[1.17 + 1.73\,\pi_t + 3.66(y_t - y_t^*) - 2.72(y_{t-1} - y_{t-1}^*)]$
Forecast-based rule	$i_t = 1.18i_{t-1}–0.38i_{t-2}+0.20[0.98 +1.72\,\pi_{t+2\|t}+2.29(y_{t+1\|t} - y_{t+1\|t}^*)–1.37(y_{t-1} - y_{t-1}^*)]$
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	4.52	2.39	3.16	4.00	4.85	4.69	3.77	3.96	4.45	4.70	1.84	2.07	6.09	4.33	6.14	5.40
Monthly																
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
Sep 07	4.94	3.77	4.00	4.20	5.46	4.94	4.06	4.18	4.63	4.86	2.18	2.29	6.59	4.45	6.38	5.66
Weekly																
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	6.46	5.74
Sep 14 07	5.05	3.99	4.04	4.23	5.67	5.02	4.03	4.09	4.53	4.75	2.12	2.22	6.54	4.40	6.31	5.66
Sep 21 07	5.00	3.58	3.92	4.15	5.30	4.84	4.09	4.23	4.67	4.90	2.17	2.27	6.65	4.45	6.34	5.65
Sep 28 07	4.78	3.31	3.79	4.08	5.20	4.77	4.02	4.24	4.71	4.94	2.20	2.34	6.63	4.42	6.42	5.60
Oct 5 07	4.72	3.58	3.96	4.16	5.23	4.72	4.04	4.21	4.67	4.88	2.16	2.29	6.55	4.36	6.37	5.58
Oct 12 07	4.75	3.89	4.11	4.28	5.21	4.72	4.19	4.34	4.77	4.96	2.24	2.36	6.57	4.36	6.40	5.73
Oct 19 07	4.74	3.74	4.04	4.21	5.12	4.76	4.04	4.20	4.68	4.90	2.07	2.27	6.49	4.33	6.40	5.76
Oct 26 07	--	3.85	3.94	4.07	4.97	4.74	3.81	4.00	4.50	4.73	1.92	2.13	--	--	6.33	5.66
Daily																
Oct 9 07	4.91	3.66	4.07	4.28	5.22	4.76	4.16	4.33	4.77	4.95	2.24	2.36	6.57	--	--	--
Oct 10 07	4.52	3.80	4.06	4.27	5.22	4.71	4.18	4.33	4.76	4.94	2.24	2.35	6.56	--	--	--
Oct 11 07	4.75	3.98	4.12	4.27	5.21	4.71	4.16	4.32	4.77	4.96	2.23	2.36	6.56	--	--	--
Oct 12 07	4.75	4.12	4.20	4.31	5.19	4.71	4.25	4.38	4.80	4.99	2.26	2.38	6.57	--	--	--
Oct 15 07	4.81	4.24	4.31	4.39	5.16	4.78	4.24	4.36	4.79	4.99	2.22	2.37	6.57	--	--	--
Oct 16 07	4.68	4.14	4.25	4.33	5.17	4.72	4.15	4.31	4.77	4.98	2.17	2.35	6.58	--	--	--
Oct 17 07	4.70	3.73	4.01	4.17	5.10	4.80	4.02	4.19	4.67	4.89	2.06	2.26	6.48	--	--	--
Oct 18 07	4.69	3.18	3.76	4.09	5.09	4.79	3.96	4.14	4.63	4.86	2.01	2.23	6.46	--	--	--
Oct 19 07	4.77	3.41	3.85	4.07	5.06	4.72	3.83	4.01	4.52	4.75	1.91	2.14	6.38	--	--	--
Oct 22 07	4.71	3.65	4.00	4.15	5.03	4.76	3.86	4.04	4.52	4.75	1.94	2.14	6.38	--	--	--
Oct 23 07	4.67	3.98	3.98	4.12	5.02	4.72	3.84	4.03	4.52	4.76	1.95	2.15	6.39	--	--	--
Oct 24 07	4.74	3.83	3.85	4.00	4.97	4.74	3.77	3.96	4.47	4.71	1.85	2.08	6.34	--	--	--
Oct 25 07	4.78 p	3.92	3.94	4.02	4.85	--	3.77	3.97	4.48	4.72	1.84	2.07	--	--	--	--

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	5.4	5.3
2005	0.3	4.2	5.3
2006	-0.4	4.9	6.3
Quarterly (average)			
2006-Q4	-0.2	6.3	7.9
2007-Q1	-0.4	7.3	9.1
Q2	2.3	6.5	7.5
Q3	-1.6	5.1	6.7
Monthly			
2006-Oct.	4.6	8.5	9.5
Nov.	1.3	6.0	7.2
Dec.	-4.3	6.9	9.6
2007-Jan.	5.2	9.4	10.4
Feb.	-9.8	3.8	7.1
Mar.	8.0	9.5	9.8
Apr.	8.4	9.0	9.2
May	0.0	3.2	4.0
June	-10.8	2.0	5.0
July	2.5	4.1	4.4
Aug.	0.4	10.6	13.0
Sep.	-0.6	5.2	6.6
Oct. e	5.9	5.6	5.6
Levels ($billions):			
Monthly			
2007-May	1379.3	7237.9	5858.6
June	1366.9	7249.9	5883.1
July	1369.8	7274.5	5904.7
Aug.	1370.2	7338.8	5968.7
Sep.	1369.5	7370.8	6001.3
Weekly			
2007-Sep. 3	1425.0	7370.1	5945.1
10	1380.6	7357.2	5976.6
17	1363.6	7376.7	6013.1
24	1350.0	7381.7	6031.7
Oct. 1	1356.4	7383.7	6027.3
8p	1374.5	7385.1	6010.6
15p	1374.6	7372.6	5998.0

p preliminary
e estimated

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

October 25, 2007

	Treasury Bills			Treasury Coupons						Federal Agency	Net change total	Net RPs [5]		
	Net Purchases [2]	Redemptions (-)	Net Change	Net Purchases [3] < 1	1-5	5-10	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 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
QIII	---	10,000	-10,000	---	---	---	---	1,236	-1,236	---	-11,236	6,579	-2,550	4,030
2007 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
Sep	---	---	---	---	---	---	---	---	---	---	---	7,890	-1,641	6,250
2007 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
Sep 19	---	---	---	---	---	---	---	---	---	---	---	-4,622	---	-4,622
Sep 26	---	---	---	---	---	---	---	---	---	---	---	9,525	---	9,525
Oct 3	---	---	---	---	---	---	---	---	---	---	---	1,682	1,000	2,682
Oct 10	---	---	---	---	---	---	---	---	---	---	---	72	-3,000	-2,928
Oct 17	---	---	---	---	---	---	---	---	---	---	---	373	---	373
Oct 24	---	---	---	---	---	---	---	---	---	---	---	-5,108	2,000	-3,108
2007 Oct 25	---	---	---	---	---	---	---	---	---	---	---	-10,004	---	-10,004
Intermeeting Period														
Sep 18-Oct 25	---	---	---	---	---	---	---	---	---	---	---	-2,904	---	-2,904
Memo: LEVEL (bil. $)														
Oct 25			267.0	114.6	236.3	75.5	86.2		512.6	---	779.6	-13.4	12.0	-1.4

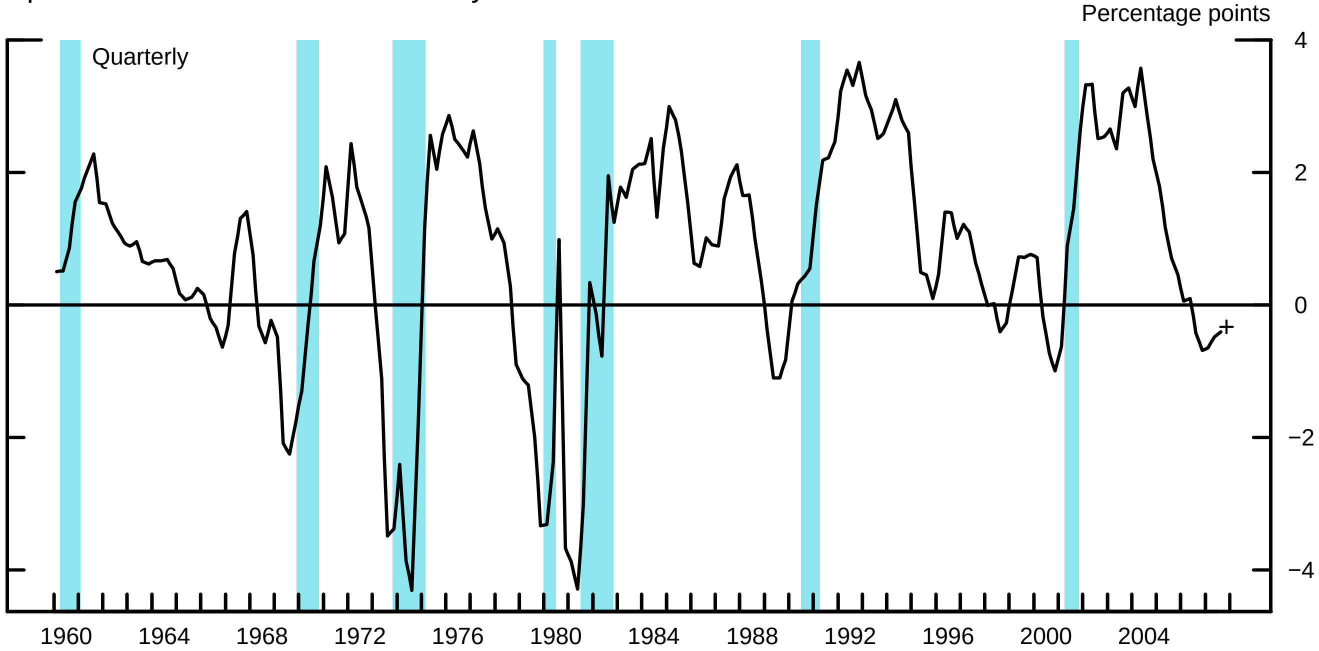
1. Change from end-of-period to end-of-period. Excludes changes in compensation for the effects of inflation on the principal of inflation-indexed securities.
2. Outright purchases less outright sales (in market and with foreign accounts).
3. Outright purchases less outright sales (in market and with 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

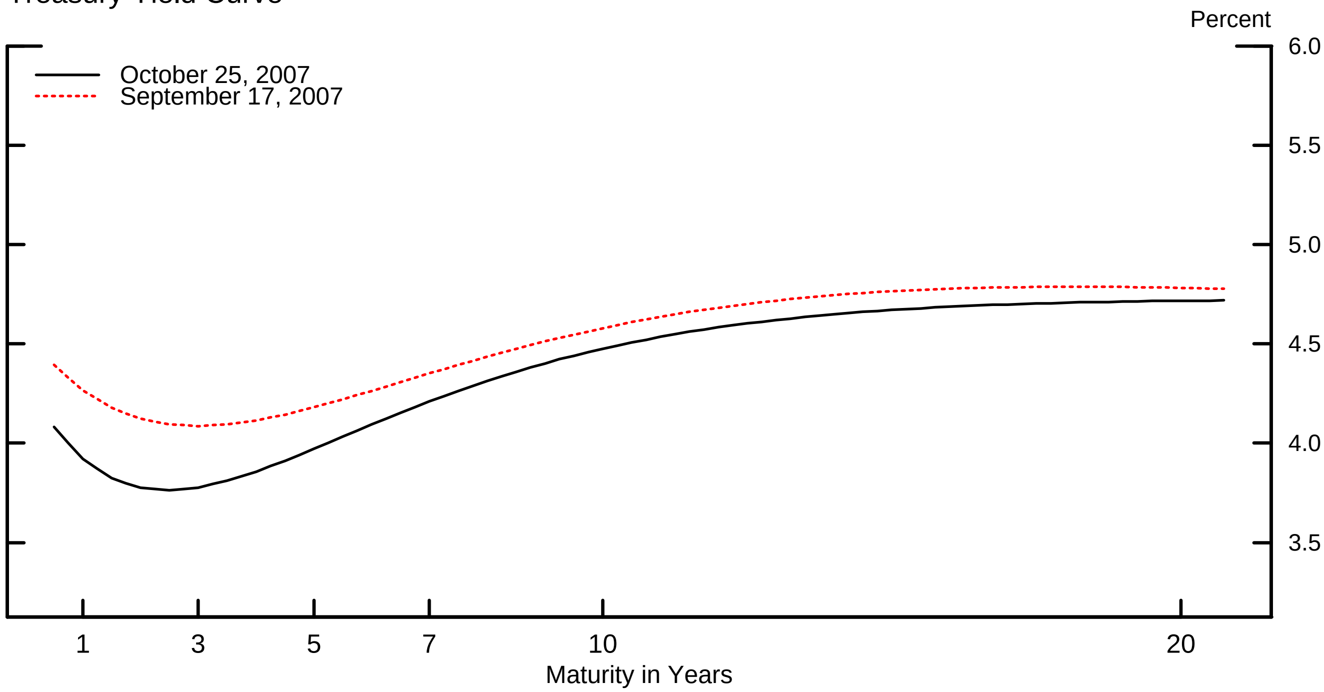
Treasury Yield Curve

Spread Between Ten−Year Treasury Yield and Federal Funds Rate



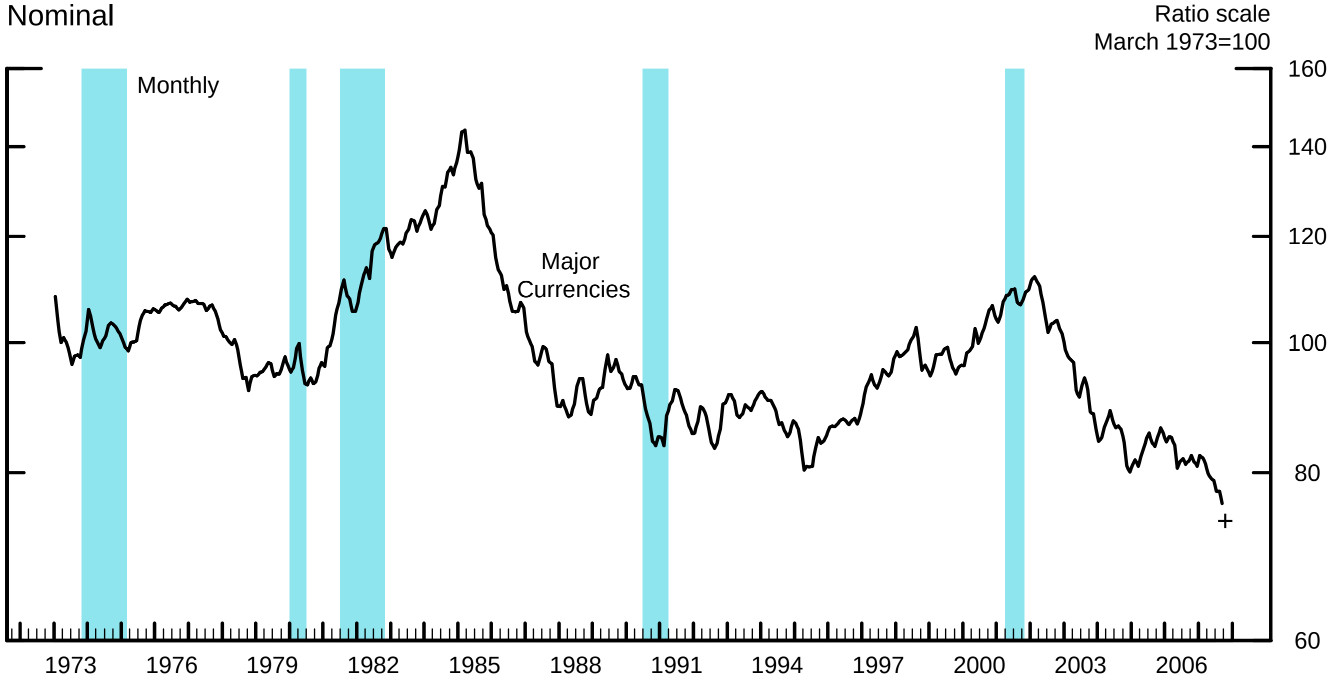
+ Denotes most recent weekly value.
Note. Blue shaded regions denote NBER−dated recessions.

Treasury Yield Curve*

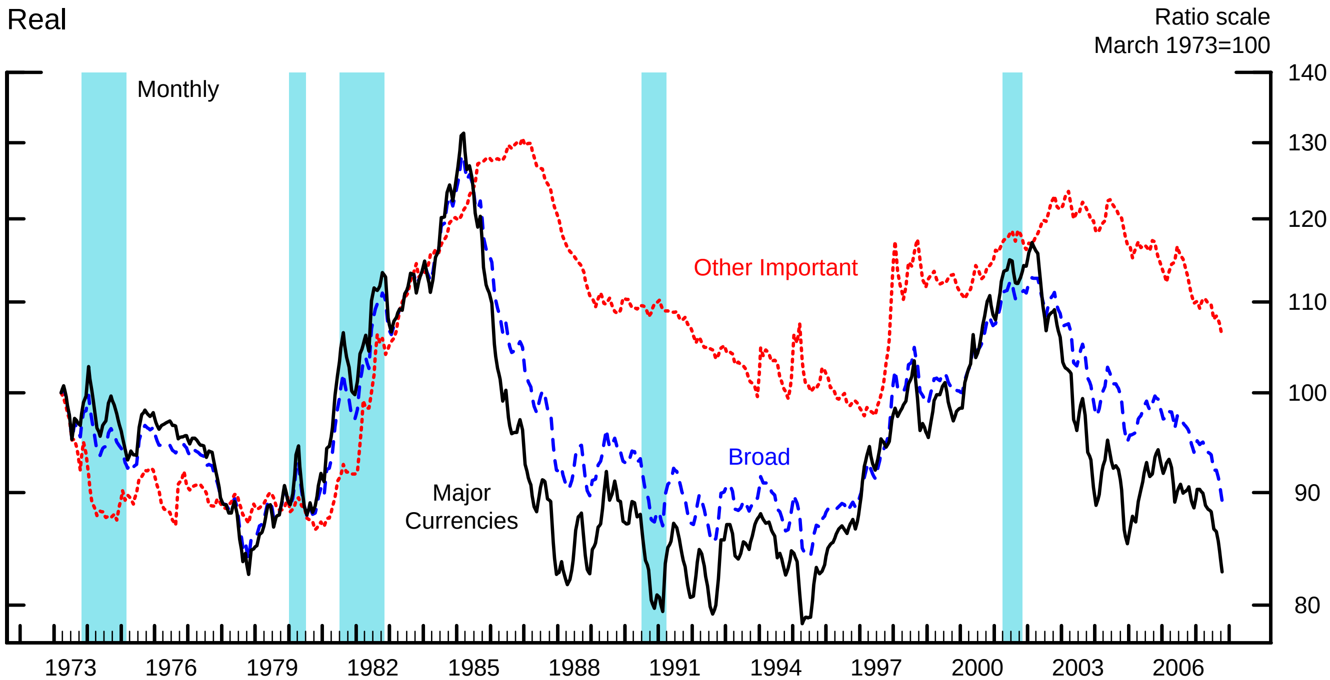


*Smoothed yield curve estimated from off−the−run Treasury coupon securities. Yields shown are those on notional par Treasury securities with semi−annual coupons.

Dollar Exchange Rate Indexes



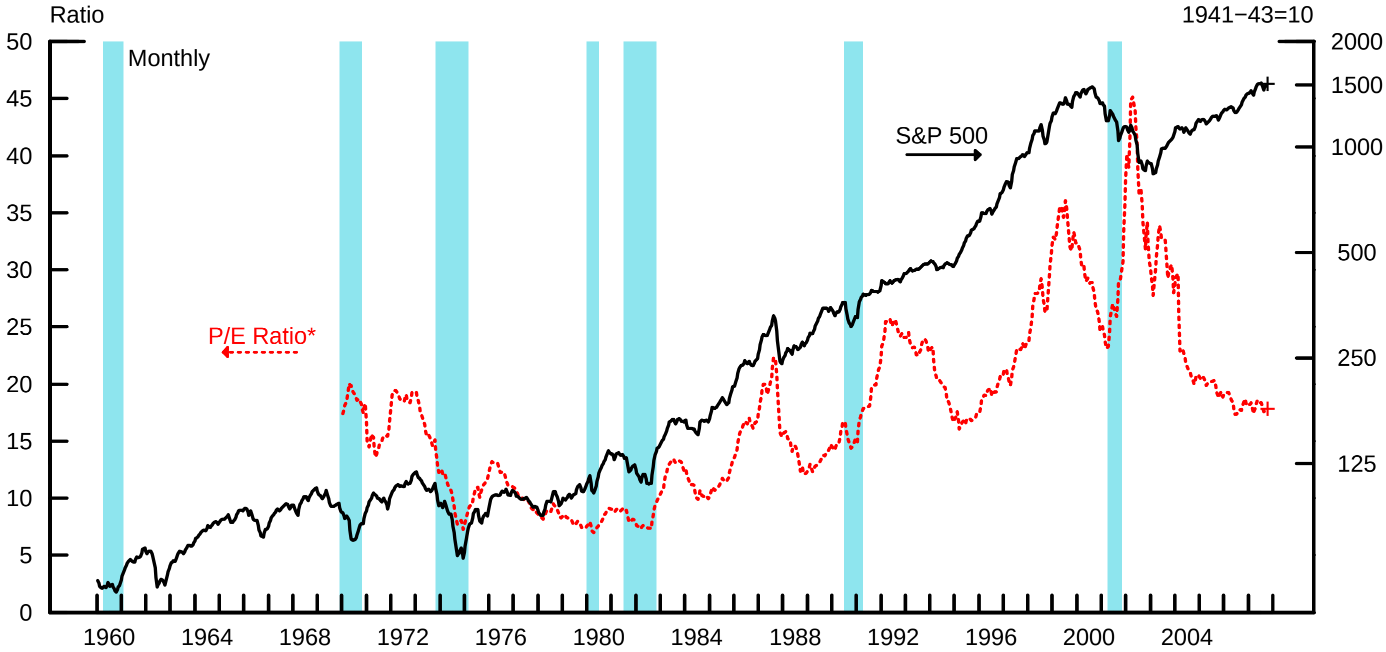
+ Denotes most recent weekly value.



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.

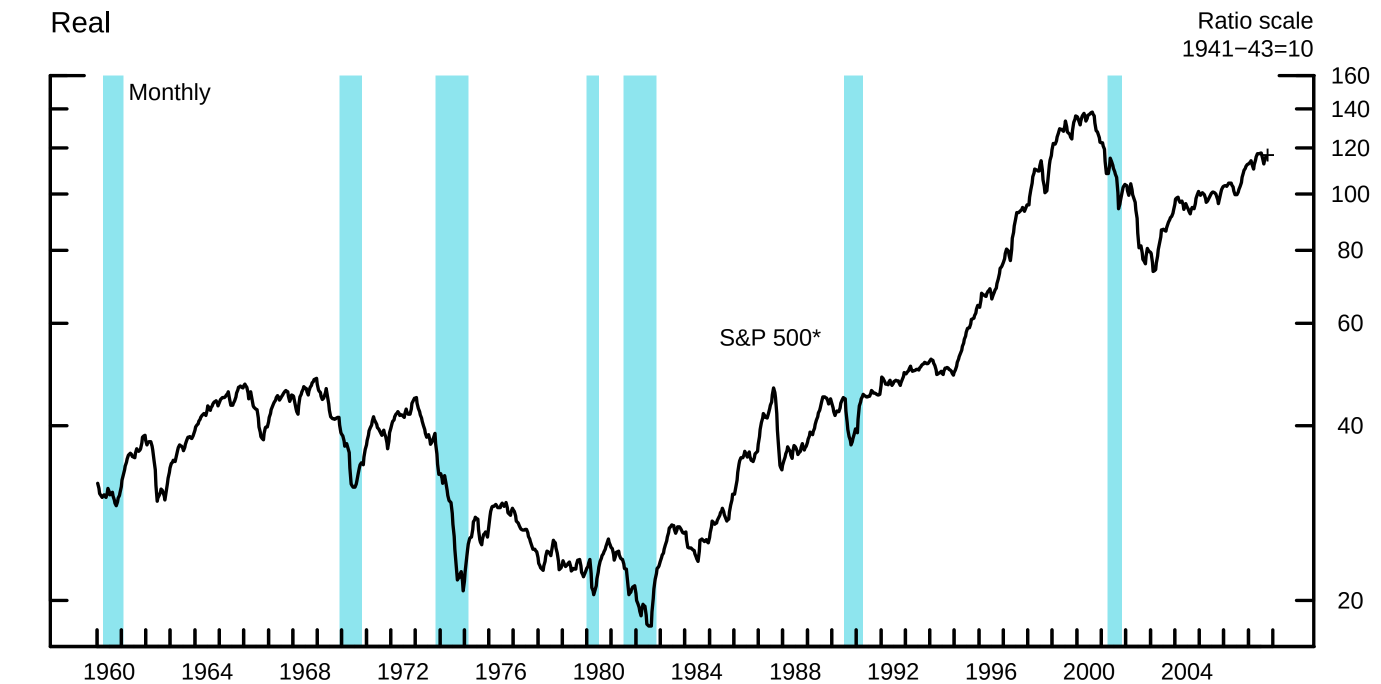
Stock Indexes

Nominal



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

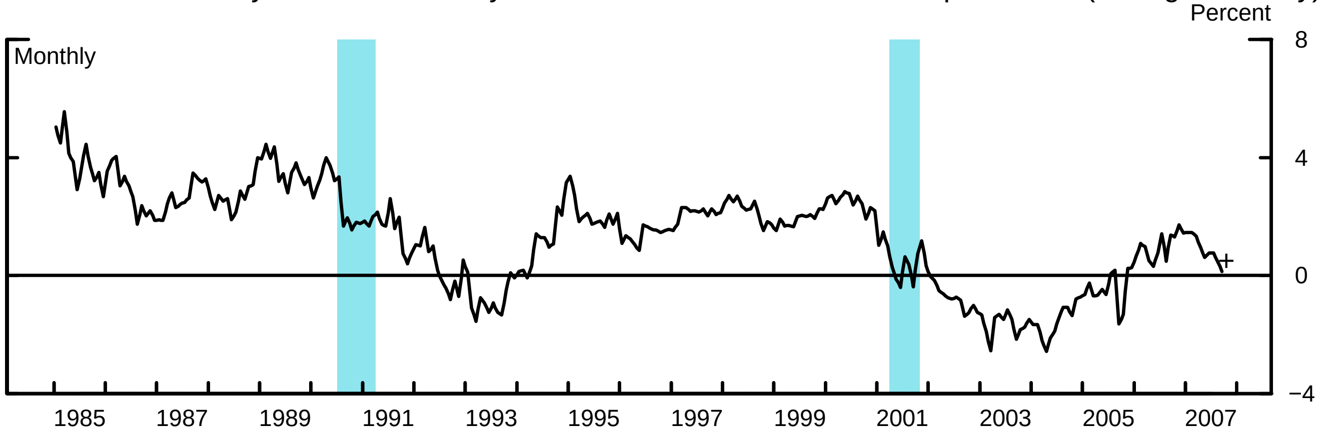
Real



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

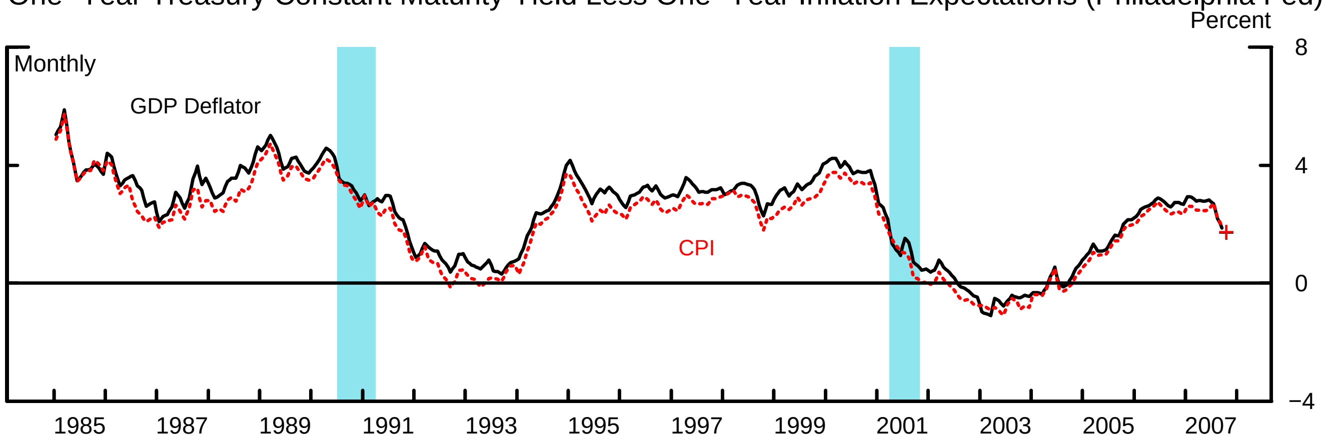
One−Year Real Interest Rates

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



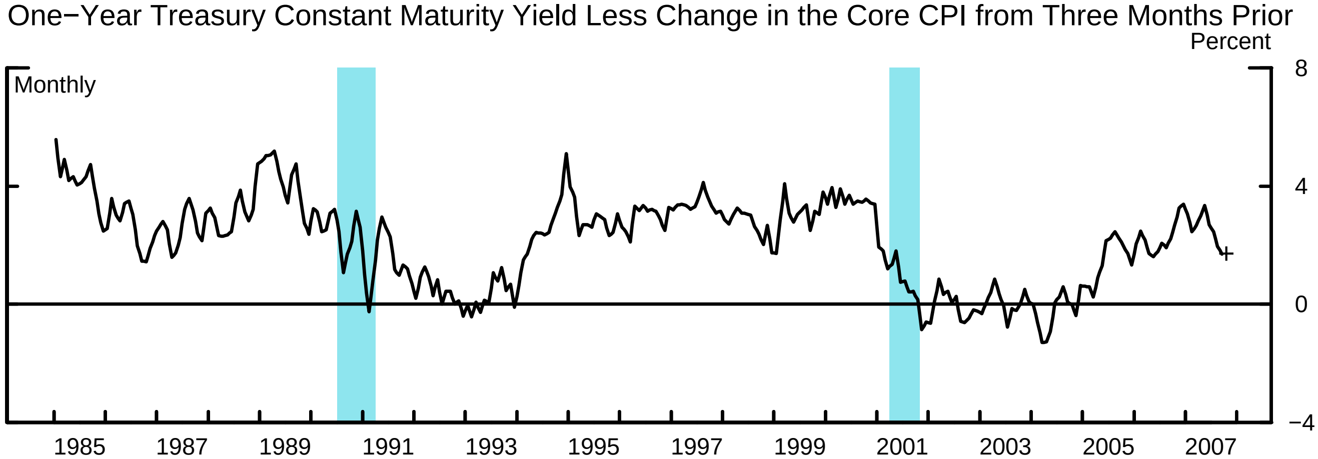
* Mean value of respondents.

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.

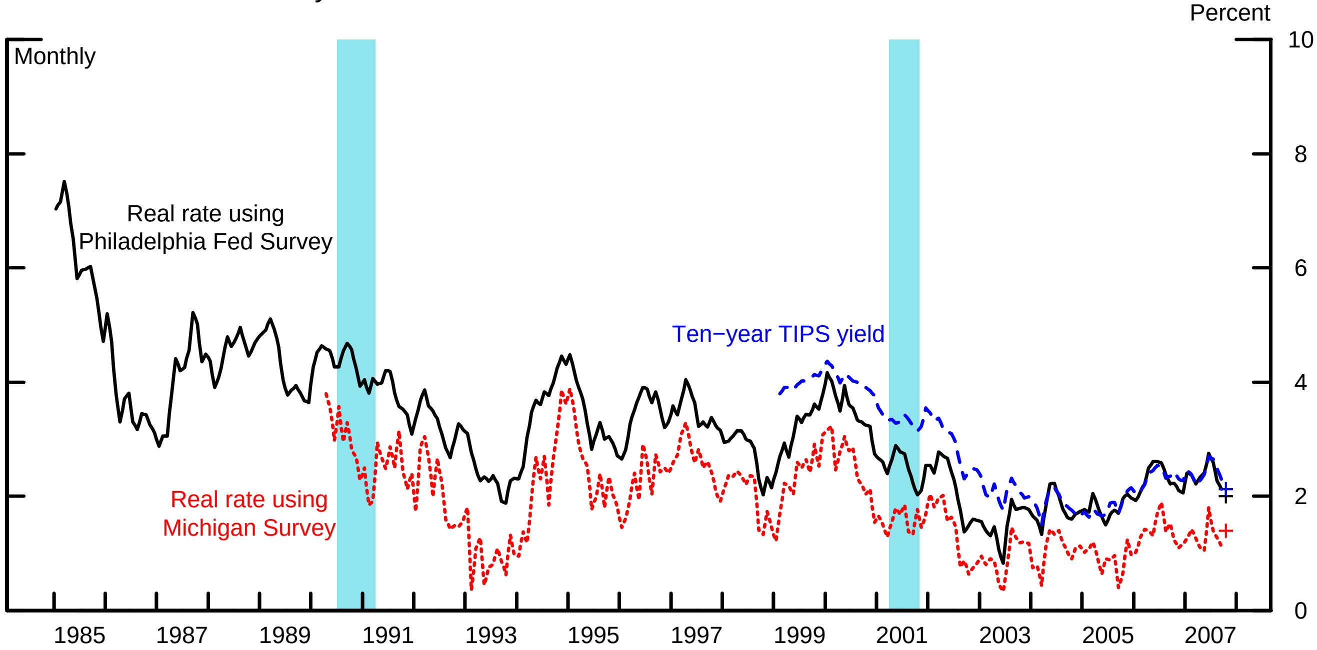
One−Year Treasury Constant Maturity Yield Less Change in the Core CPI from Three Months Prior



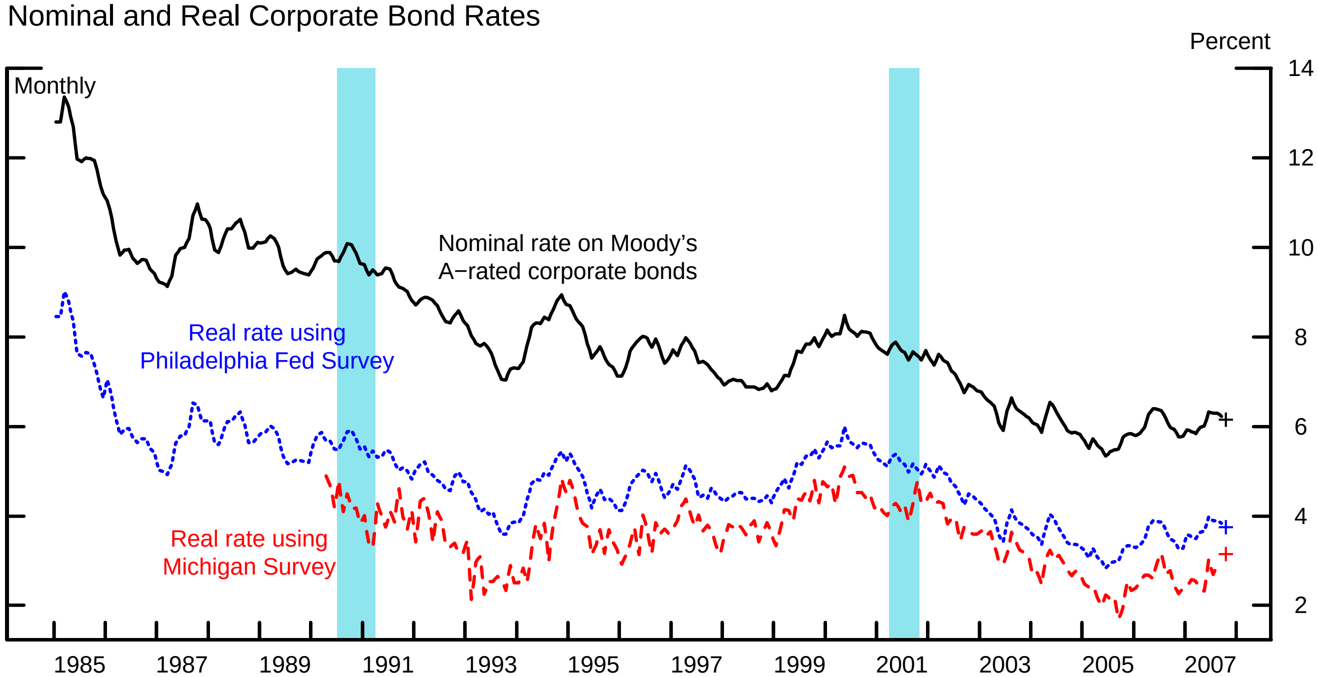
+ Denotes most recent weekly Treasury constant maturity yield less most recent inflation expectation.
Note. Blue shaded regions denote NBER−dated recessions.

Long−Term Real Interest Rates*

Real Ten−Year Treasury Yields



Nominal and Real Corporate Bond Rates

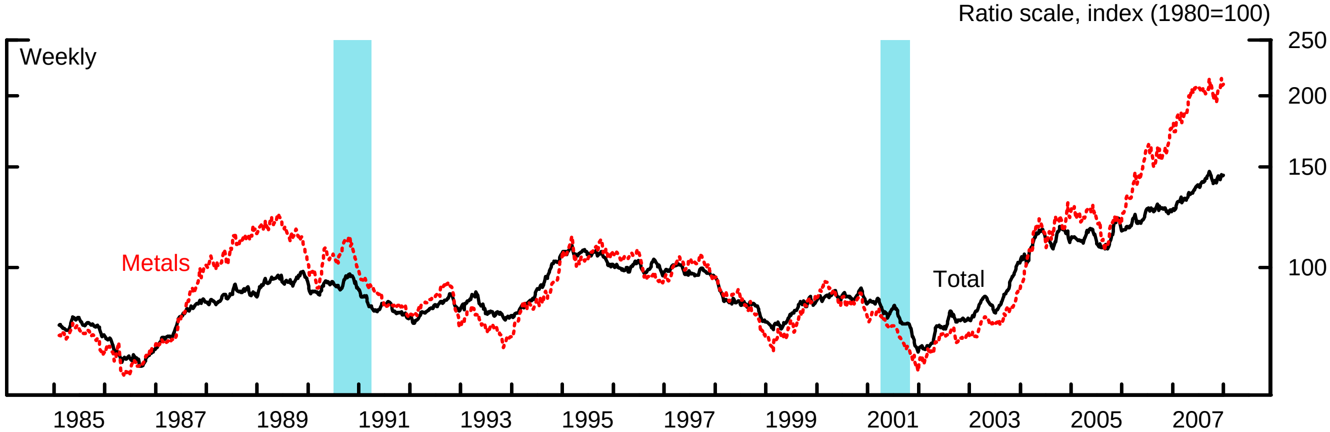


* For real rates, measures using the Philadelphia Fed Survey employ the ten−year inflation expectations from the Blue Chip Survey until April 1991 and the Philadelphia Federal Reserve Bank Survey of Professional Forecasters thereafter (median value of respondents). Measures using the Michigan Survey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

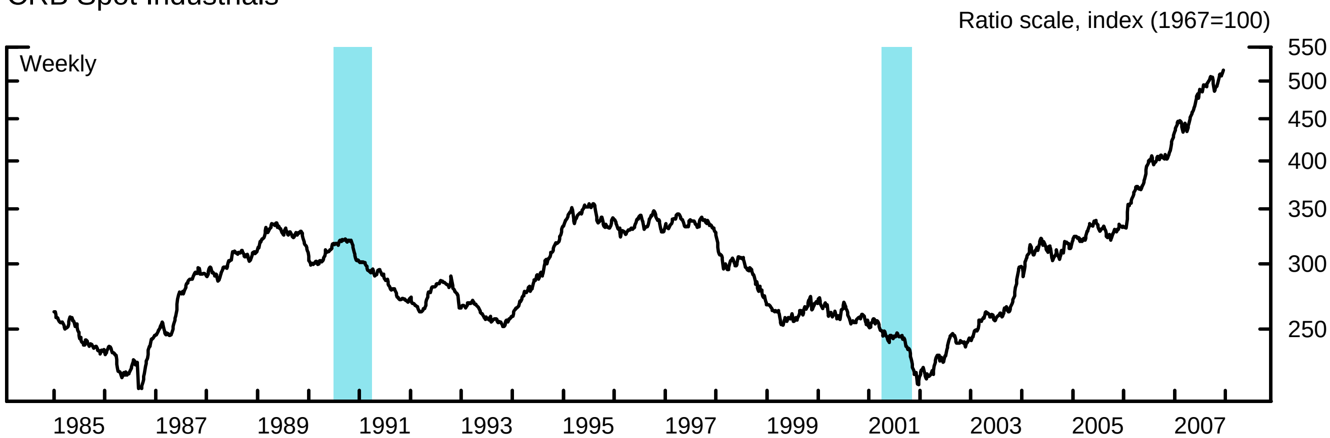
+ For TIPS and nominal corporate rate, denotes the most recent weekly value. For other real rate series, denotes the most recent weekly nominal yield less the most recent inflation expectation.
Note. Blue shaded regions denote NBER−dated recessions.

Commodity Price Measures

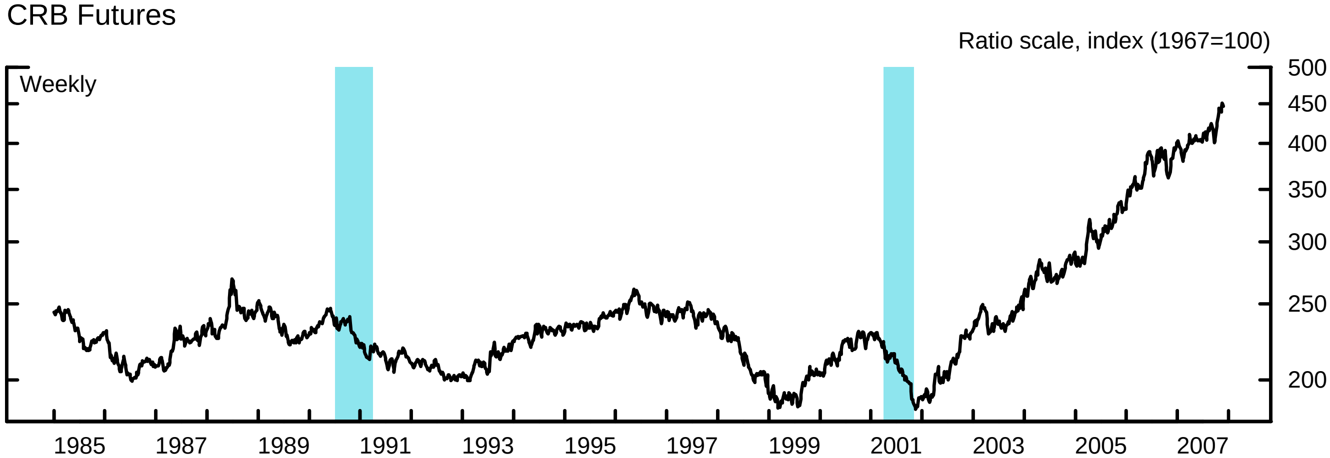
Journal of Commerce Index



CRB Spot Industrials



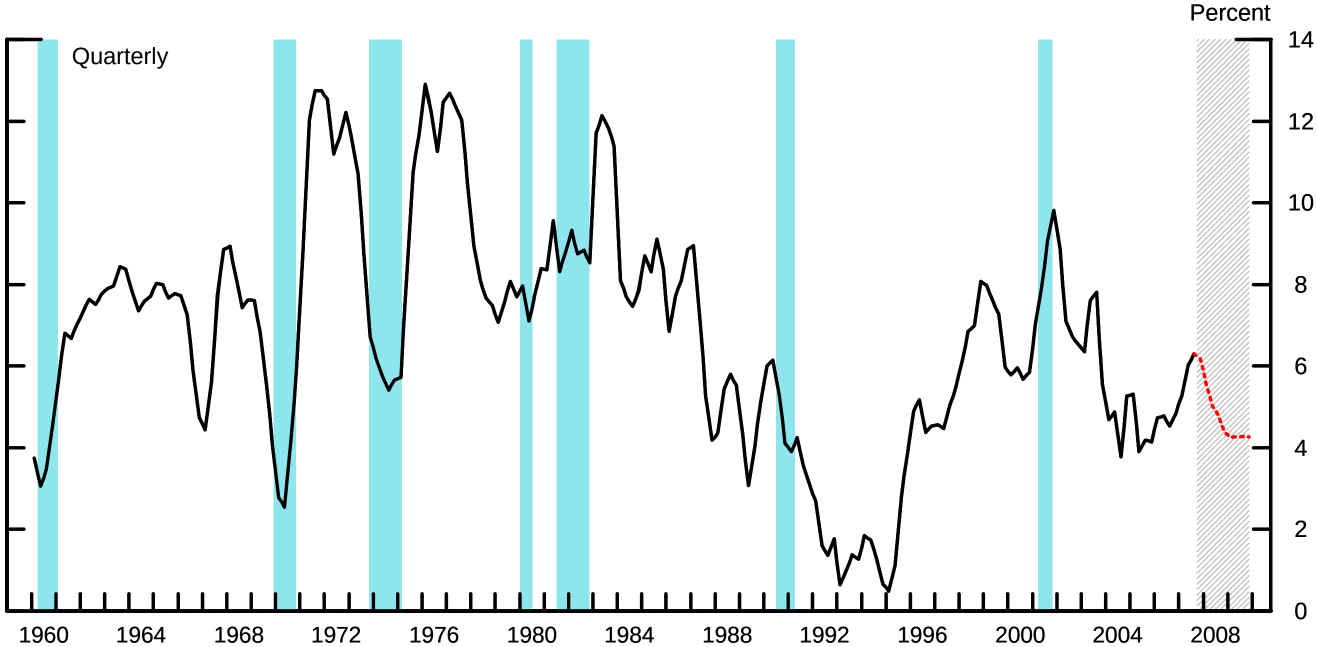
CRB Futures



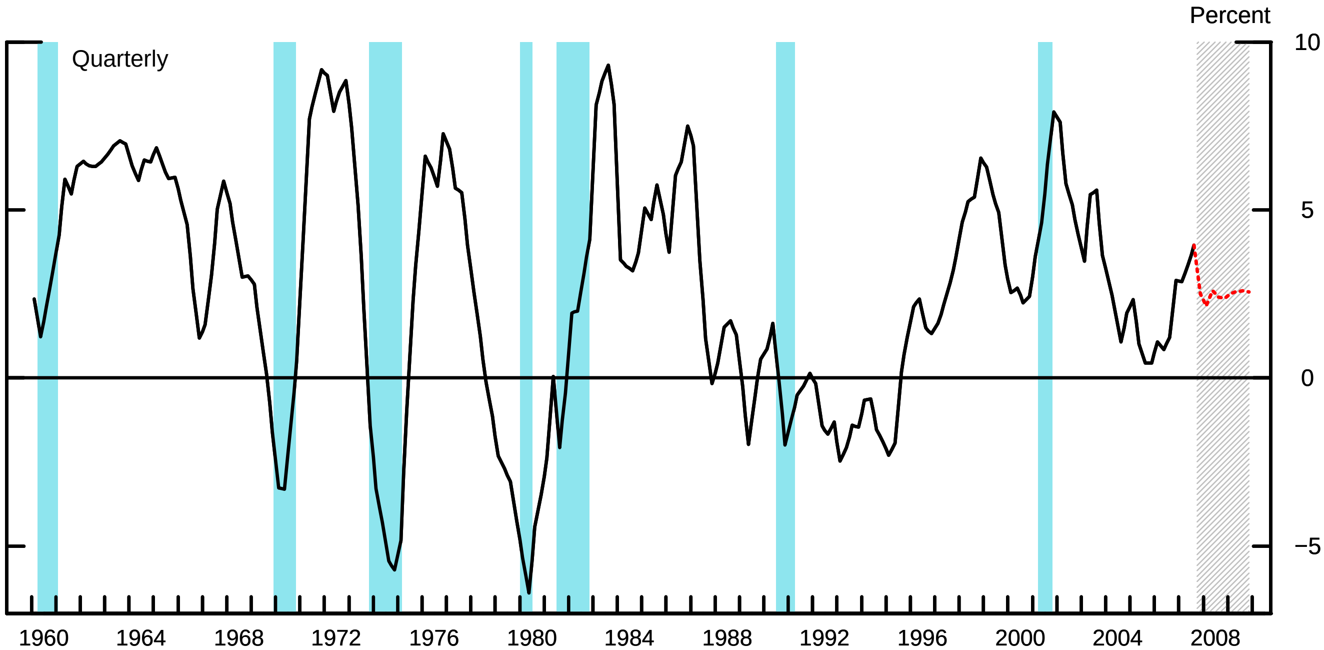
Note. Blue shaded regions denote NBER−dated recessions.

Growth of M2

Nominal M2

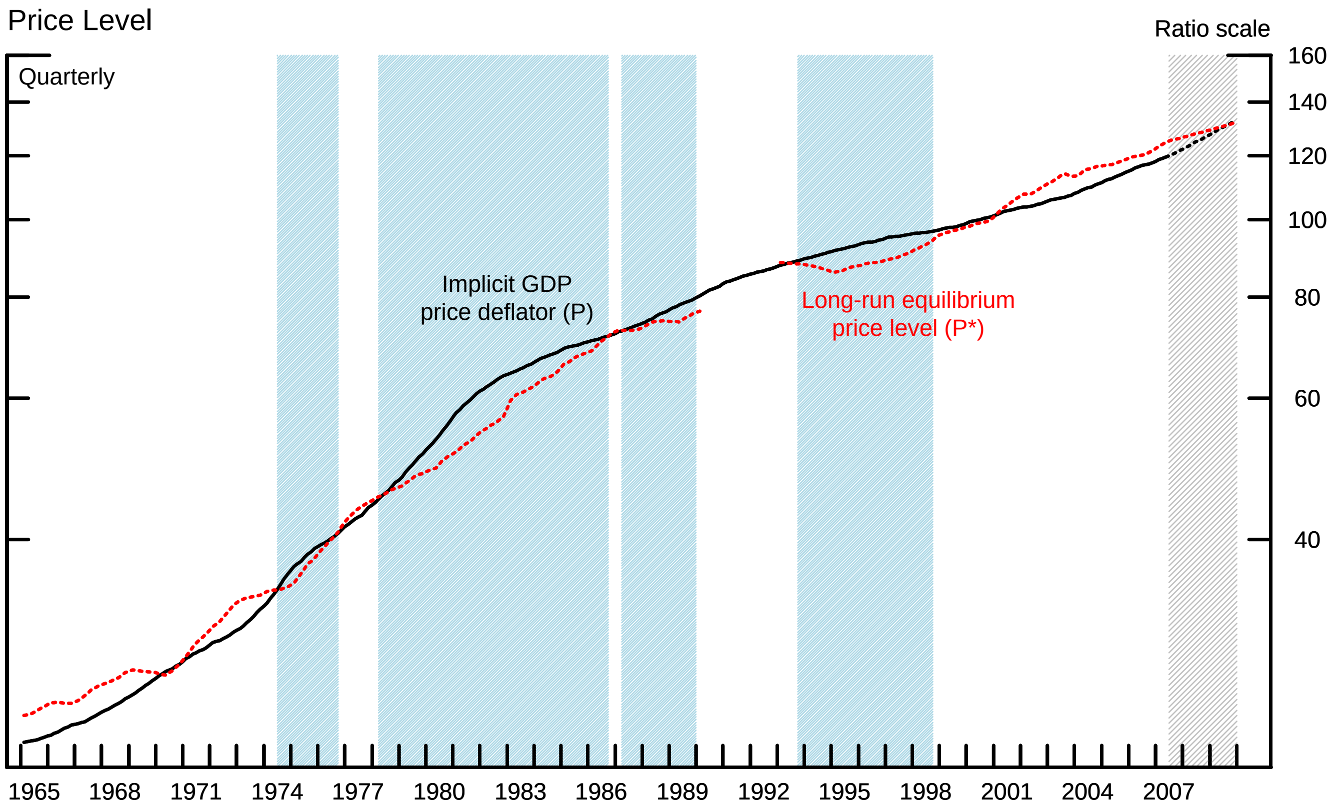


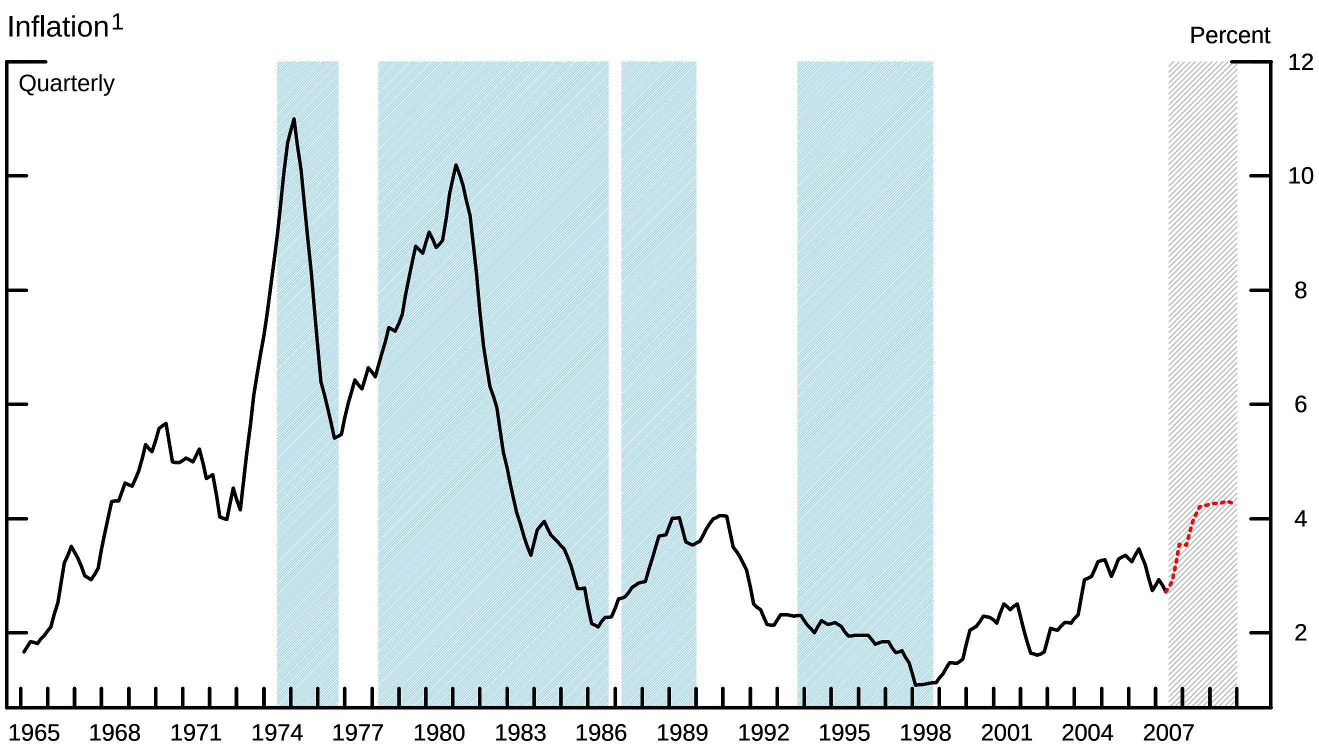
Real M2



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

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.