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.

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CLASS I FOMC - RESTRICTED CONTROLLED (FR)

DECEMBER 6, 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) After showing some signs of improvement in late September and October, conditions in financial markets worsened over the intermeeting period. Despite economic data releases that were on balance only slightly weaker than expected, Treasury yields and the expected path for the federal funds rate fell sharply amid reports of sizable losses at several large financial institutions and increased concerns over the economic outlook. Short-term Treasury instruments benefited from flight-to-quality flows as investors reduced their exposure to risky assets. Heightened worries about counterparty risk, as well as the effects of balance sheet constraints and liquidity pressures, affected interbank funding markets and commercial paper markets, where spreads over risk-free rates rose to levels that were, in some cases, higher than those seen in August. Strains in those markets were no doubt exacerbated by concerns related to year-end pressures. In longer-term corporate markets, both investment- and speculative-grade credit spreads widened considerably; issuance slowed but remained strong. Equity prices declined, on net, with financial stocks especially hard hit. In housing finance, subprime mortgage markets stayed virtually shut and spreads on jumbo loans apparently widened a good bit further. Spreads on conforming products also increased, following reports of sizable losses and consequent reduced capital ratios at the housing GSEs.

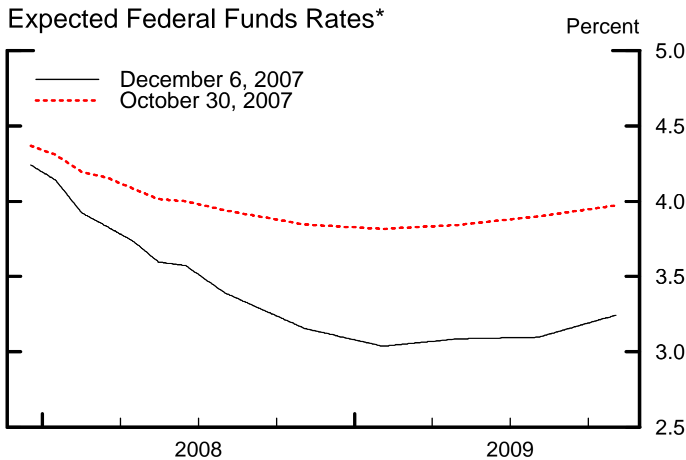
Monetary Policy Expectations and Treasury Yields

(2) The FOMC's decision at its October meeting to reduce the target federal funds rate by 25 basis points to 4½ percent was largely expected by market

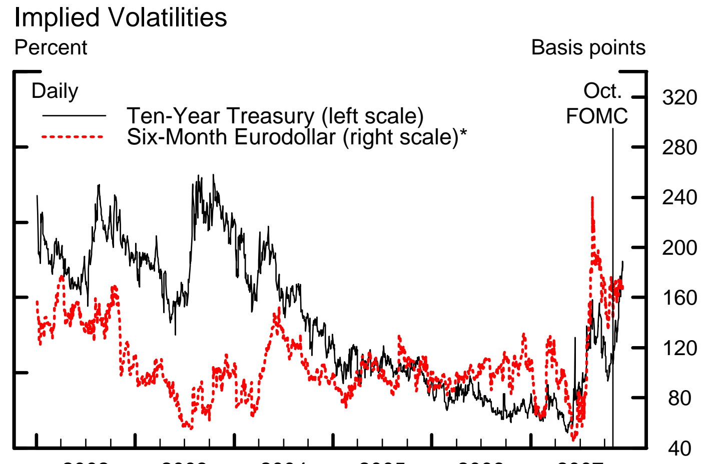
participants, although the assessment that upside risks to inflation balanced the downside risks to growth was not fully anticipated and apparently led investors to revise up slightly the expected path for policy.[1] The release of the FOMC minutes, including the summary of economic projections, elicited only a modest market reaction. Similarly, data releases—which apparently came in, on balance, only slightly weaker than investors expected—left policy expectations little changed on net. However, concerns about the potential adverse effects on credit availability and economic growth of sizable losses at large financial institutions and of financial market strains in general pushed the expected path of policy down substantially. Market participants have priced in a total of about 150 basis points of policy easing by early 2009 (Chart 1), about 80 basis points more than at the time of the October meeting. Judging from quotes on federal funds target binary options, investors are virtually certain of a rate cut at the upcoming FOMC meeting, and assign about 60 percent probability to a quarter-point cut and 35 percent probability to a half-point easing. Respondents to the Desk's recent survey of primary dealers also anticipated easing, but placed lower odds on a 50 basis point cut than suggested by market

[1] The effective federal funds rate averaged 4.50 percent over the intermeeting period, but the rate was again more volatile than usual. The intraday standard deviation over the period averaged 25 basis points, significantly higher than was typical before August, and the root mean squared deviation of the daily effective rate from the target was likewise elevated. U.S. branches and agencies of foreign banks continued to exhibit fairly strong demand for federal funds, especially in the morning. Once these institutions locked in their daily funding, federal funds tended to trade lower to varying degrees over the afternoon. As a consequence, judging the appropriate amount of reserves to provide to the market was more difficult than usual. Over the period, the volume of long-term RPs increased by $8 billion dollars to $20 billion, reflecting an $8 billion 43-day repurchase agreement that was conducted on November 28 and crosses year-end. The Desk announced that the operation was the first of several intended to help satisfy term funding needs and that the Desk planned to provide sufficient liquidity to resist upward pressure on the funds rate around year-end. The Desk did not purchase any securities outright, but on December 6 redeemed $5 billion in Treasury bills and boosted the level of short-term repos outstanding. This shift was designed to provide greater flexibility to reduce the level of balances in the event of significant borrowing from the discount window.

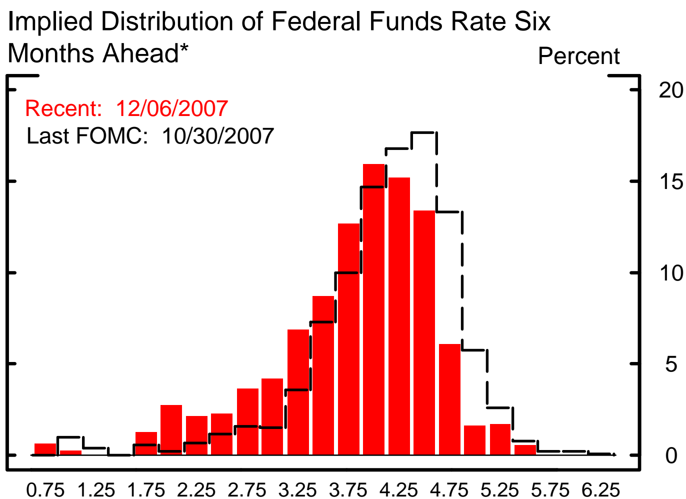
Chart 1
Interest Rate Developments



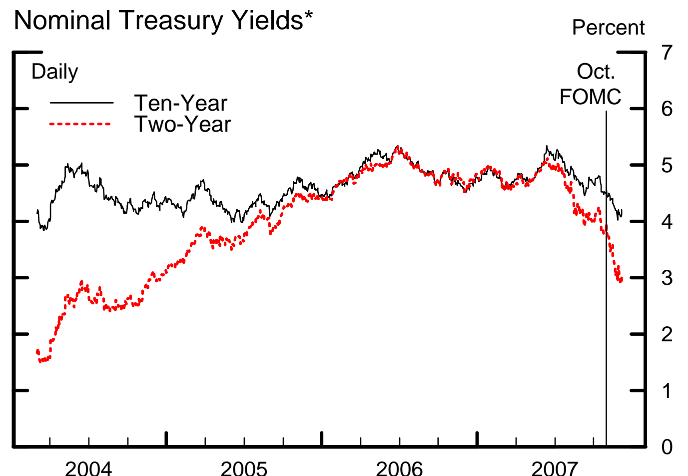
*Estimates from federal funds and Eurodollar futures, with an allowance for term premiums and other adjustments.



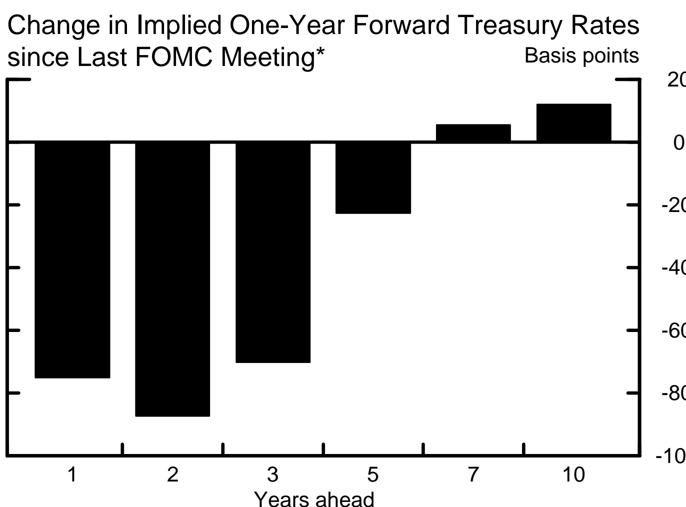
*Width of a 90 percent confidence interval estimated from the term structures for the expected federal funds rate and implied volatility.



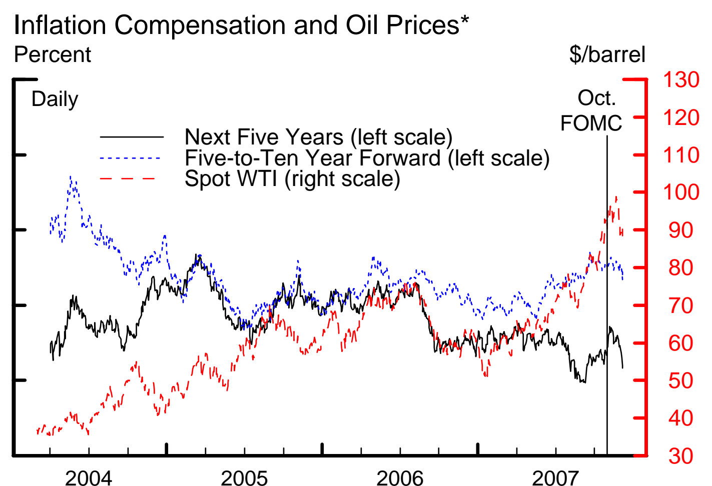
*Derived from options on Eurodollar futures contracts, with term premium and other adjustments to estimate expectations for the federal funds rate.



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



*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.



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

Note. Vertical lines indicate October 30, 2007. Last daily observations are for December 6, 2007.

quotes. Most respondents predicted that the Committee will put more emphasis on downside risks to growth than in the October statement. In addition, some dealers expect that the spread of the primary credit rate over the target funds rate will be narrowed. Uncertainty about the path for policy increased slightly, on net, from its already high levels, and the option-implied distribution of the federal funds rate six months ahead retained a substantial skew to the downside.

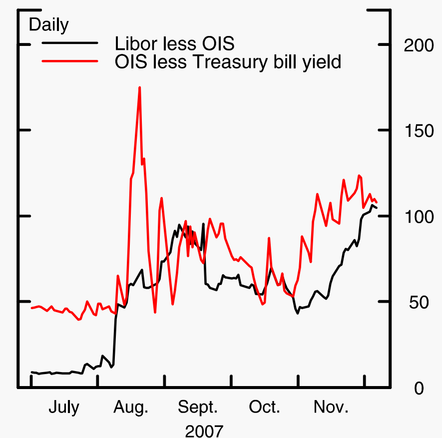
(3) Yields on two-year nominal Treasury securities fell about 80 basis points, on net, over the intermeeting period, about in line with the revision to policy expectations. Ten-year Treasury yields dropped about 30 basis points. The steepening of the yield curve owed mostly to sharply lower short- and intermediate-term forward rates, consistent with investors' apparently more pessimistic outlook for economic growth. TIPS yields fell by less than their nominal counterparts, implying modest declines in inflation compensation at both the five-year and longer horizons.

Money Markets

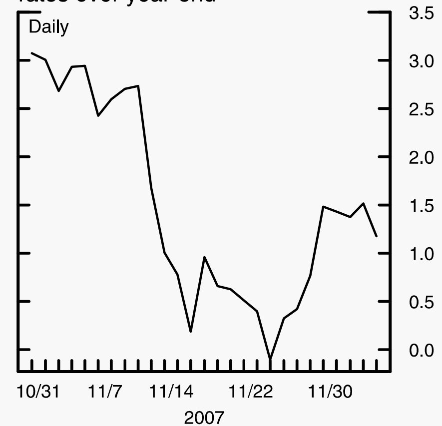
(4) After showing signs of improvement between the September and October FOMC meetings, conditions in money markets subsequently worsened, with the deterioration reflected partly in large premiums for funding over year-end. (See box "Flight-to-Quality Flows and Year-end Pressures.") Large financial institutions reported an additional $35 billion in losses over the intermeeting period, and investors appear concerned that even more writedowns may be forthcoming. Term bank funding markets came under considerable pressure, and spreads of term libor and federal funds rates over those on comparable-maturity overnight index swaps widened sharply and now exceed their September peaks. Conditions in European interbank money markets also deteriorated over the intermeeting period, as term spreads expanded by about 30 basis points in euro markets and in sterling markets. In the United States, outstanding asset-backed commercial paper (ABCP) continued to

Flight-to-Quality Flows and Year-end Pressures

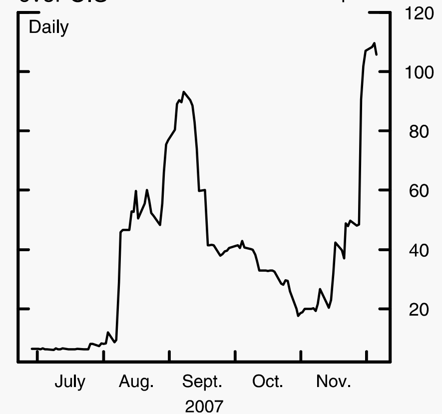
Substantial actual and anticipated losses at financial firms increased pressures on institutions' liquidity and balance sheet capacity and boosted investors' concerns about counterparty credit risk over the intermeeting period. These developments contributed to renewed flight-to-quality flows and, in money markets, generated year-end pressures which have largely been absent in recent years. Investors have apparently shifted their demand toward safe securities such as Treasury bills and away from risky assets such as uncollateralized loans to banks. Despite an increased supply of bills in November, bill yields have declined sharply over recent weeks amid heavy inflows to money market mutual funds that hold only Treasury and agency securities. The spread of the three-month overnight indexed swap (OIS) rate over the comparable-maturity Treasury bill yield—a plausible proxy for safe-haven demands—climbed about 50 basis points over the intermeeting period, though it remained below the peak reached in August. Meanwhile, the spread of three-month libor over the corresponding OIS rate—a measure of term premiums in short-term funding markets—widened about 60 basis points to its highest level during the recent period of financial market turmoil. Some tiering was evident in uncollateralized funding markets: Domestic and large European institutions were able to borrow at rates close to the libor fixing, but smaller European institutions faced a substantial premium.



While forward rates suggest that concerns about counterparty credit risk are expected to persist well into next year, market stress is particularly acute in rates that span the turn of the year. The one-week forward Treasury bill yield that encompasses the year-turn has fallen to around 1 percent, apparently reflecting financial institutions' desire to show more of the safest assets on their year-end books. Markets expect the provision of liquidity by the Desk to be generous over year-end: A comparison of futures on the effective federal funds rate to quotes on target funds rate options implies that investors expect federal funds to trade about 100 basis points below the target on the last day of the year. Nevertheless, pressures on banks' balance sheets and concerns about liquidity and counterparty credit risk have made financial institutions reluctant to lend over year-end and have fueled precautionary demand for such funding. As a result, the spread of one-month libor over the corresponding OIS rate jumped nearly 50 basis points as the maturity date on a one-month deposit crossed into the new year. The implied premium for funding on the last day of the year is about 700 basis points at an annual rate—a level that is extremely high by the standards of recent years, though still a little below that reached in the runup to Y2K. One-month libor is now 24 basis points above the primary credit rate, yet term borrowing at the discount window remains limited, likely owing in part to perceived stigma of using the primary credit facility. Significant year-end pressures can be observed in the commercial paper market as well.



*Annualized forward rate between 12/27/2007 and 1/3/2008 based on Treasury bills maturing on those dates.



contract in November (Chart 2), and spreads of ABCP yields over those on comparable unsecured CP widened considerably. In the unsecured sector, spreads on lower-rated thirty-day paper also increased substantially, particularly as the term extended over year-end, but overnight spreads widened only modestly. The shares of unsecured CP and ABCP issued over year-end are about in line with their year-ago levels. The outstanding amount of European asset-backed commercial paper declined, as some money market funds reportedly scaled back holdings of ABCP in advance of year-end.

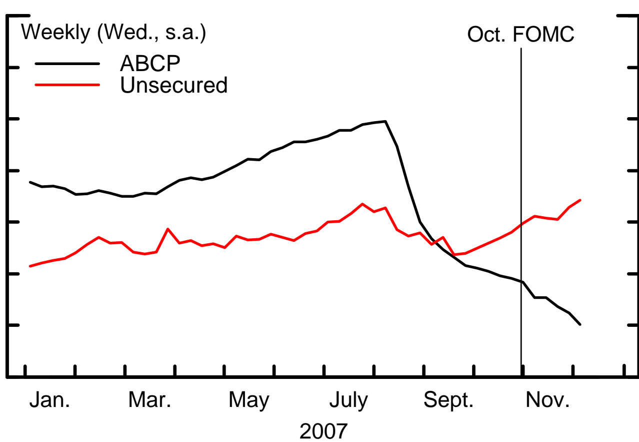
(5) Money market mutual funds experienced heavy inflows over the intermeeting period, reflecting in part safe-haven demands. Inflows were directed primarily toward funds that invest only in Treasury and agency obligations, contributing to a sharp fall in Treasury bill rates. Similarly, strong demand for Treasury collateral drove the overnight Treasury general collateral repo rate well below the federal funds rate. Lending from the SOMA securities portfolio has increased in recent weeks, and the Desk relaxed some limits on the securities lending program in response to the reduced liquidity in Treasury markets.[2]

Capital Markets

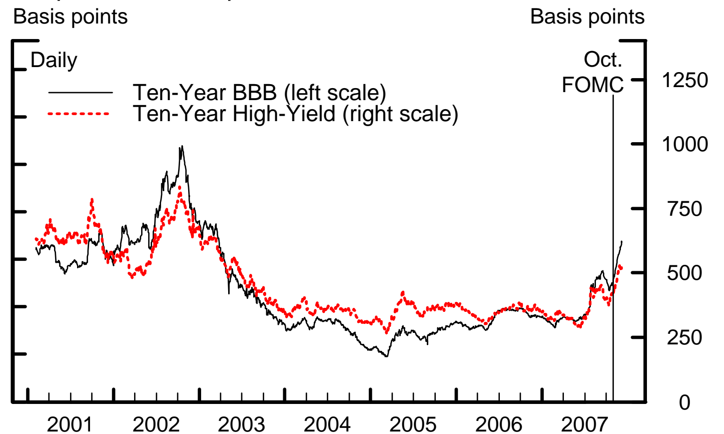
(6) Yields on investment-grade corporate bonds edged up over the intermeeting period, while those on speculative-grade bonds increased appreciably. As a result, spreads on both investment- and speculative-grade bonds over comparable-maturity Treasury securities rose markedly and are now at their highest levels in several years.

[2] On November 26, the Desk announced some modest, temporary changes to the Securities Lending Program. Individual dealers are now limited to 25 percent of the total amount of any particular security available for borrowing with a maximum of $750 million per issue, up from 20 percent and $500 million, respectively; the supply available for borrowing has been increased from 65 to 90 percent of the SOMA's holdings of an individual issue; and all securities with maturity greater than six days are eligible for borrowing versus the previous limit of securities maturing in greater than thirteen days.

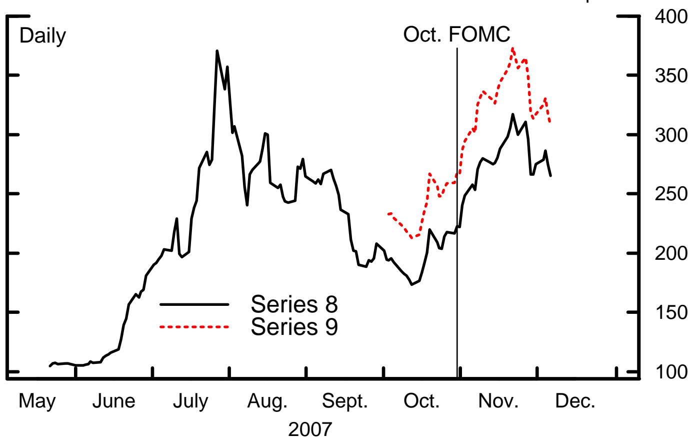
Chart 2
Asset Market Developments



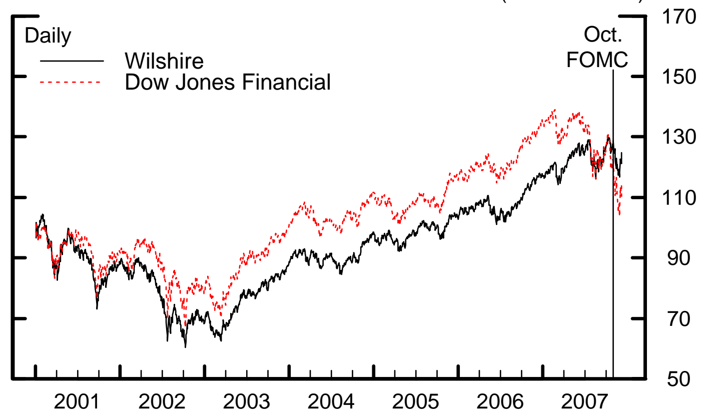
Last weekly observation is for December 5, 2007.

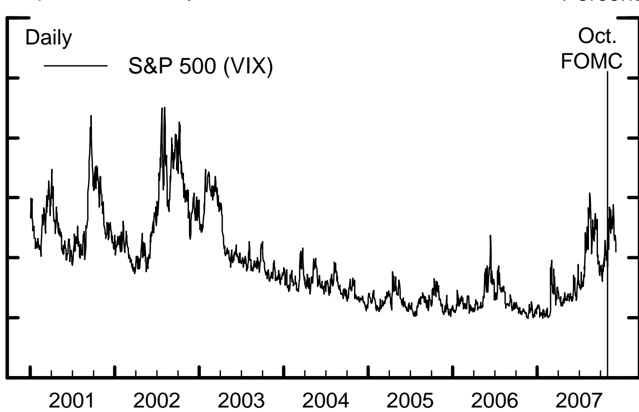


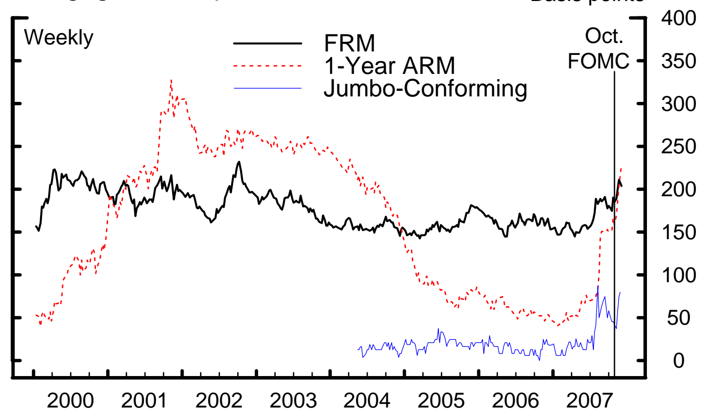
*Measured relative to an estimated off-the-run Treasury yield curve.



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







Note. FRM spread relative to 10-year Treasury. ARM spread relative to 1-year Treasury. Last weekly observation is for December 5, 2007.
Source. Freddie Mac, Inside Mortgage Finance.

Note. Vertical lines indicate October 30, 2007. Last daily observations are for December 6, 2007.

The higher spreads appear to reflect both a reassessment of the credit quality of nonfinancial corporations, perhaps induced by concerns about prospects for the economic expansion, and an increase in investors' risk aversion. Bond issuance slowed in November but remained strong. In the leveraged loan market, the pipeline of underwritten loans awaiting syndication diminished early in the period but is still substantial. Secondary market bid prices for leveraged loans dropped significantly in November and are now below their levels in early August. An index of credit default swaps on leveraged syndicated loans (the LCDX) rose about 40 basis points, on net, over the intermeeting period. Broad-based equity indexes were volatile and ended the period down 1½ to 2 percent. Financial stocks were especially hard hit, dropping about 5 percent. The spread between the twelve-month forward trend-earnings-price ratio for S&P 500 firms and a real long-run Treasury yield—a rough measure of the equity premium—widened, consistent with investors pulling back from risk. Option-implied volatility on the S&P 500 remained elevated, at times rising back to near its August peaks. Yield ratios for the municipal bonds moved up sharply on investor concerns about the financial health of bond insurers and possibly the fiscal outlooks for state and local governments.

(7) Credit availability for jumbo-mortgage borrowers continued to be tight, and the spread between the offer rates on prime jumbo fixed-rate mortgages and comparable conforming loans rose from already high levels. Rates on conforming mortgages fell, although not as much as yields on comparable-maturity Treasury securities, implying a widening of spreads. Issuance of residential mortgage-backed securities (RMBS) backed by nonconforming loans continued to fall, while issuance of those backed by conforming mortgages was robust. Secondary markets for non-agency RMBS remained largely inactive. ABX spreads for most tranches widened further for most of the intermeeting period, as investor confidence in subprime RMBS and associated credit ratings continued to wane. However, ABX spreads

dropped sharply late in the period amid reports that a plan to freeze rates on some subprime mortgages was close to agreement. Spreads on agency MBS rose sharply after Fannie Mae and Freddie Mac announced large third-quarter losses, raising concerns about their ability to offer refinancing options to some subprime borrowers. Subsequently, these spreads retraced a substantial part of the increase. (See box "Recent Developments at Housing Intermediaries.")

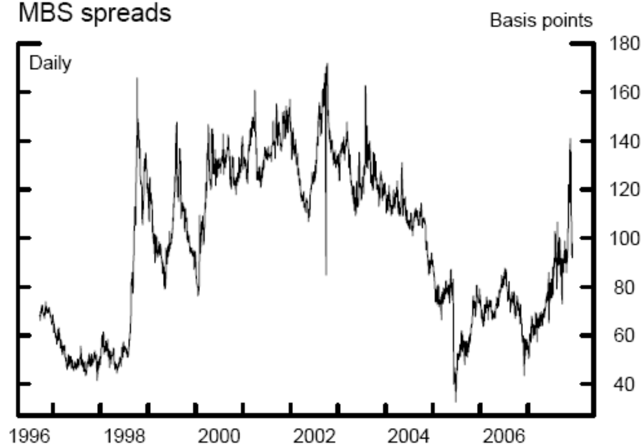
Market Functioning

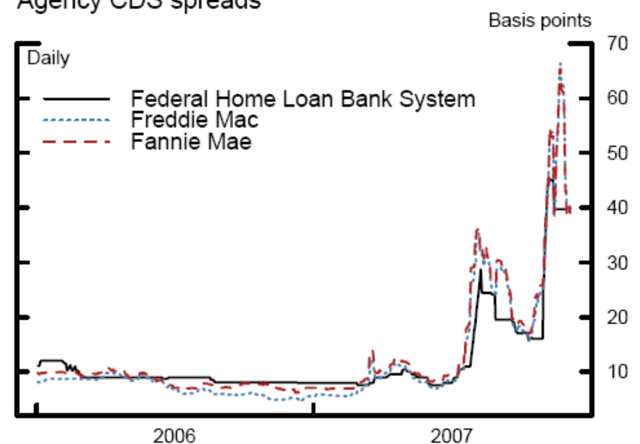
(8) In addition to the short-term funding impairments noted earlier, trading conditions were strained in a range of markets over the intermeeting period. Functioning in the Treasury bill market was notably impaired at times, and bid-asked spreads on bills generally remained very wide. Bid-asked spreads widened substantially less for Treasury coupon securities, and while investors were willing to pay significant premiums to hold on-the-run securities, overall liquidity remained ample in that market. Liquidity was somewhat diminished in corporate markets: Trading volumes declined significantly in November, a proxy for bid-asked spreads on corporate bonds widened, and trades appeared to have a larger-than-normal impact on prices. Bid-asked spreads for leveraged syndicated loans rose quite sharply over the intermeeting period but remained below the peaks reached in early August. Judging from the abnormally wide range of quotes submitted by various dealers for the same reference entities, liquidity and price discovery were also impaired in CDS markets, especially for financial institutions. The subprime RMBS market remained shut with virtually no trading taking place. Strains were also evident at times in the market for agency MBS, where bid-asked spreads widened noticeably following the reports of large losses by the housing GSEs before retracing part of that move more recently. That market may also have been affected by year-end pressures as some investors are reportedly reluctant to hold mortgage products in their portfolios at the

Recent Developments at Housing Intermediaries

Fannie Mae and Freddie Mac reported third-quarter losses of $1.4 billion and $2 billion, respectively, over the intermeeting period, reflecting in part an increase in actual and projected credit losses on the mortgages they guarantee or hold. On the news, credit default swap (CDS) spreads on the two agencies spiked and spreads on Fannie's and Freddie's MBS also rose sharply, albeit against a backdrop of heavy issuance. Both CDS and MBS spreads later retraced a substantial portion of their increases as market sentiment was improved, in part, by news that Freddie Mac was able to raise $6 billion in fresh capital and reports of an industry agreement to delay by several years the reset of interest rates on certain subprime mortgages. Fannie Mae also began the process of raising capital this week, and investor interest was reportedly high. While it is improbable that all of the recent increase in MBS spreads will be passed on to borrowers, particularly because part of the increase may prove transitory, conforming borrowers may face higher spreads of mortgage rates over Treasuries in the future than in recent years. Potentially adding further to the cost of mortgage credit is the fact that Fannie Mae and Freddie Mac have increased the fees they charge to guarantee mortgages pooled into agency MBS. That rise likely reflects waning competition from other securitizers as well as increased actual and projected credit losses. The GSEs also appear to have imposed sizable additional fees on a variety of riskier loans, such as those with loan-to-value ratios greater than 70 percent extended to borrowers with lower credit scores.

Other large mortgage lenders were subject to even stronger market pressures over the intermeeting period. For example, CDS spreads on Countrywide Financial Corporation spiked to very high levels—near 1000 basis points—as investors became concerned about the ability of the thrift to fund its operations and about its overall solvency. Countrywide had borrowed in excess of $50 billion from the Federal Home Loan Bank of Atlanta by the end of the third quarter, putting it close to the limit of 50 percent of borrower assets beyond which Home Loan Banks are typically very reluctant to lend to their members. CDS and debt spreads on the Home Loan Banks also spiked, as investors reportedly became uncomfortable with the concentration of their lending to a few large borrowers (especially Countrywide and Washington Mutual). A higher cost of Home Loan Bank debt has the potential to translate into higher funding costs for their borrowers.





close of their fiscal year. The FX swap market remained strained; bid-asked spreads continued to be larger than usual, the average size of trades diminished, and the capacity for market-making was impaired as some major market makers dropped out.

Foreign Developments

(9) Concerns about financial fragility and its potential impacts on economic growth appeared to affect many foreign financial markets during the intermeeting period. Headline stock price indexes dropped 3 to 5 percent in Europe, Canada, and Japan, on net, with financial stocks registering especially large declines in many cases (Chart 3). Stock prices also fell sharply in many emerging market economies; in China share prices dropped more than 15 percent, reacting in part to reports that additional steps may be taken to cool the domestic economy. Consistent with a pullback by investors from risky positions, yields on long-term government securities in industrial countries fell 10 to 40 basis points, while EMBI+ spreads on sovereign bonds of major emerging market economies widened noticeably. The trade-weighted foreign exchange value of the dollar against major currencies moved up about 1¼ percent, on balance, over the intermeeting period.[3] The dollar rose more than 6½ percent against the Canadian dollar on signs of slower growth in Canada; on December 4, the Bank of Canada announced a 25 basis point cut in its target for the overnight interest rate, citing lower inflation and concerns that effects on Canada from the U.S. sub-prime crisis will last longer than previously thought. The dollar gained about 2½ percent versus the pound; late in the period, the Bank of England also lowered its target policy rate 25 basis points. In contrast, the dollar declined 3¾ percent and 1¼ percent against the yen and euro, respectively, while rising more than 6 percent versus the Australian dollar, as carry trade positions were reported to have been unwound in reaction to heightened financial uncertainties. The index of the dollar's

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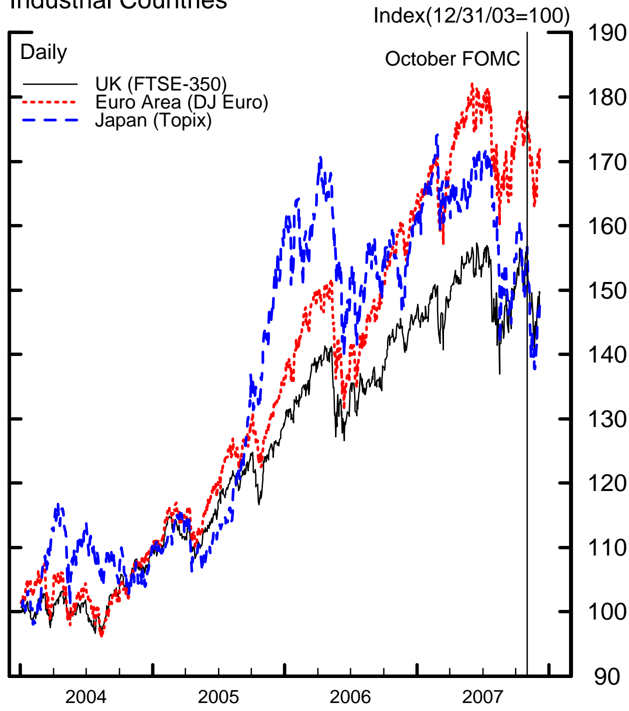
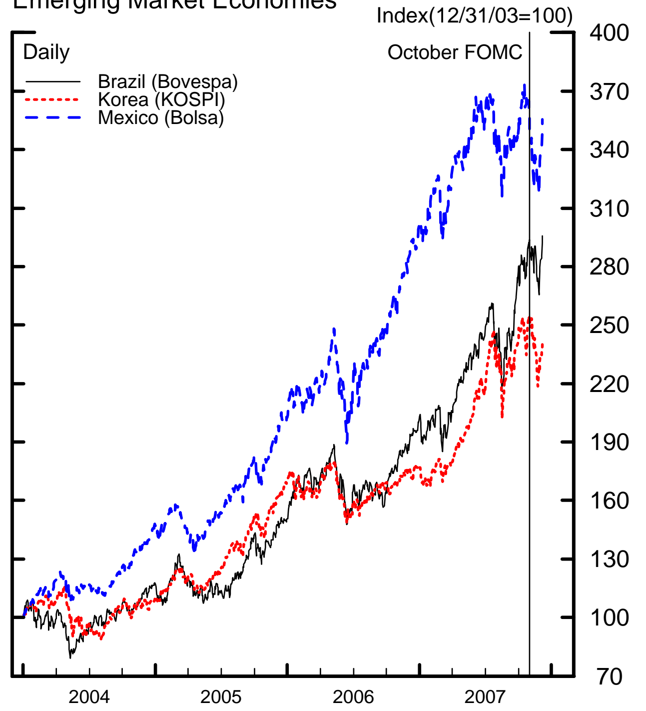
Chart 3
International Financial Indicators

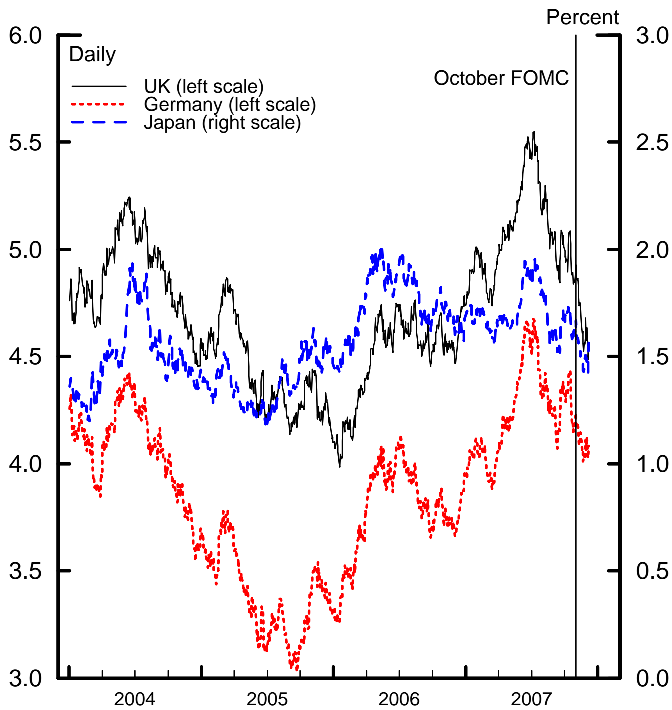
Stock Price Indexes
Industrial Countries



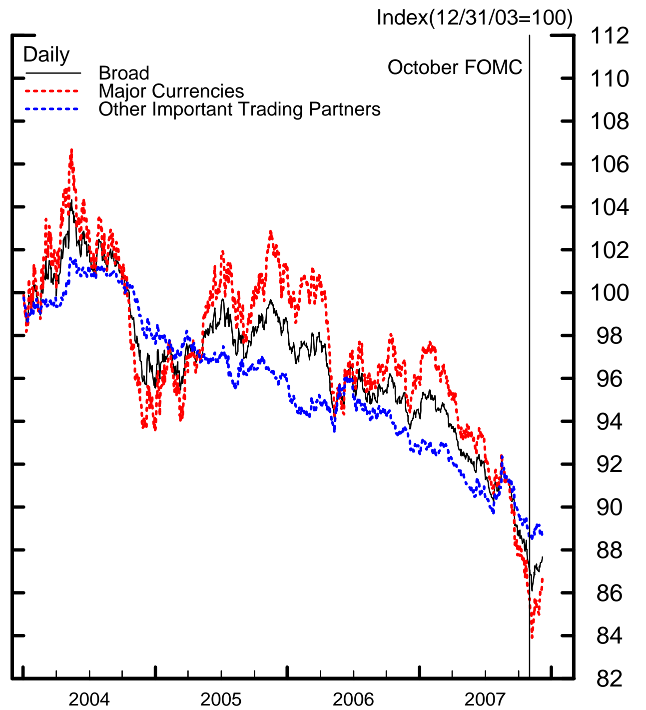
Stock Price Indexes
Emerging Market Economies



Ten-Year Government Bond Yields (Nominal)



Nominal Trade-Weighted Dollar Indexes



Note: Vertical lines indicate October 31, 2007. Last daily observations are for December 6, 2007.

value versus currencies of other important trading partners was about unchanged over the period.

Debt and Money

(10) Domestic nonfinancial sector debt is estimated to be increasing at an annual rate of about 7 percent in the current quarter, almost 2 percentage points less than in the third quarter (Chart 4). The growth of nonfinancial business debt has slowed a bit but remains strong on robust bond issuance and a small rebound in commercial paper. Growth in C&I lending also remained rapid, as some previously committed large syndicated loan deals reportedly were taken onto banks' balance sheets. Household mortgage debt growth is expected to slow this quarter, reflecting the weakness in home prices, declining home sales, and tighter credit conditions for some borrowers. Consumer credit appears to be expanding at a moderate pace this quarter.

(11) M2 advanced at an annual rate of about 5 percent in November. While liquid deposits continued to grow slowly, heightened demand for safety and liquidity appears to have boosted retail money market mutual funds. Small time deposits continued to expand, evidently owing in part to high rates offered by some depository institutions to attract retail deposits. Currency was about flat in November, probably owing at least in part to an ongoing shift by some overseas investors from holding dollars to holding other currencies.

Chart 4
Debt and Money

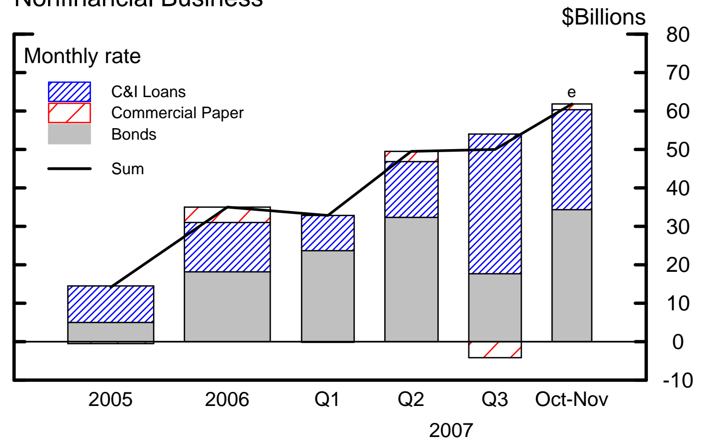
Growth of Debt of Nonfinancial Sectors

Percent, s.a.a.r.

	Total	Business	Household
2006	8.8	9.6	10.3
Q2	8.3	8.6	11.2
Q3	7.2	6.9	8.7
Q4	8.6	11.4	8.4
2007			
Q1	8.0	9.3	7.1
Q2	7.2	10.7	7.6
Q3	8.9	11.9	6.9
Q4p	7.1	9.7	4.9

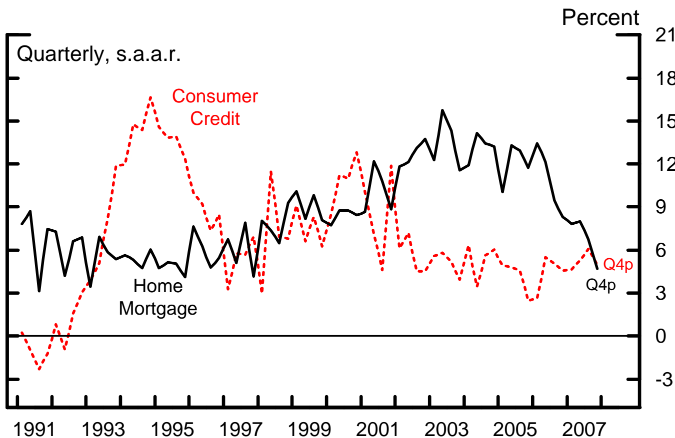
p Projected.

Changes in Selected Components of Debt of Nonfinancial Business*



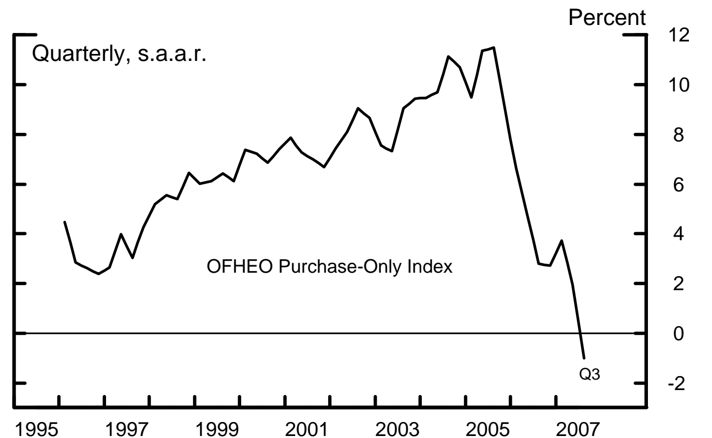
e Estimated.
*Commercial paper and C&I loans are seasonally adjusted, bonds are not.

Growth of Debt of Household Sector

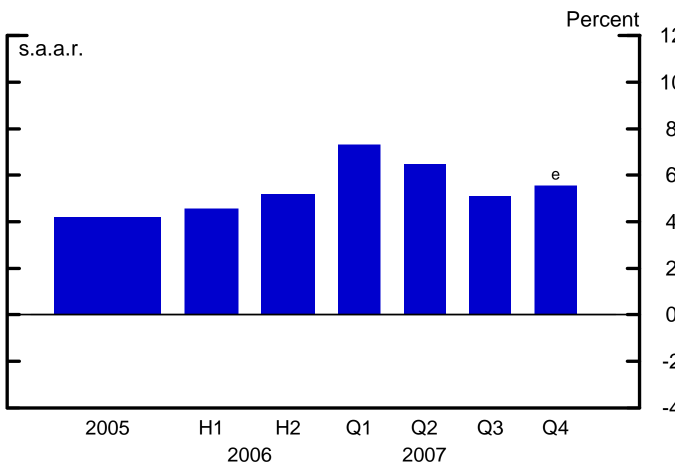


p Projected.

Growth of House Prices

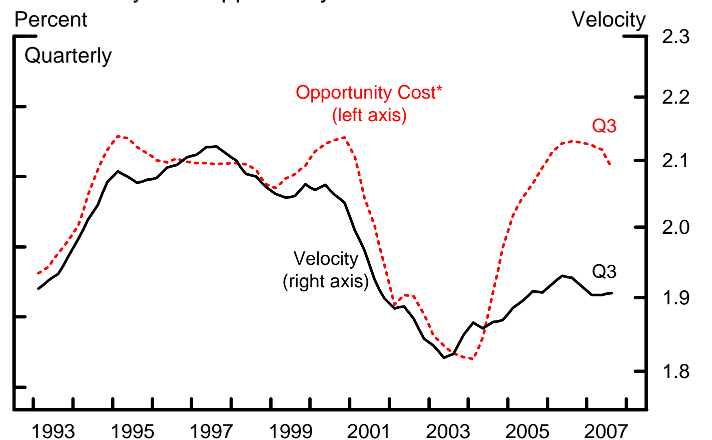


Growth of M2



e Estimated.

M2 Velocity and Opportunity Cost



*Two-quarter moving average.

Economic Outlook through 2009

(12) In response to more restrictive financial conditions, higher oil prices, and weaker-than-expected economic data, the staff has marked down its outlook for the growth of aggregate demand and lowered its assumption for the path of the federal funds rate. The Committee is now assumed to reduce the target rate 25 basis points at the December meeting and then another 25 basis points to 4 percent in the middle of 2009, leaving the federal funds rate 75 basis points lower at the end of the forecast period than in the October Greenbook. Even so, the staff expects longer-term Treasury yields to reverse much of their recent declines as investors' expectations for sharper reductions in the federal funds rate move into alignment with the staff's assumption for monetary policy. As usual, stock prices are anticipated to rise at a 6½ percent annual rate. The real foreign exchange value of the dollar is assumed to depreciate about 1½ percent per year. The price of crude oil is expected to decline gradually but remain above the path in the October Greenbook. Against this backdrop, the pace of economic expansion is projected to slow from about 2½ percent in the second half of 2007 to 1 percent over the first half of 2008 as the housing correction deepens, growth of consumer spending slows further, and business spending decelerates. Thereafter, real GDP growth gradually picks up, returning to around the rate of potential GDP growth in 2009, as the decline in residential investment abates and the drag on spending from tighter credit conditions and higher energy prices wanes. The unemployment rate edges up through the forecast period to 5 percent, a little above the staff's 4¾ percent estimate of the NAIRU. Boosted by the rise in oil prices in recent months, total PCE inflation climbs to nearly a 3½ percent rate in the current quarter but then drops to 2 percent next year and to about 1¾ percent in 2009 as oil prices edge down. Core PCE inflation, which is projected to run about 2¼ percent in the current quarter and 2 percent for

2007 as a whole, inches down to just below 2 percent in 2009 as pressures on resources ease and energy pass-through effects diminish.

Update on Medium-Term Strategies

(13) This section provides an update of the materials on medium-term strategies for monetary policy that were presented in the October Bluebook. 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 down nearly ¾ of a percentage point and now stands at about 2.2 percent, roughly 40 basis points below our estimate of the current real federal funds rate. This revision reflects the extent to which less favorable financial conditions and higher oil prices than previously expected are projected to restrain aggregate demand over the next three years. The three model-based estimates of short-run *r** range from about 1½ to 2½ percent, an interval that is essentially unchanged from October.[4]

(14) Chart 6 depicts optimal control simulations of the FRB/US model using the staff's extension of the Greenbook forecast beyond 2009.[5] 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 federal funds rate.[6] For an inflation goal of 1½ percent (the left-hand set of charts), the optimal path of the funds rate averages a little less

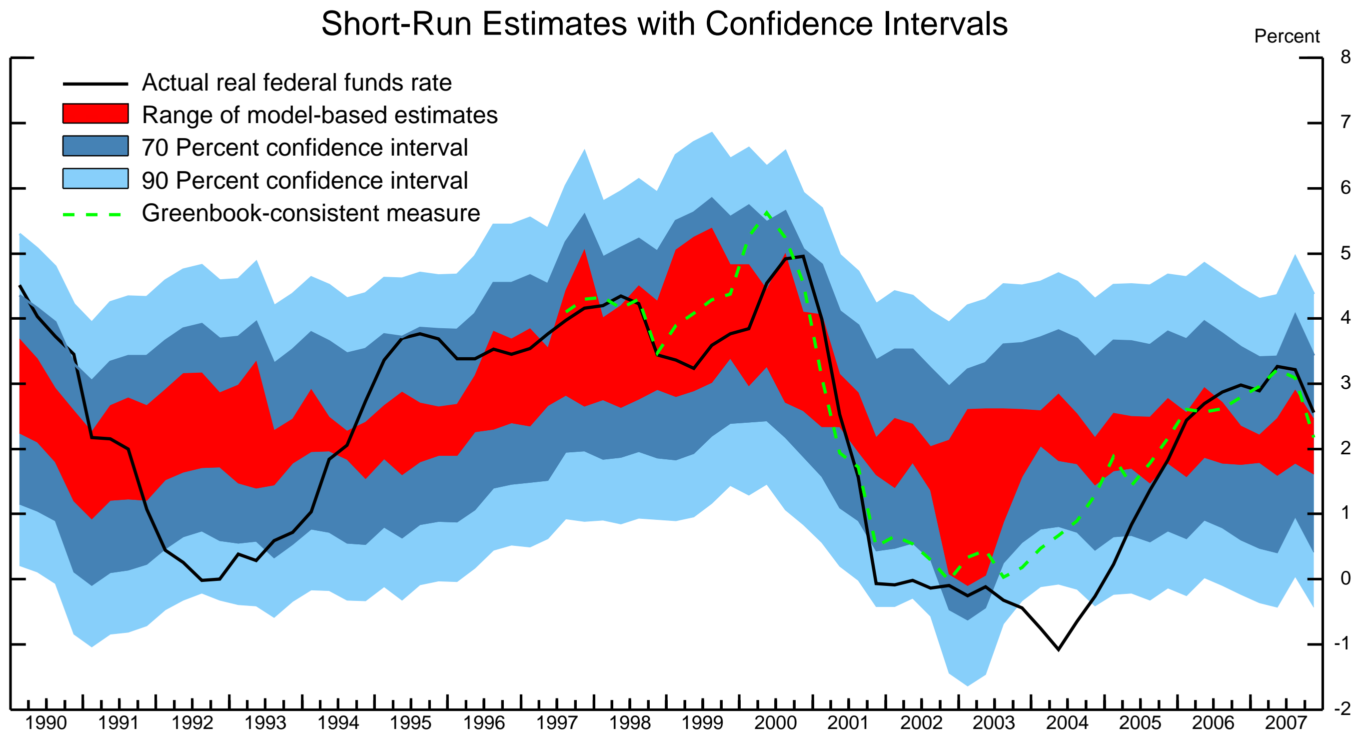
[4] The FRB/US model estimate of short-run *r** has been revised downward by about ¾ percentage point, reflecting the model's projection that some of the near-term weakness in aggregate demand will persist over the next few years.

[5] This extension incorporates the same medium-term assumptions used to generate the illustrative extension discussed in the October Bluebook. The characteristics of the extension are described in the memo to the Committee by Robert Tetlow, "The Extended Greenbook Forecast," December 5, 2007.

[6] 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.

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	2.5	*2.6*
Small structural model	1.7	*1.6*
Large model (FRB/US)	1.6	*2.3*
Confidence intervals for three model-based estimates		
70 percent confidence interval	0.4 - 3.4	
90 percent confidence interval	-0.4 - 4.4	
Greenbook-consistent measure	2.2	*2.9*
Medium-Run Measures		
Single-equation model	2.3	*2.4*
Small structural model	1.8	*1.9*
Confidence intervals for two model-based estimates		
70 percent confidence interval	1.1 - 3.1	
90 percent confidence interval	0.6 - 3.8	
TIPS-based factor model	2.0	*2.1*
Memo		
Actual real federal funds rate	2.6	2.9

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

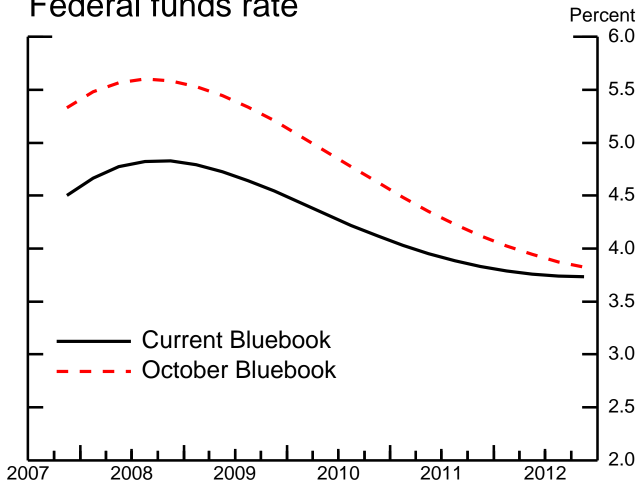
Chart 6

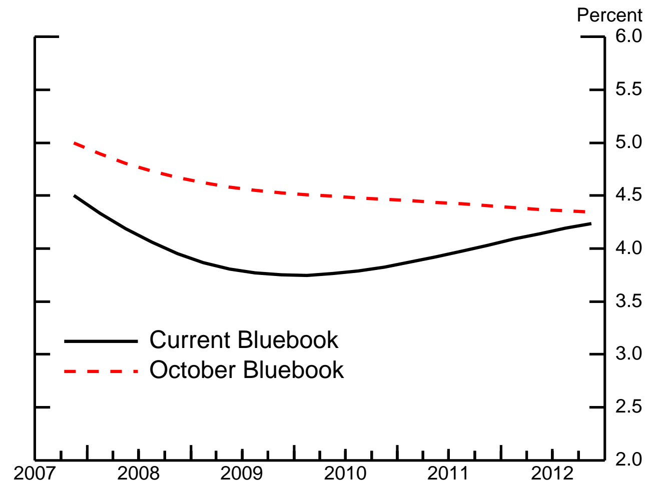
Optimal Policy Under Alternative Inflation Goals

1½ Percent Inflation Goal

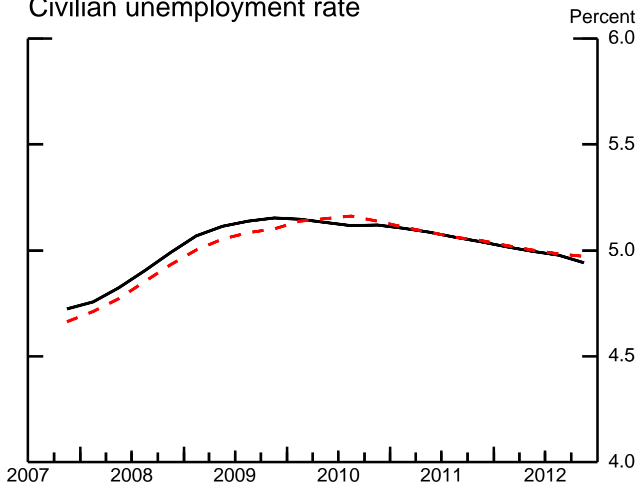
2 Percent Inflation Goal

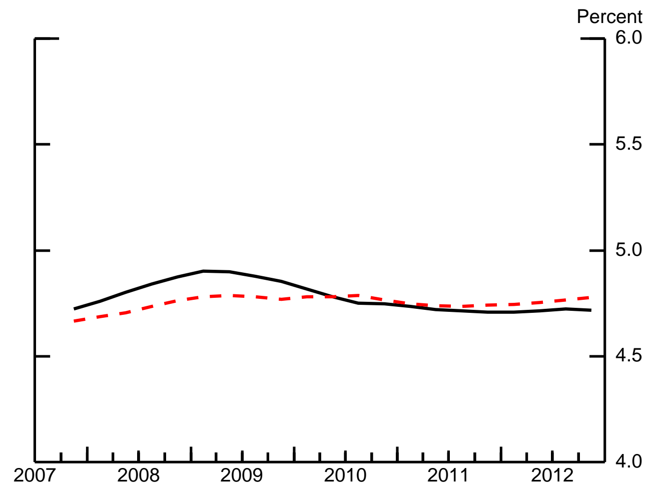
Federal funds rate





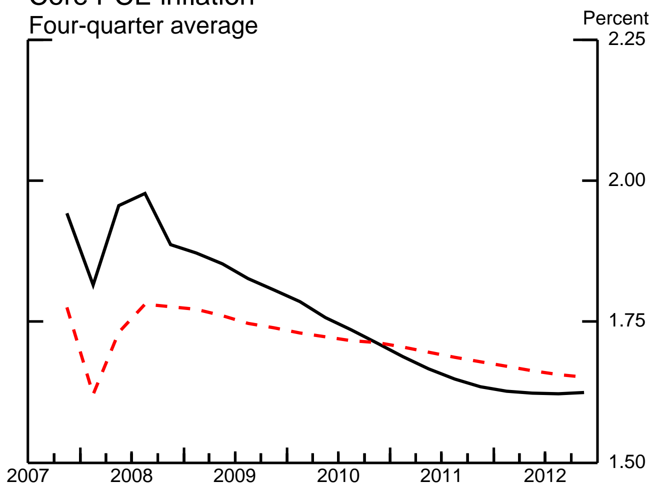
Civilian unemployment rate



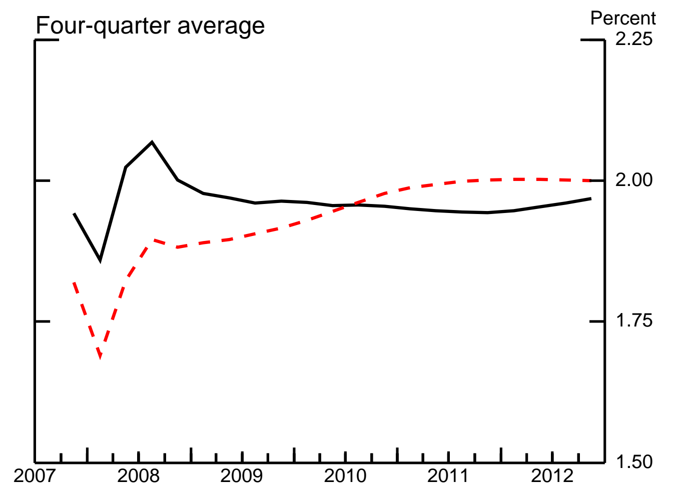


Core PCE inflation

Four-quarter average



Four-quarter average



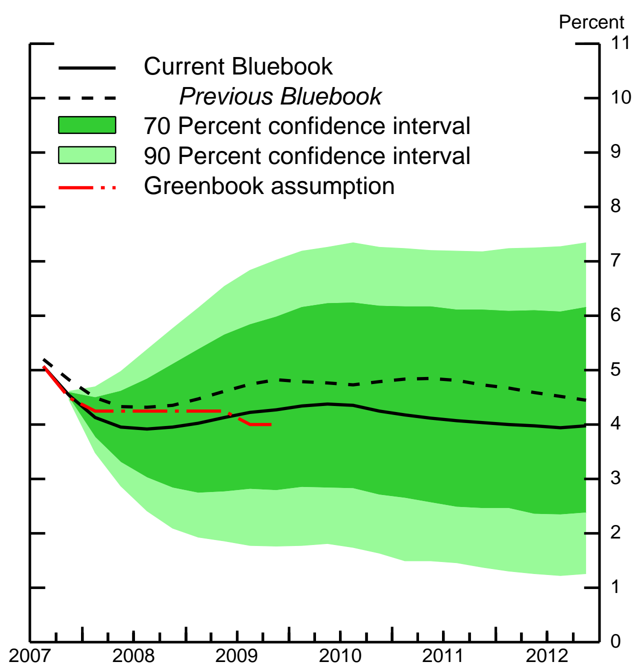
than 4¾ percent through the end of 2009 before declining gradually to a plateau of about 3¾ percent. With an inflation goal of 2 percent (the right-hand set of charts), the optimal funds rate declines to 3¾ percent by the end of 2009 and then—as the effects of the current financial strains continue to unwind—gradually rises to 4¼ percent by the end of 2012. Compared with the October Bluebook, these prescriptions are 50 to 75 basis points lower for the period to the end of 2009, reflecting the same factors that account for the shift in the Greenbook-consistent *r** measure. With either inflation goal, over the next couple of years the path of the unemployment rate is slightly higher than that shown in the last Bluebook and the path for core inflation is about ¼ percentage point higher than in October, reflecting in part the transitory effects of higher oil prices.

(15) As shown in Chart 7, the outcome-based monetary policy rule prescribes a funds rate path that declines to 4 percent by the middle of next year and remains between 4 and 4½ percent throughout the forecast period, about 25 to 75 basis points lower than in the October Bluebook. According to financial market quotes, investors anticipate that the funds rate will decline to 3¼ percent by the end of 2008 and then rise to about 4 percent by the end of 2012. Compared with the previous Bluebook, the 70 percent confidence interval for the funds rate path is a notch lower at the end of 2012, suggesting a modest decline in the market's assessment of the equilibrium real interest rate over the medium run, and is down as much as 50 basis points over the next two years. The near-term prescriptions from the simple policy rules proposed by Taylor (1993, 1999) are little changed since the October Bluebook. The first-difference rule—which does not require estimates of the levels of the output gap or the equilibrium real interest rate—generates a flat funds rate path if the inflation goal is 1½ percent or a 30 basis point cut by mid-2008 if the inflation goal is 2 percent.

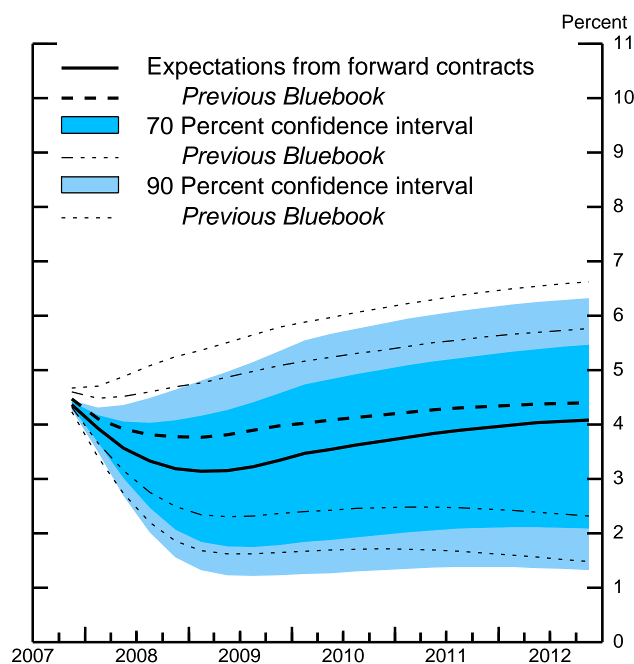
Chart 7

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	
	2008Q1	2008Q2	2008Q1	2008Q2
Taylor (1993) rule	**4.1**	**4.3**	**3.9**	**4.0**
Previous Bluebook	*4.0*	*4.1*	*3.7*	*3.9*
Taylor (1999) rule	**4.2**	**4.2**	**3.9**	**4.0**
Previous Bluebook	*4.1*	*4.2*	*3.9*	*4.0*
Taylor (1999) rule with higher r*	**4.9**	**5.0**	**4.7**	**4.7**
Previous Bluebook	*4.9*	*5.0*	*4.6*	*4.7*
First-difference rule	**4.3**	**4.3**	**4.1**	**3.8**
Previous Bluebook	*5.0*	*5.0*	*4.5*	*4.3*

Memo

	2008Q1	2008Q2
Estimated outcome-based rule	4.1	4.1
Estimated forecast-based rule	4.1	4.0
Greenbook assumption	4.2	4.2
Fed funds futures	4.0	3.6
Median expectation of primary dealers	3.9	3.8

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

Short-Run Policy Alternatives

(16) This Bluebook presents three policy alternatives for the Committee's consideration, summarized in Table 1. Alternative A lowers the target federal funds rate 50 basis points to 4 percent, Alternative B lowers the target 25 basis points to 4¼ percent, and Alternative C leaves the target unchanged at 4½ percent. In the rationale paragraph, all three alternatives suggest that economic growth is slowing, reflecting the intensification of the housing correction. (The characterization of the economic situation will need to be reviewed in light of the employment report for November, which will be released on December 7, the day after the publication of this Bluebook.) Each of the alternatives references the recent softness in indicators of business and consumer spending and acknowledges that strains in financial markets have increased since the last FOMC meeting. The alternatives also note that the stance of monetary policy should promote moderate growth over time, but Alternatives A and C point to increased downside risks to growth. In light of the leveling out of non-energy commodity prices over the intermeeting period, each alternative suggests that "elevated" energy and commodity prices, along with other factors, may put upward pressure on inflation, instead of referring to "recent increases in energy and commodity prices." The alternatives differ regarding assessments of risks to growth and inflation. Alternative A characterizes the downside risks to growth as roughly balancing the upside risks to inflation, repeating the assessment of risks from the October statement. Alternative B avoids an explicit assessment of the balance of risks and instead states that recent developments have increased the uncertainty regarding the outlook. Alternative C concludes that the risks to growth are the predominant policy concern and notes that "future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information." As usual, the Committee could combine language from different alternatives.

Table 1: Alternative Language for the December 2007 FOMC Announcement				
	October FOMC	**Alternative A**	**Alternative B**	**Alternative C**
Policy Decision	1. The Federal Open Market Committee decided today to lower its target for the federal funds rate 25 basis points to 4-1/2 percent.	The Federal Open Market Committee decided today to lower its target for the federal funds rate 50 basis points to 4 percent.	The Federal Open Market Committee decided today to lower its target for the federal funds rate 25 basis points to 4-1/4 percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 4-1/2 percent.
Rationale	2. 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 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.	Incoming information suggests that the housing correction has intensified and that growth in business and consumer spending is softening. Moreover, strains in financial markets have increased in recent weeks. Overall, the outlook for the economy has weakened somewhat, and downside risks to growth have increased. Today's action, combined with the policy actions taken earlier, should help promote moderate growth over time.	Incoming information suggests that economic growth is slowing, reflecting the intensification of the housing correction and some softening in business and consumer spending. Moreover, strains in financial markets have increased in recent weeks. Today's action, combined with the policy actions taken earlier, should help promote moderate growth over time.	As the Committee had anticipated, economic growth appears to be slowing, partly reflecting the intensification of the housing correction. Although strains in financial markets have increased in recent weeks and now pose greater downside risks to growth, the monetary policy actions taken earlier are expected to help promote moderate growth over time.
	3. Readings on core inflation have improved modestly this year, but recent increases in energy and commodity prices, among other factors, may put renewed upward pressure on inflation. In this context, 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 elevated energy and commodity prices, among other factors, may put upward pressure on inflation. In this context, 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 elevated energy and commodity prices, among other factors, may put upward pressure on inflation. In this context, 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 elevated energy and commodity prices, among other factors, may put upward pressure on inflation. In this context, the Committee judges that some inflation risks remain, and it will continue to monitor inflation developments carefully.
Assessment of Risk	4. The Committee judges that, after this action, 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.	The Committee judges that, after this action, 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.	Recent developments, including the deterioration in financial market conditions, have increased the uncertainty surrounding the outlook for economic growth and inflation. 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 views the downside risks to growth as the predominant policy concern. Future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information.

(17) If the Committee judges that tighter financial conditions, higher oil prices, and soft incoming data point to a weaker economic outlook than previously anticipated, then it may deem a more accommodative stance of policy to be appropriate and ease policy 25 basis points, as in **Alternative B**. The real federal funds rate is nearly half a percentage point above its downwardly revised Greenbook-consistent equilibrium value and a touch above the upper end of the range of model-based estimates (Chart 5), suggesting that a reduction in the target funds rate may be required to keep output near its potential. Several policy rules (Chart 7) also suggest that further policy easing would be appropriate. Moreover, members might be concerned about the risk of possible further deterioration in financial conditions, particularly in the run-up to year-end, or about the potential for significant spillovers from the housing sector to the broader economy. If so, they may judge that a policy easing at this meeting might help insure against such developments. At the same time, the Committee may believe that the risks to inflation associated with a 25 basis point reduction in the target federal funds rate are modest, given recent readings on core inflation and the current outlook for prices.

(18) After noting that "economic growth is slowing" and that "strains in financial markets have increased," the statement for Alternative B suggests that the 25 basis point reduction in the target funds rate, together with the two previous policy actions, is likely to help promote moderate growth over time. The statement notes the modest improvement in core inflation this year but indicates that "some inflation risks remain." Rather than provide an explicit assessment of the balance of risks, the statement concludes that uncertainty around the outlook for growth and inflation has increased and that the Committee will "continue to assess the effects of financial and other developments" and act as needed to foster its dual objectives.

(19) Market participants appear to place about two-thirds odds on a 25 basis point reduction in the target at this meeting, with most of the remaining probability

assigned to a 50 basis point move. As a result, short-term interest rates would likely rise modestly in response to Alternative B. However, judging from the Desk's survey of dealers, the statement under Alternative B would likely be read as broadly consistent with market expectations for additional policy easing. Consequently, longer-term interest rates, equity prices, and the foreign exchange value of the dollar probably would be little changed.

(20) If the Committee views the renewed deterioration in financial markets and the sharper contraction in the housing sector as presenting a particularly severe threat to the economic expansion, it might want to lower the target funds rate 50 basis points, as in **Alternative A**. A 50 basis point reduction in the federal funds rate would put the real funds rate close to the Greenbook-consistent measure of its equilibrium value (Chart 5) and thus, under the baseline projection, would be consistent with output returning to its potential in the medium term. A reduction of this size would also be broadly compatible with the optimal policy simulations with a 2 percent inflation objective (Chart 6) and some of the simple policy rules with that goal (Chart 7). Moreover, given the deterioration in term funding markets and increased concerns about balance sheet capacity and counterparty credit risk, the Committee might worry about the potential for substantial additional tightening of banks' lending terms and standards, particularly if it viewed the arrangement of swap lines with foreign central banks and implementation of a Term Auction Facility as unlikely to provide significant relief to funding markets. Members might also see incoming evidence of a deepening contraction in the housing sector, as well as the apparent softening in business and consumer spending, as presenting unacceptably large downside risks to overall economic activity. By contrast, incoming core inflation data have continued to be moderate, and the Committee may see the inflation outlook, and the associated risks, as essentially unchanged. In these circumstances, members might conclude that the weaker modal outlook for growth and significantly

increased downside risks warrant a 50 basis point policy move at this meeting. Members may believe that the Committee would be able to reverse the easing quickly if appropriate.

(21) The draft statement for Alternative A begins with a reference to the further intensification of the housing correction and recent weakening in business and consumer expenditures, and it also mentions increased strains in financial markets. It then notes that the outlook for economic growth has weakened somewhat and, unlike Alternative B, adds that the downside risks to growth have increased. But as in the other alternatives, the statement suggests that the easing in policy should help foster moderate expansion over time. The paragraph regarding inflation is little changed from October. The risk assessment would indicate that the 50 basis point easing brings the risks to inflation and growth roughly into balance. But if the Committee believes that, even after such a move, recent developments in financial markets have increased the uncertainty around the outlook for growth and inflation to such an extent that an assessment is not meaningful, it may wish instead to employ the risk assessment language used in Alternative B.

(22) Investors attach significant odds to both a 50 basis point easing and a 25 basis point reduction in the target funds rate at this meeting, and so the larger move would push very short-term interest rates lower. However, while the magnitude of the surprise with respect to the target funds rate would be similar to that experienced in September, the assessment that the risks to growth and inflation are balanced, which differs notably from the language in the September statement, might temper the reaction in rates further out the term structure. Indeed, if investors find that assessment somewhat persuasive, intermediate- and longer-term interest rates might increase as market participants revised up their outlook for the economy. The equity market might rally modestly in reaction to lower interest rates and an improved

outlook for earnings, and the foreign exchange value of the dollar could even firm a bit if market participants revised up their outlook for the U.S. economy.

(23) If the Committee judges that the current stance of policy is likely to foster sustainable growth and acceptable inflation over time, then it might be inclined to choose **Alternative C**. Members might read the incoming macroeconomic data as broadly consistent with the outlook underlying its October policy decision, including the expectation for a period of relatively slow growth late this year and early next year. Conditions in short-term funding markets have deteriorated notably over the intermeeting period and credit has tightened further for some households and businesses, increasing the downside risks to growth. However, the Committee might feel that the adverse effects of such developments are likely to be limited and that its earlier easing actions—and perhaps arrangement of swap lines with foreign central banks and implementation of a Term Auction Facility—provide ample insurance. Moreover, members may be concerned that the unsettled state of financial markets may make it difficult for Committee to quickly reverse further policy easing, even if the prospects for economic growth improve. And, although core inflation has stayed moderate and the baseline outlook for inflation may be viewed as acceptable, members may view elevated oil and other commodity prices and a weaker dollar as posing large enough upside risks to inflation to make an immediate reduction in the target funds rate problematic. Under these circumstances, the Committee might see maintenance of the current stance of policy for now as appropriate but judge that downside risks to growth have become the dominant concern. Such an approach would leave the Committee well placed to see whether financial market strains diminish significantly after year-end and to accumulate additional information on the outlook for growth and inflation before deciding whether further policy easing should be implemented.

(24) The proposed statement for Alternative C acknowledges that economic growth appears to be slowing but indicates explicitly that the softening is broadly in line with what the Committee had anticipated. It then notes the increase in financial market strains and acknowledges that they pose greater downside risk to growth, but suggests that the monetary policy easing already in place is likely to promote moderate expansion over time. The wording on inflation closely follows the October statement. The draft statement then suggests that downside risks to growth are the predominant concern and concludes with the language used in the August and earlier statements that "future policy adjustments will depend on the outlook for both inflation and economic growth, as implied by incoming information."

(25) Market participants would be very surprised if the Committee kept the target at 4½ percent at this meeting. Despite the assessment that downside risks to growth predominate, the absence of action at this meeting and the overall tone of the policy statement would likely suggest to investors that the Committee does not expect to lower rates to the extent currently implied by money market futures quotes, so short-term interest rates would increase notably on the announcement. However, the rise in longer-term rates might be tempered if investors revised down their outlook for economic activity and inflation. The foreign exchange value of the dollar would likely appreciate somewhat with the backup in interest rates. Equity prices probably would fall.

Money and Debt Forecasts

(26) Under the Greenbook projection, M2 is forecast to grow at about a 5½ percent rate on average in the current quarter, down about ¼ percentage point from the previous forecast, reflecting in part weaker nominal GDP in the fourth quarter. Over 2008, M2 is projected to expand at about a 4½ percent pace, a bit above the rate of growth of nominal GDP and slightly faster than the forecast in the

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

		50 bp Easing	25 bp Easing	No Change	Greenbook Forecast*
Monthly Growth Rates					
	Jul-07	4.1	4.1	4.1	4.1
	Aug-07	10.6	10.6	10.6	10.6
	Sep-07	5.2	5.2	5.2	5.2
	Oct-07	4.0	4.0	4.0	4.0
	Nov-07	5.1	5.1	5.1	5.1
	Dec-07	6.2	6.0	5.8	6.0
	Jan-08	5.7	5.1	4.5	5.1
	Feb-08	4.9	4.1	3.3	4.1
	Mar-08	5.2	4.5	3.8	4.5
	Apr-08	5.7	5.1	4.5	5.1
	May-08	5.2	4.8	4.3	4.8
	Jun-08	4.3	3.9	3.5	3.9
Quarterly Growth Rates					
	2007 Q1	7.3	7.3	7.3	7.3
	2007 Q2	6.5	6.5	6.5	6.5
	2007 Q3	5.1	5.1	5.1	5.1
	2007 Q4	5.5	5.5	5.5	5.5
	2008 Q1	5.5	5.0	4.5	5.0
	2008 Q2	5.3	4.7	4.1	4.7
Annual Growth Rates					
	2007	6.2	6.2	6.2	6.2
	2008	4.9	4.5	4.2	4.5
	2009	4.2	4.2	4.2	4.4
Growth From	To				
Nov-07	Mar-08	5.6	5.0	4.4	5.0
Nov-07	Jun-08	5.4	4.8	4.3	4.8
2007 Q2	2007 Q4	5.4	5.4	5.3	5.4
2007 Q2	2008 Q2	5.5	5.2	4.9	5.2

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

October Bluebook. The upward revision reflects lower opportunity costs, given the reduction in the federal funds rate assumed in this Greenbook, as well as somewhat greater demand for monetary assets in view of the turbulence in financial markets. M2 is expected to continue to advance at around 4½ percent pace in 2009, a bit above nominal GDP growth, supported by the additional policy easing assumed in that year.

(27) 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 an 8 percent pace in the second half of 2007 before slowing sharply to 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. The staff expects household debt growth to fall to 6 percent at an annual rate in the second half of this year and to 3½ percent in 2008 and to 3¼ percent in 2009, which would be the slowest annual rate of growth in real terms since 1991. The slowdown reflects a moderation in mortgage debt in response to declining home prices and a reduction in home sales. Consumer credit is expected to advance at a modest pace. 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 continues to abate.

Directive

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

Directive Wording

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee in the immediate future seeks conditions in reserve markets consistent with MAINTAINING/INCREASING/reducing the federal funds rate AT/to an average of around ________ ~~4 ½~~percent.

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	4.22	2.39	2.99	3.22	4.77	4.34	2.90	3.30	4.01	4.32	1.05	1.56	6.09	4.27	5.96	5.40
Monthly																
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
Oct 07	4.76	3.80	4.00	4.16	5.08	4.70	3.99	4.16	4.63	4.85	2.05	2.23	6.48	4.33	6.38	5.68
Nov 07	4.49	3.70	3.36	3.58	4.97	4.48	3.36	3.67	4.30	4.58	1.41	1.83	6.40	4.40	6.21	5.48
Weekly																
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	4.76	3.87	3.95	4.07	4.96	4.71	3.81	4.00	4.50	4.74	1.88	2.10	6.37	4.27	6.33	5.66
Nov 2 07	4.67	3.93	3.87	4.00	4.80	4.51	3.82	4.00	4.50	4.73	1.82	2.06	6.39	4.34	6.26	5.57
Nov 9 07	4.36	3.73	3.52	3.78	4.86	4.49	3.61	3.87	4.44	4.71	1.58	1.93	6.41	4.47	6.24	5.50
Nov 16 07	4.53	3.81	3.40	3.65	4.90	4.49	3.47	3.76	4.36	4.63	1.50	1.89	6.42	4.46	6.24	5.50
Nov 23 07	4.51	3.67	3.24	3.41	5.04	4.49	3.13	3.51	4.21	4.52	1.24	1.73	6.39	4.39	6.20	5.42
Nov 30 07	4.55	3.58	3.10	3.35	5.15	4.45	3.07	3.43	4.12	4.42	1.20	1.68	6.37	4.32	6.10	5.43
Dec 7 07	--	3.26	3.07	3.26	5.20	4.42	2.93	3.33	4.12	4.45	1.19	1.73	--	--	5.96	5.46
Daily																
Nov 20 07	4.51	3.65	3.25	3.41	5.01	4.50	3.18	3.54	4.23	4.54	1.26	1.75	6.41	--	--	--
Nov 21 07	4.50	3.55	3.09	3.28	5.06	4.47	3.03	3.45	4.20	4.51	1.20	1.72	6.41	--	--	--
Nov 22 07	4.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov 23 07	4.56	3.68	3.23	3.39	5.07	4.46	3.11	3.49	4.19	4.49	1.20	1.70	6.38	--	--	--
Nov 26 07	4.62	3.60	3.14	3.34	5.12	4.47	2.94	3.30	4.01	4.32	1.05	1.56	6.23	--	--	--
Nov 27 07	4.39	3.68	3.16	3.37	5.11	4.48	3.07	3.42	4.13	4.43	1.18	1.67	6.36	--	--	--
Nov 28 07	4.53	3.54	3.05	3.38	5.16	4.42	3.20	3.53	4.20	4.48	1.32	1.77	6.43	--	--	--
Nov 29 07	4.55	3.40	2.99	3.30	5.16	4.44	3.09	3.44	4.12	4.42	1.22	1.68	6.40	--	--	--
Nov 30 07	4.66	3.67	3.15	3.37	5.20	4.46	3.06	3.44	4.16	4.47	1.22	1.71	6.44	--	--	--
Dec 3 07	4.52	3.64	3.06	3.28	5.23	4.46	2.91	3.31	4.08	4.41	1.15	1.67	6.41	--	--	--
Dec 4 07	4.50	3.16	3.07	3.22	5.23	4.46	2.90	3.30	4.08	4.41	1.17	1.70	6.42	--	--	--
Dec 5 07	4.31	3.16	3.07	3.24	5.18	4.34	2.90	3.31	4.11	4.45	1.22	1.78	6.50	--	--	--
Dec 6 07	4.47 p	3.09	3.09	3.29	5.17	--	3.03	3.41	4.20	4.54	1.33	1.85	--	--	--	--

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

MFMA

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-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	3.3	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.	0.7	4.0	4.8
Nov. e	-4.7	5.1	7.3
Levels ($billions):			
Monthly			
2007-June	1366.9	7250.0	5883.1
July	1369.8	7274.5	5904.7
Aug.	1370.2	7338.9	5968.7
Sep.	1369.5	7370.8	6001.3
Oct.	1370.3	7395.6	6025.3
Weekly			
2007-Oct. 1	1356.4	7384.0	6027.6
8	1374.2	7385.1	6010.9
15	1374.6	7372.7	5998.1
22	1358.3	7382.9	6024.6
29	1364.5	7427.1	6062.6
Nov. 5	1392.8	7406.4	6013.6
12	1371.6	7403.0	6031.4
19p	1351.4	7424.1	6072.7
26p	1355.0	7464.6	6109.6

p preliminary
e estimated

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

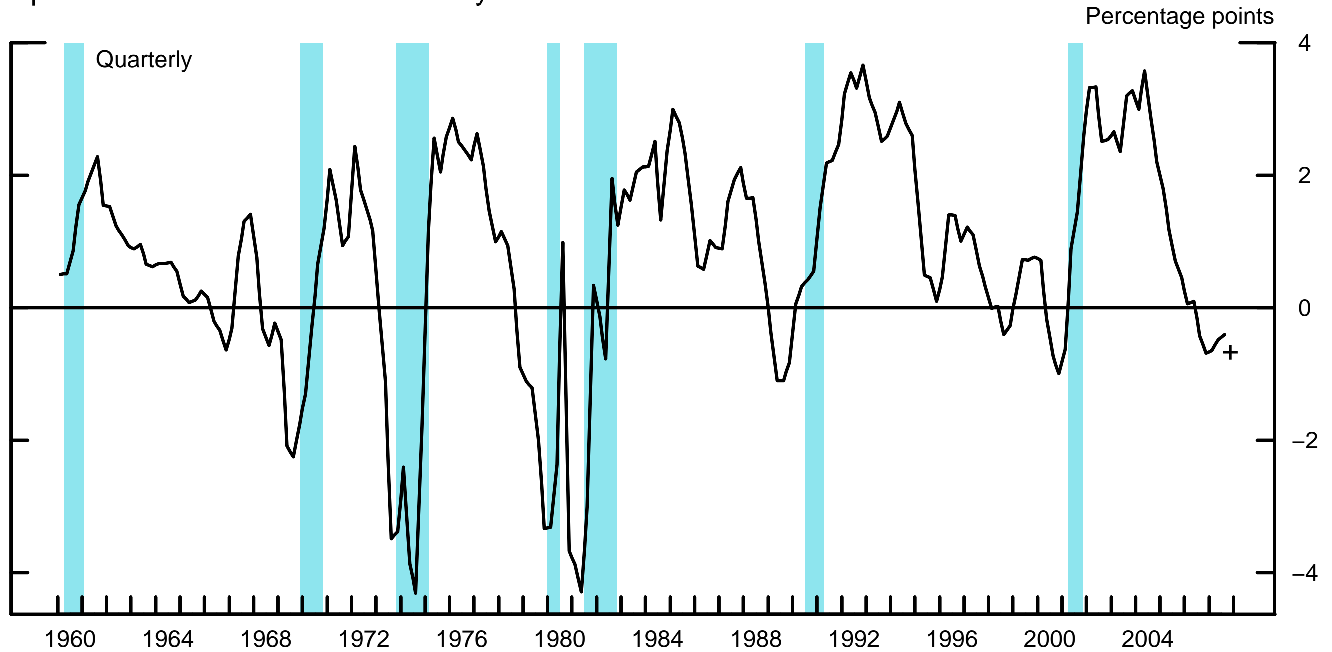
December 6, 2007

	Treasury Bills			Treasury Coupons						Federal Agency	Net change total	Net RPs [5]		
				Net Purchases [3]										
	Net Purchases [2]	Redemptions (-)	Net Change	< 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 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
Oct	---	---	---	---	---	---	---	---	---	---	---	3,000	-940	2,060
Nov	---	---	---	---	---	---	---	---	---	---	---	411	6,906	7,318
2007 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
Oct 31	---	---	---	---	---	---	---	---	---	---	---	2,131	---	2,131
Nov 7	---	---	---	---	---	---	---	---	---	---	---	412	2,000	2,412
Nov 14	---	---	---	---	---	---	---	---	---	---	---	-457	3,000	2,543
Nov 21	---	---	---	---	---	---	---	---	---	---	---	4,691	429	5,119
Nov 28	---	---	---	---	---	---	---	---	---	---	---	-2,804	3,714	911
Dec 5	---	---	---	---	---	---	---	---	---	---	---	-10,140	6,857	-3,283
2007 Dec 6	---	5,000	-5,000	---	---	---	---	---	---	---	-5,000	7,211	-8,000	-789
Intermeeting Period														
Oct 31-Dec 6	---	5,000	-5,000	---	---	---	---	---	---	---	-5,000	-7,533	8,000	467
Memo: LEVEL (bil. $)														
Dec 6			262.0	107.3	234.7	81.9	88.8		512.7	---	774.7	-10.9	20.0	9.1

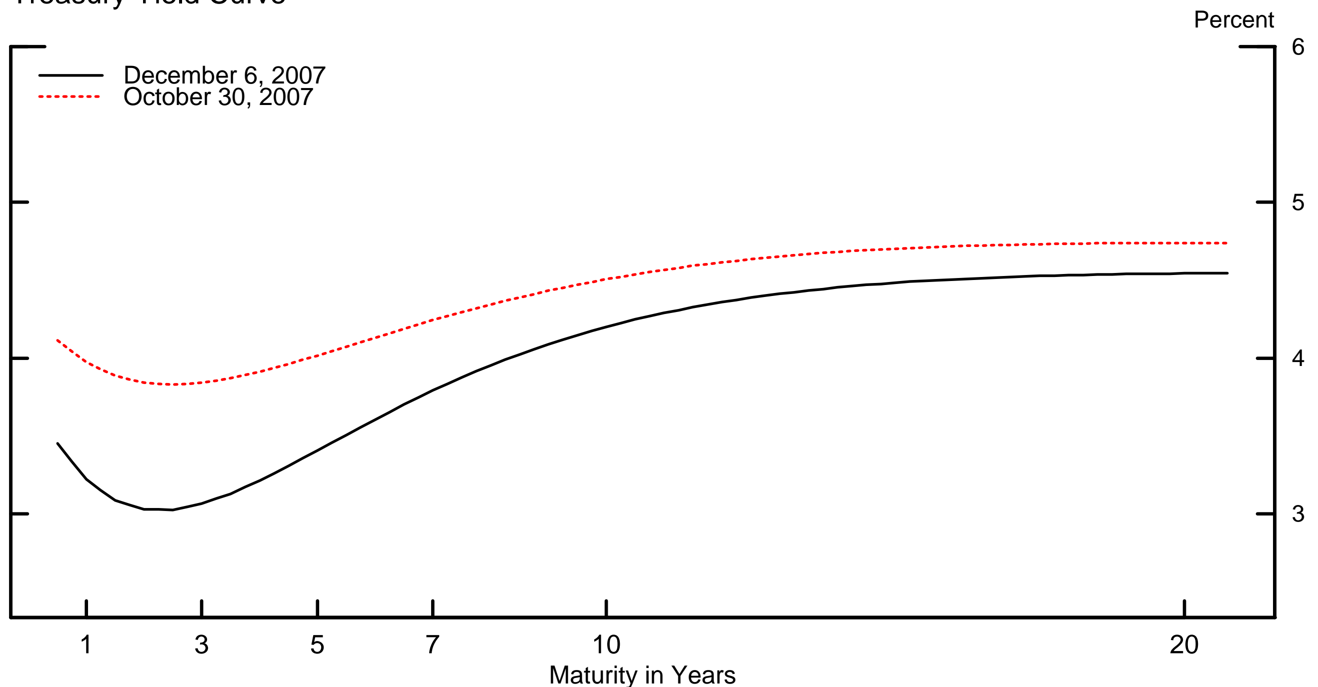
1. Change from end-of-period to end-of-period. Excludes changes in compensation for the effects of inflation on the principal of inflation-indexed securities.
2. Outright purchases less outright sales (in market and with foreign accounts).
3. Outright purchases less outright sales (in market and with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

Treasury Yield Curve

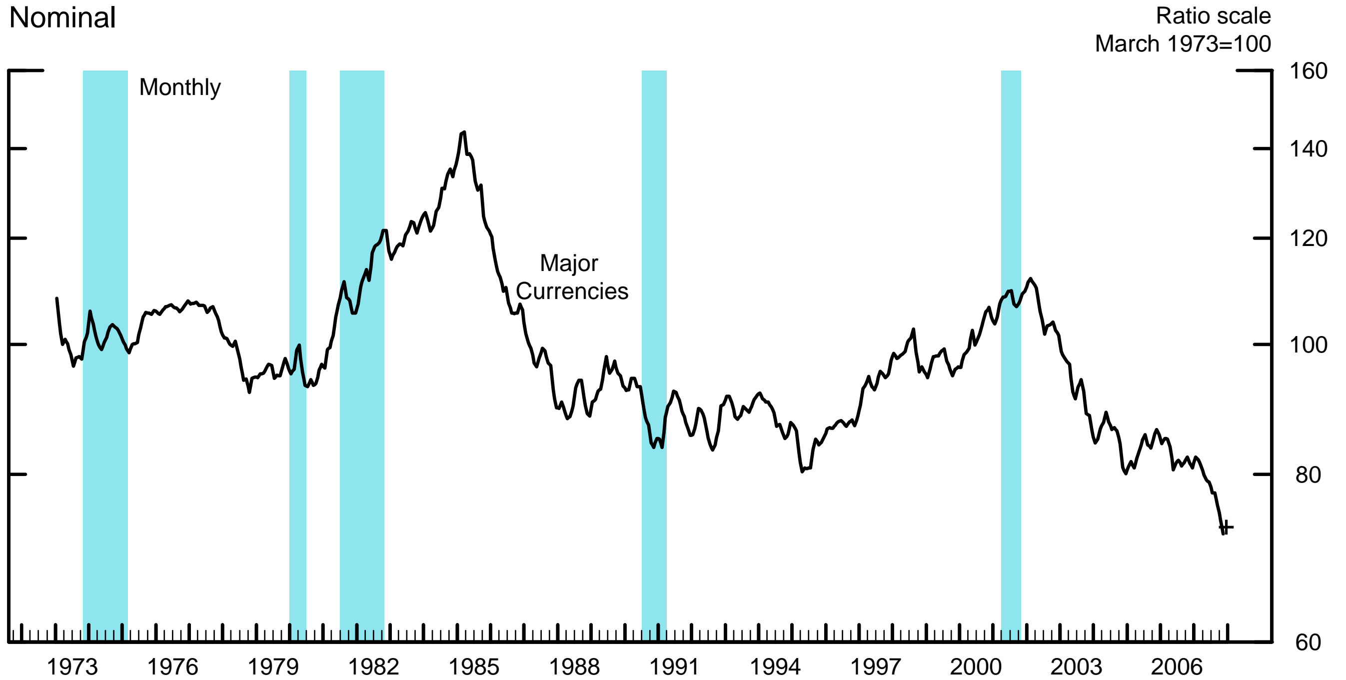


+ Denotes most recent weekly value.
Note. Blue shaded regions denote NBER−dated recessions.

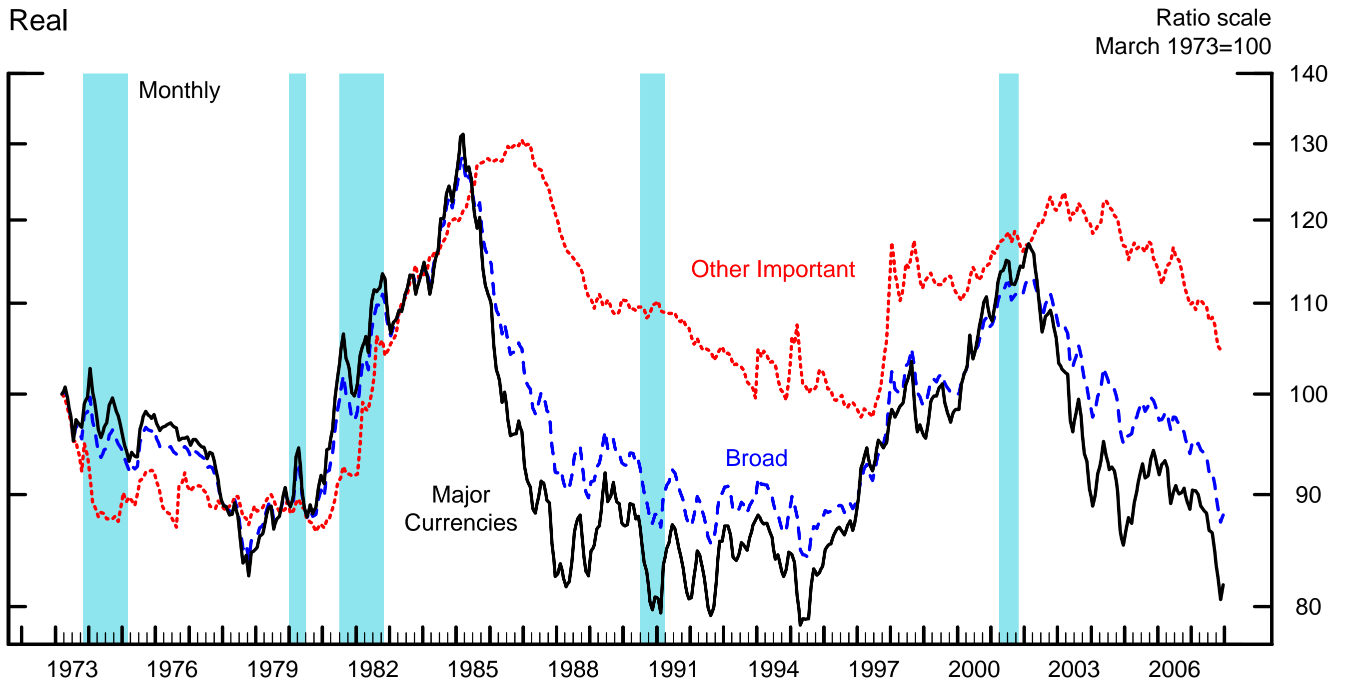


*Smoothed yield curve estimated from off−the−run Treasury coupon securities. Yields shown are those on notional par Treasury securities with semi−annual coupons.

Dollar Exchange Rate Indexes



+ Denotes most recent weekly value.

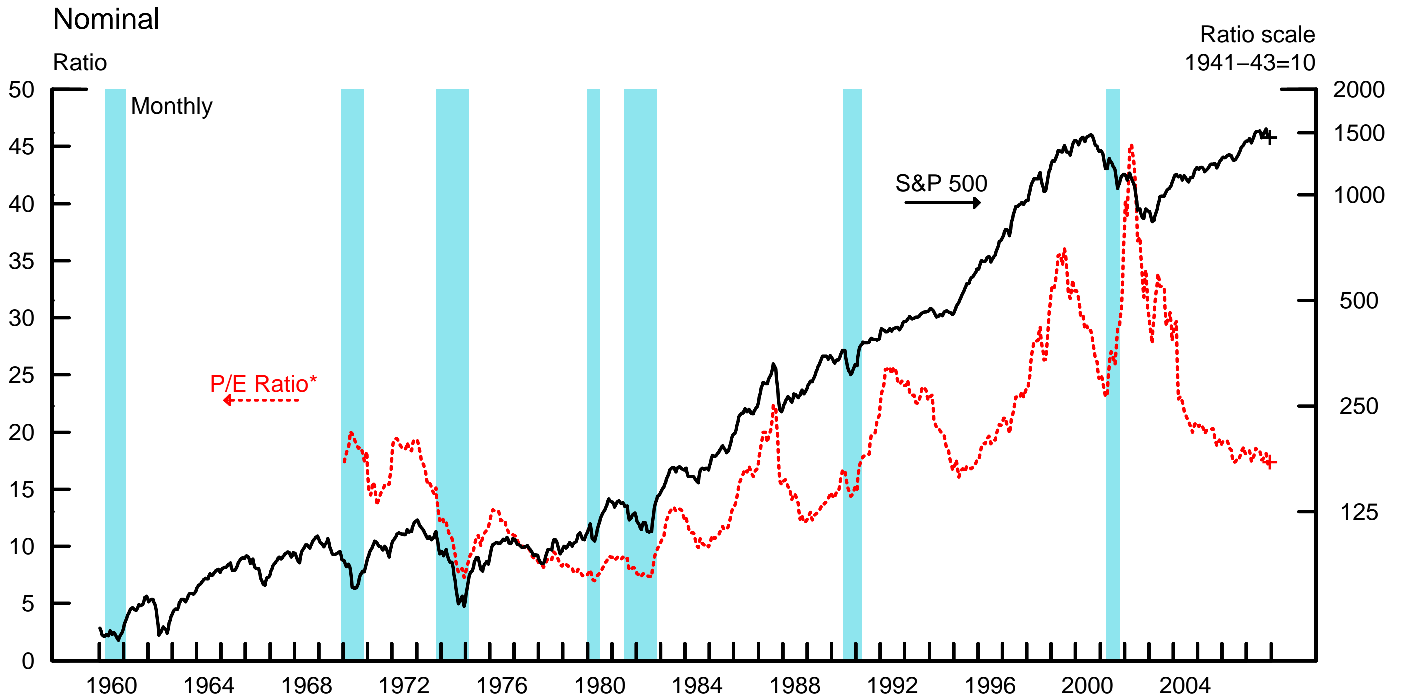


Note. The major currencies index is the trade−weighted average of currencies of the euro area, Canada, Japan, the U.K., Switzerland, Australia, and Sweden. The other important trading partners index is the trade−weighted average of currencies of 19 other important trading partners. The Broad index is 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.

Appendix C Chart 3

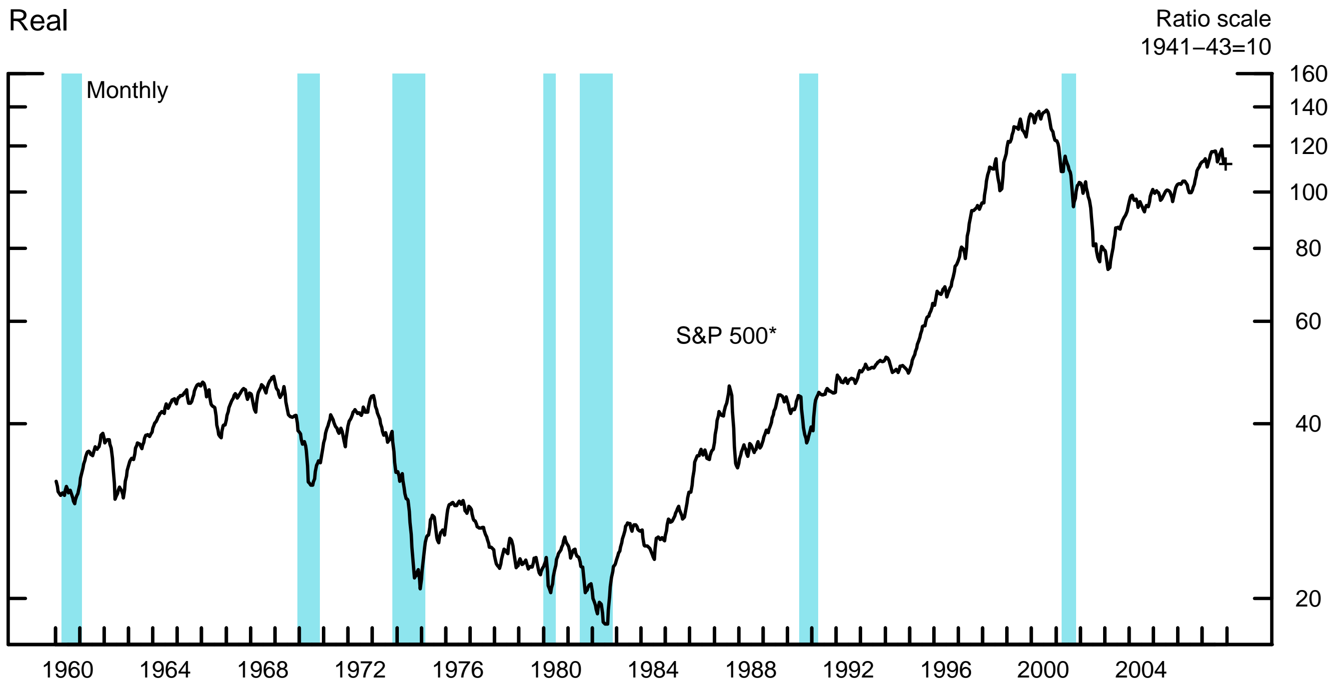
Stock Indexes

Nominal



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

Real

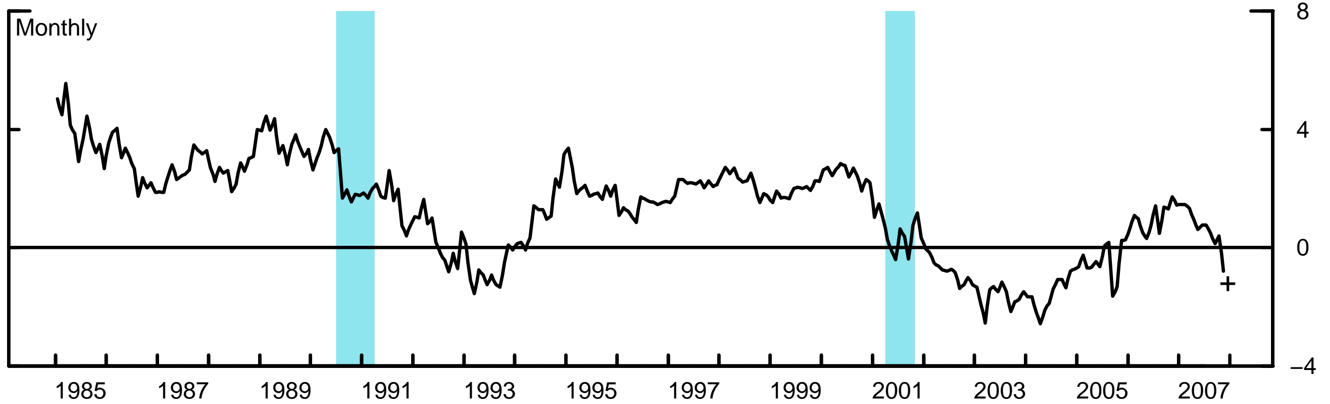


* Deflated by the CPI.
+ Denotes most recent weekly value.
Note. Blue shaded regions denote NBER−dated recessions.

Appendix C Chart 4

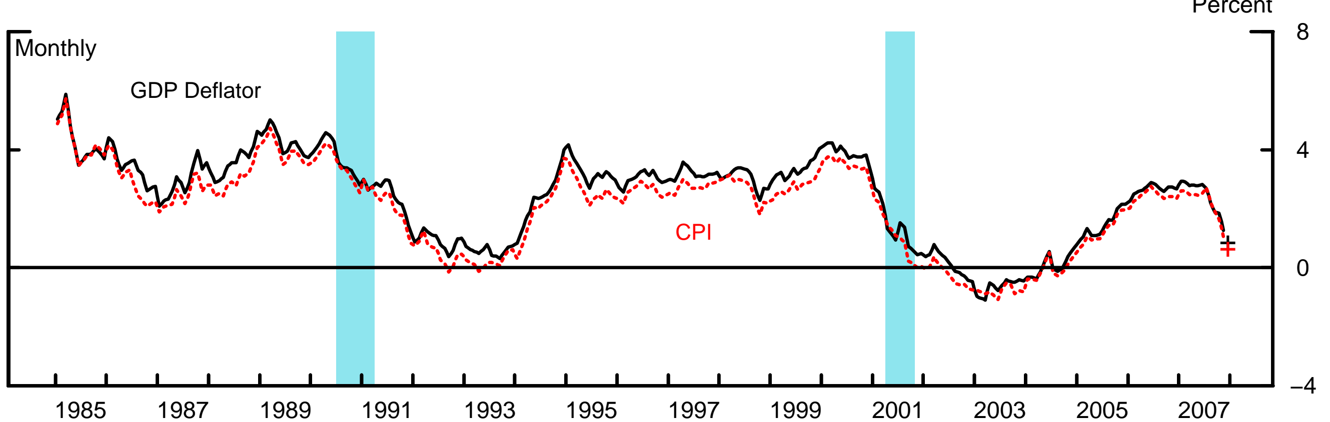
One−Year Real Interest Rates

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



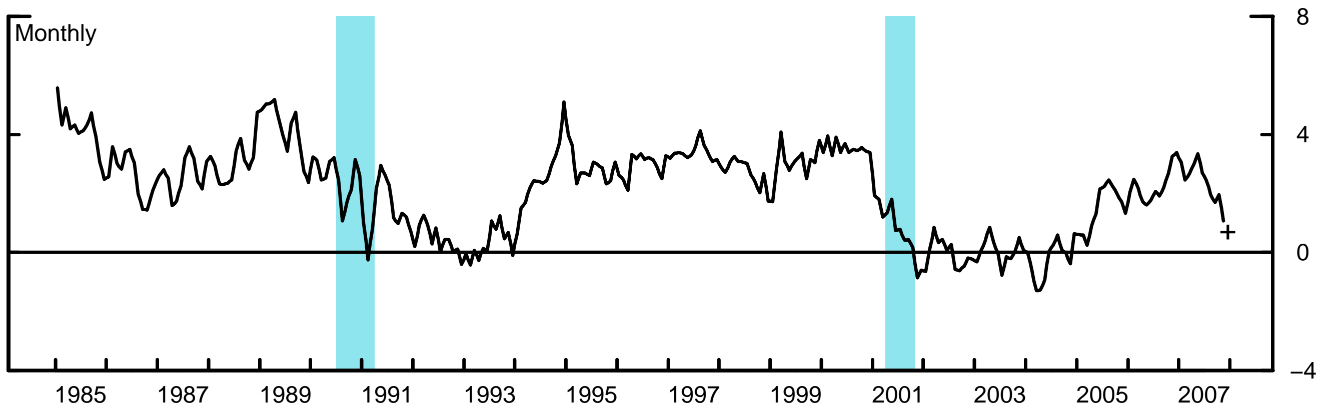
* Mean value of respondents.

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



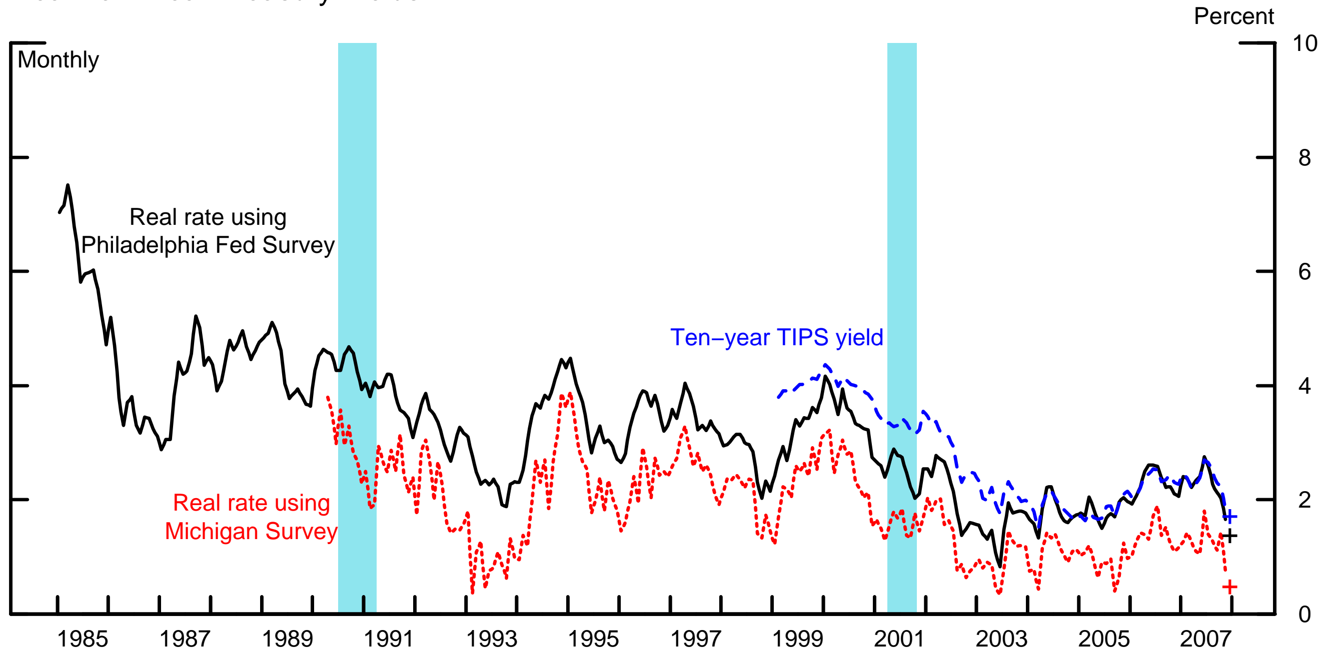
* ASA/NBER quarterly survey until 1990:Q1; Philadelphia Federal Reserve Bank Survey of Professional Forecasters thereafter. Median value of respondents.

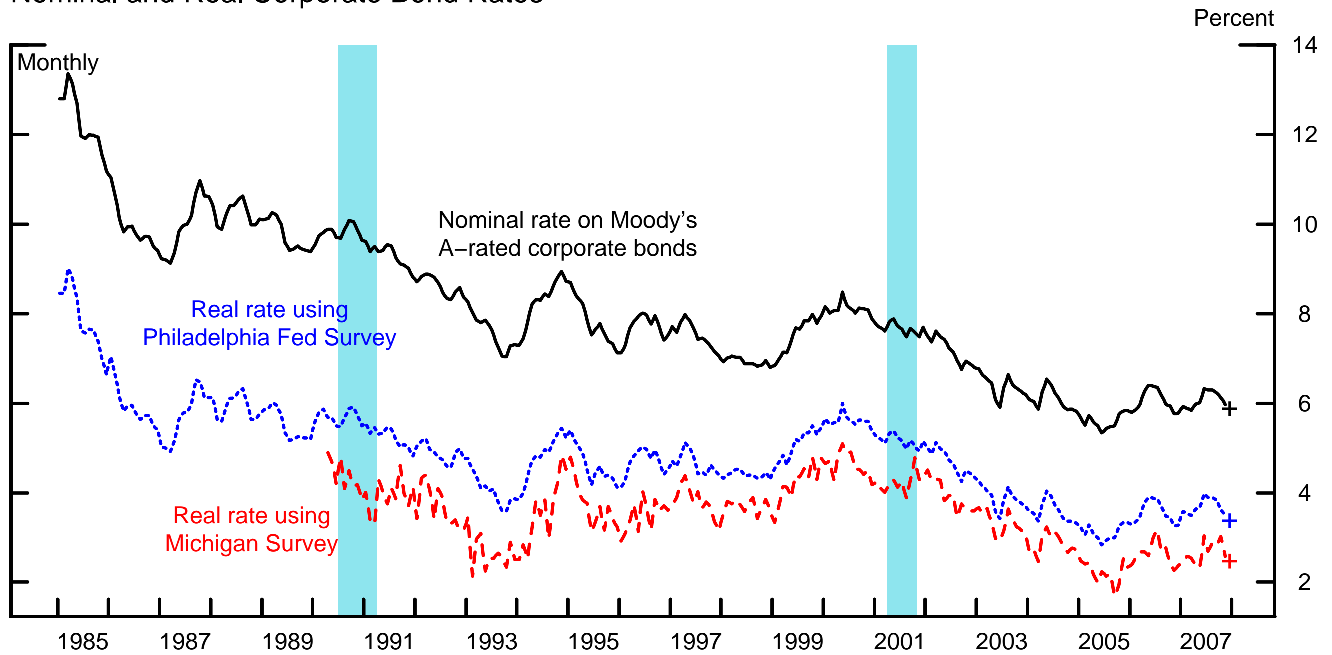
One−Year Treasury Constant Maturity Yield Less Change in the Core CPI from Three Months Prior



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

Long–Term Real Interest Rates*





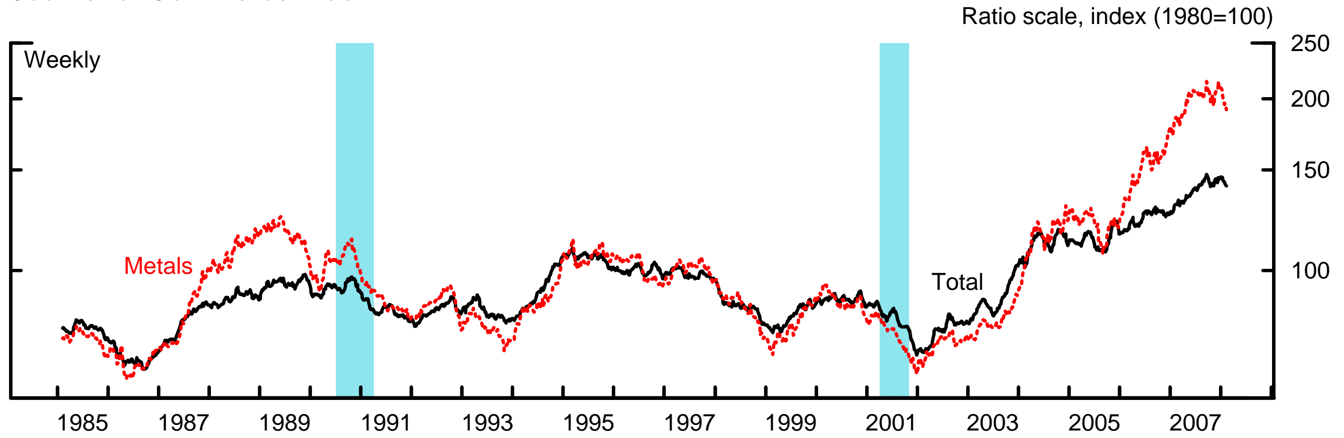
* For real rates, measures using the Philadelphia Fed Survey employ the ten–year inflation expectations from the Blue Chip Survey until April 1991 and the Philadelphia Federal Reserve Bank Survey of Professional Forecasters thereafter (median value of respondents). Measures using the Michigan Survey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

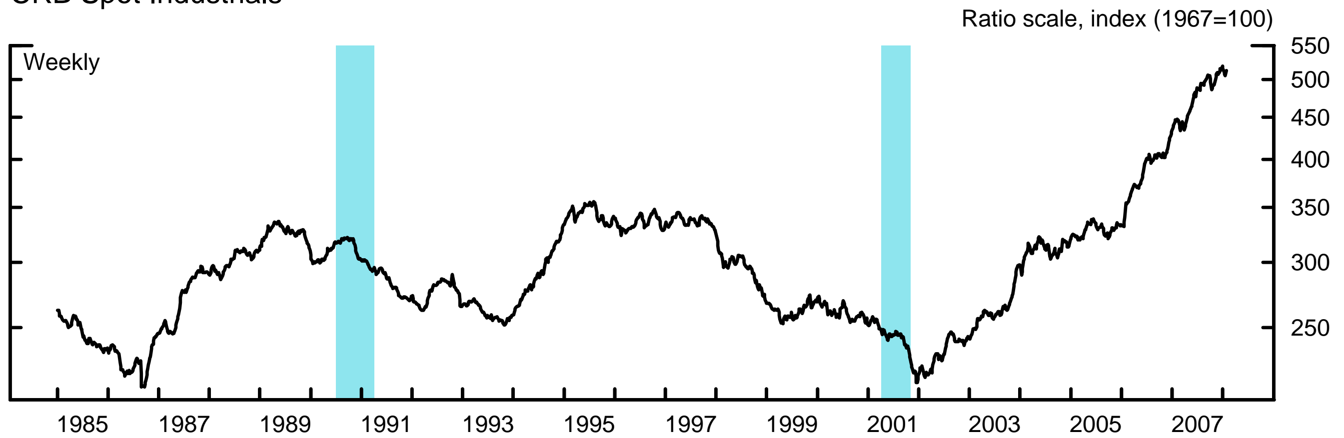
Note. Blue shaded regions denote NBER–dated recessions.

Commodity Price Measures

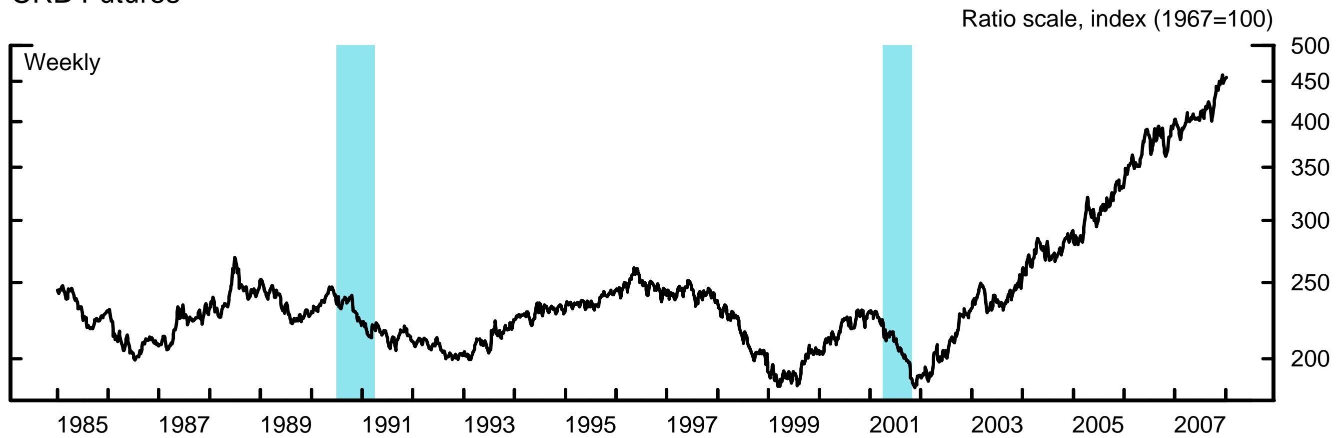
Journal of Commerce Index



CRB Spot Industrials



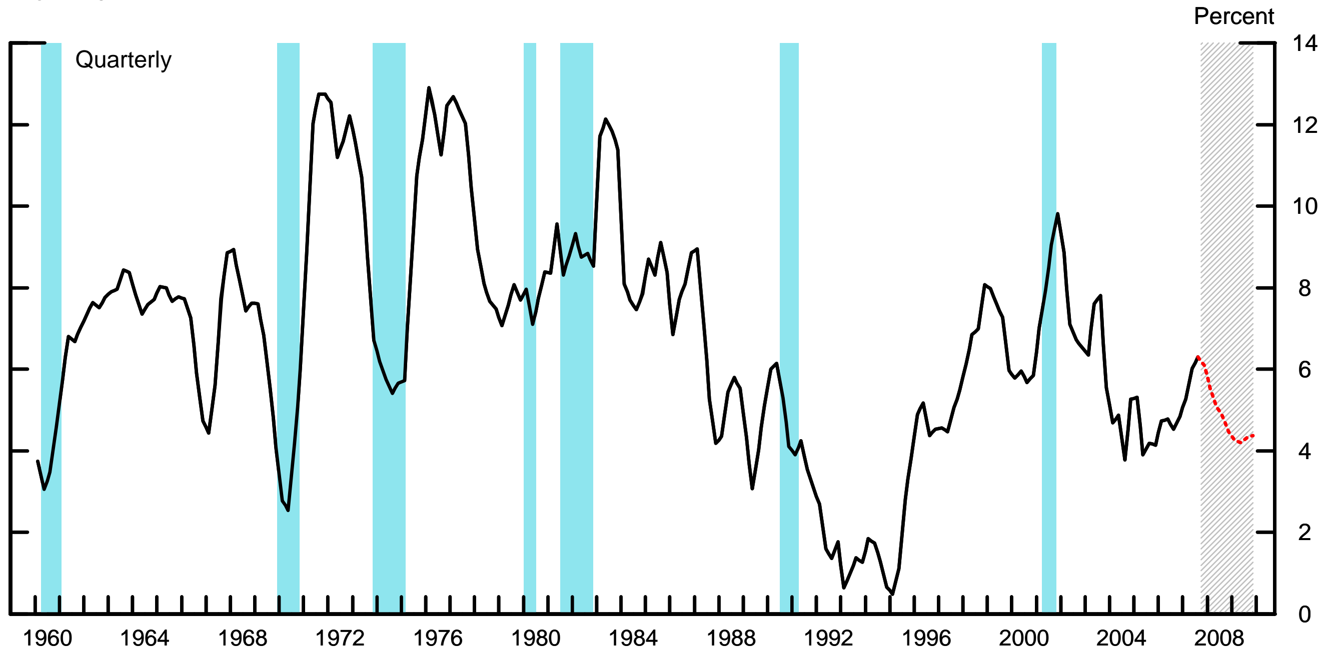
CRB Futures

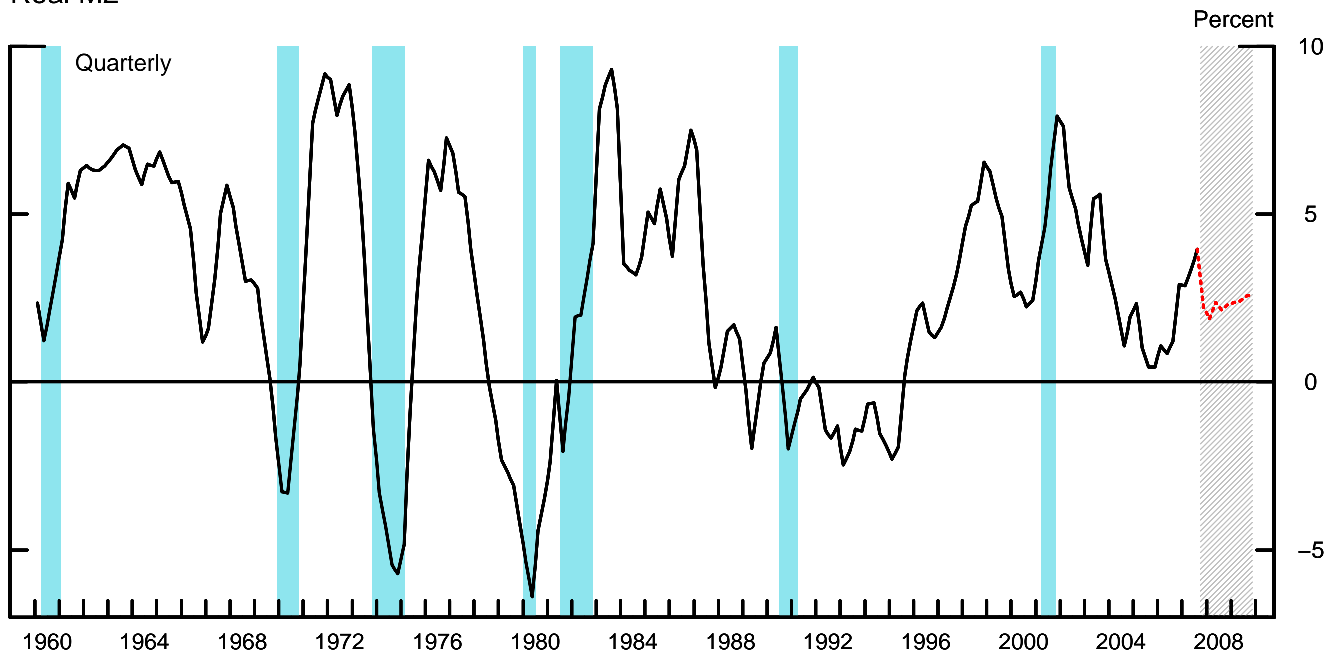


Note. Blue shaded regions denote NBER–dated recessions.

Appendix C Chart 7

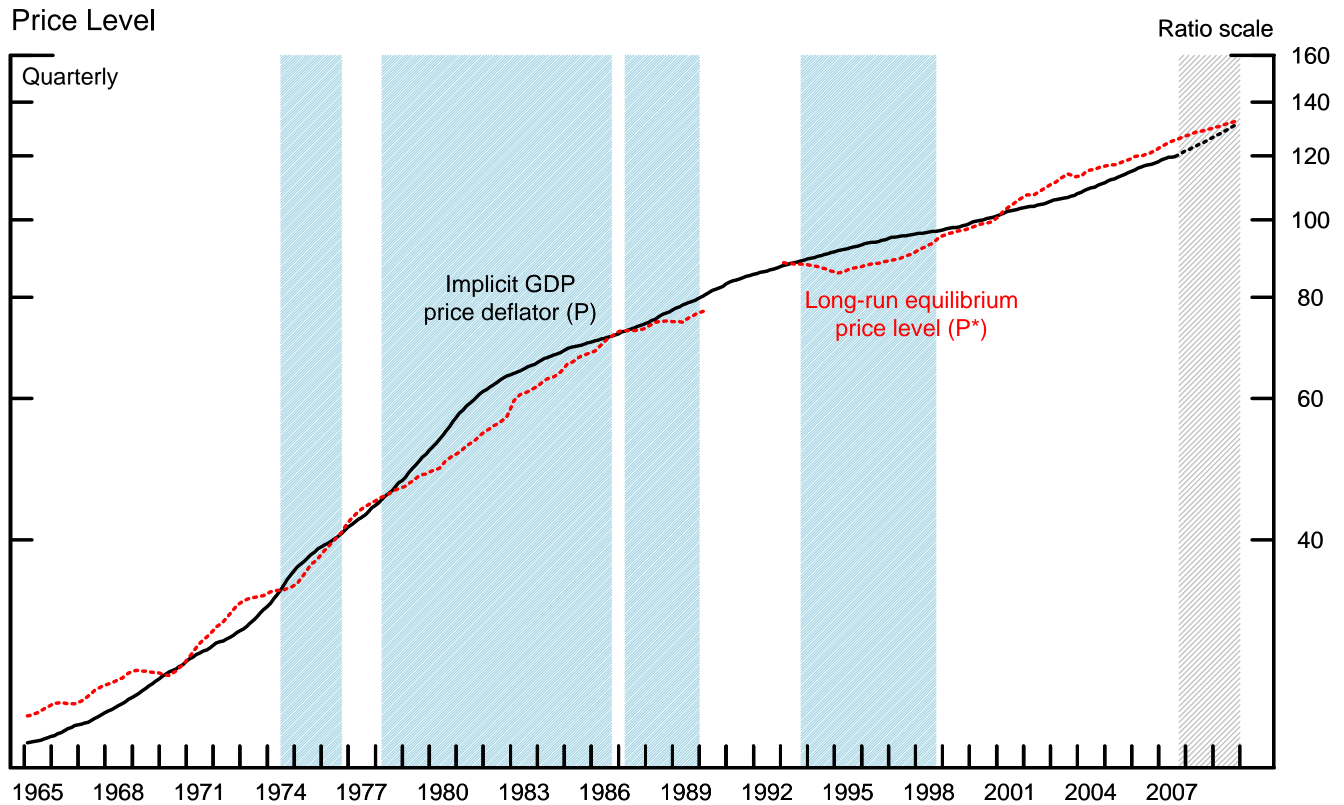
Growth of M2

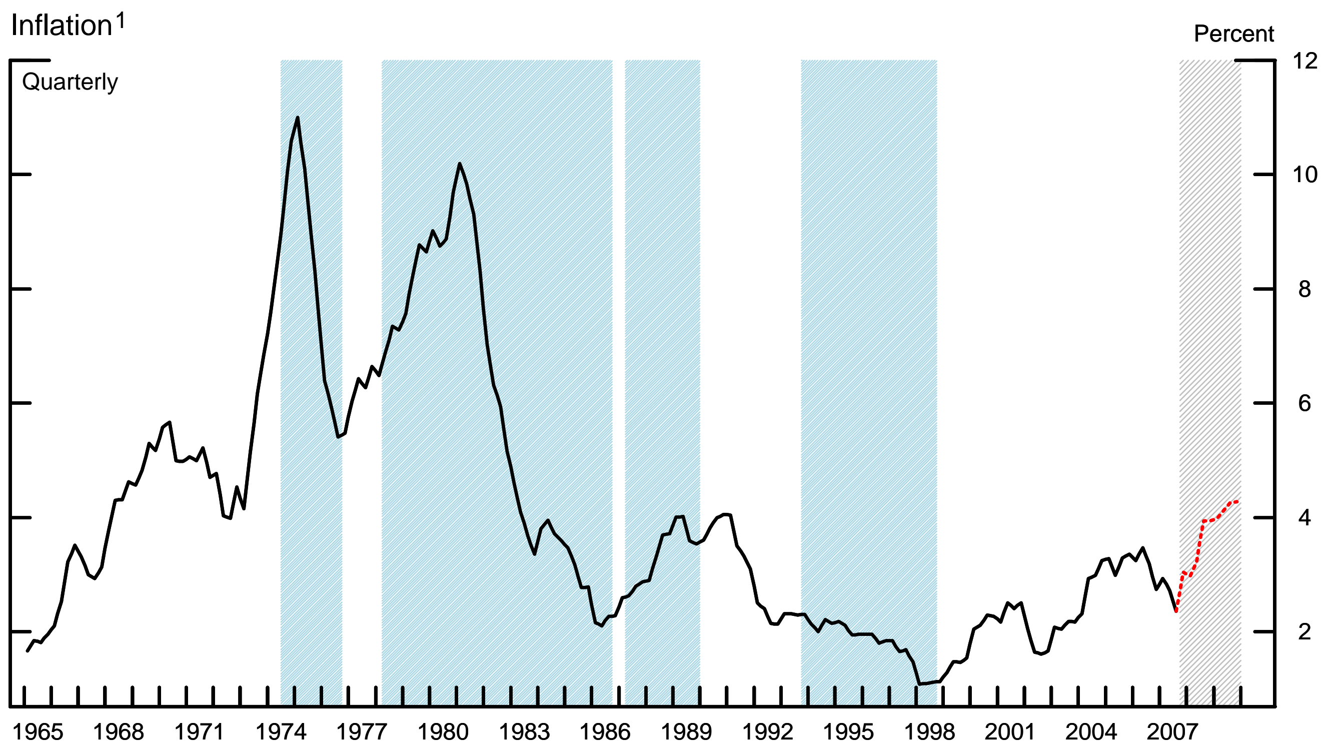




Note. Four−quarter moving average. Blue shaded regions denote NBER−dated recessions. Gray areas denote projection period. Real M2 is deflated by CPI.

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.