

Prefatory Note

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OCTOBER 19, 2006

MONETARY POLICY ALTERNATIVES

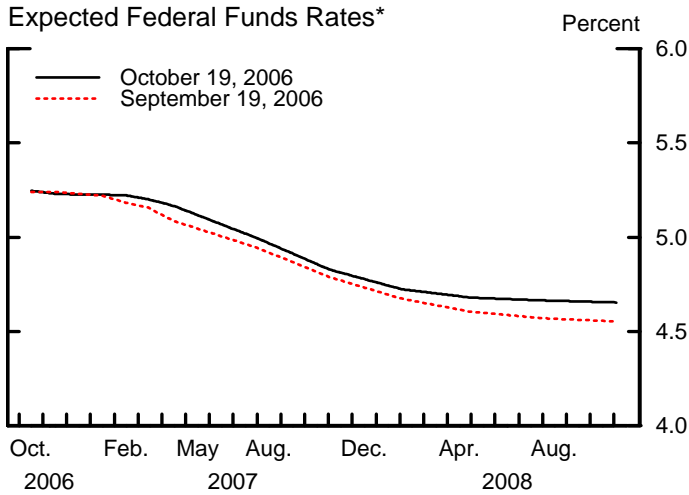
PREPARED FOR THE FEDERAL OPEN MARKET COMMITTEE
BY THE STAFF OF THE BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

MONETARY POLICY ALTERNATIVES**Recent Developments**

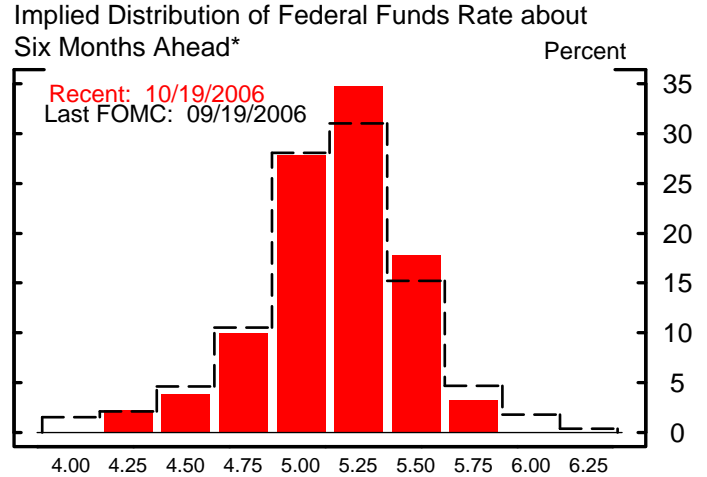
(1) The FOMC's decision at its September meeting to leave the federal funds rate target unchanged at 5¼ percent was largely anticipated by financial market participants. Similarly, the wording of the accompanying statement roughly matched the market consensus, leaving the expected path of interest rates little changed in response.¹ Over the intermeeting period, investors remained virtually certain that the federal funds rate target would hold steady for the remainder of this year. Expectations for policy further ahead, though, moved as much as 30 basis points lower early in the period in response to a few data releases with a weakish cast. In recent weeks, however, those declines were rolled back in the wake of speeches by FOMC members and the minutes of the September meeting—which were reportedly read as emphasizing the risks to inflation—as well as stronger-than-expected economic data. The market response to these releases was probably heightened by the monetary policy communications. Futures quotes currently indicate that investors expect about 50 basis points of easing during 2007, about what had been anticipated before the September meeting (Chart 1). Respondents to the Desk's survey of primary dealers also expect the FOMC to ease policy during 2007, although by somewhat less than implied by futures market quotes. Investors became a bit more confident in their expectations about monetary policy in that the implied probability distribution for the federal funds rate from options on Eurodollar futures contracts maturing in about six months narrowed further, with about 20 percent probability

¹ The effective federal funds rate averaged near its intended level over the intermeeting period. The Desk purchased \$1½ billion of Treasury coupon securities in the market and redeemed \$3¾ billion of coupon securities. The volume of outstanding long-term RPs increased by \$2 billion.

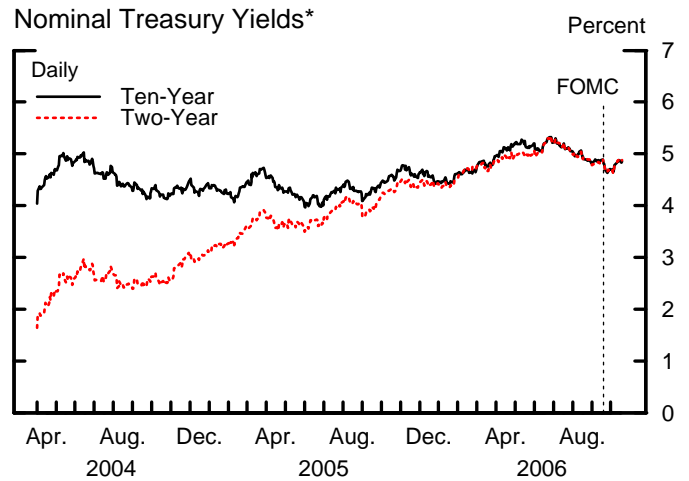
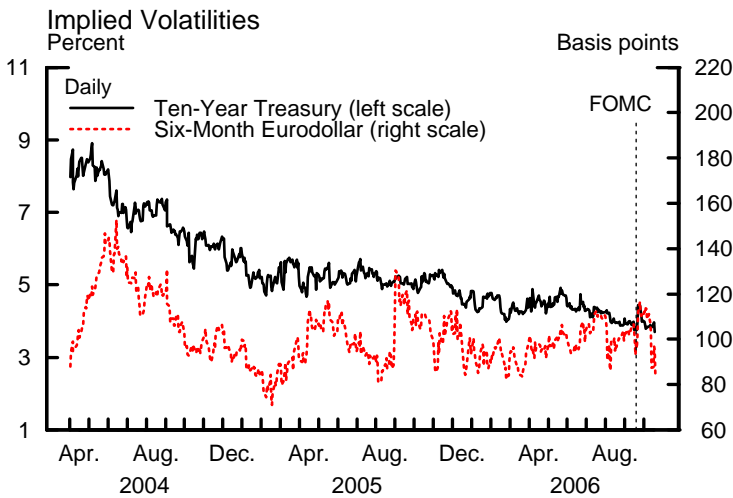
Chart 1 Interest Rate Developments



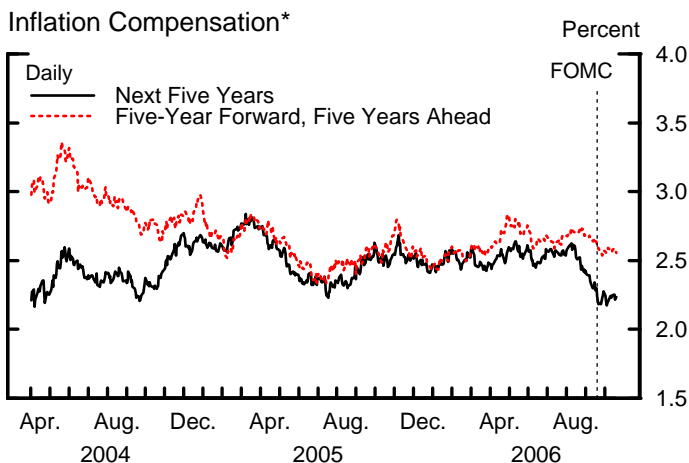
*Estimates from federal funds and Eurodollar futures, with an allowance for term premiums and other adjustments.



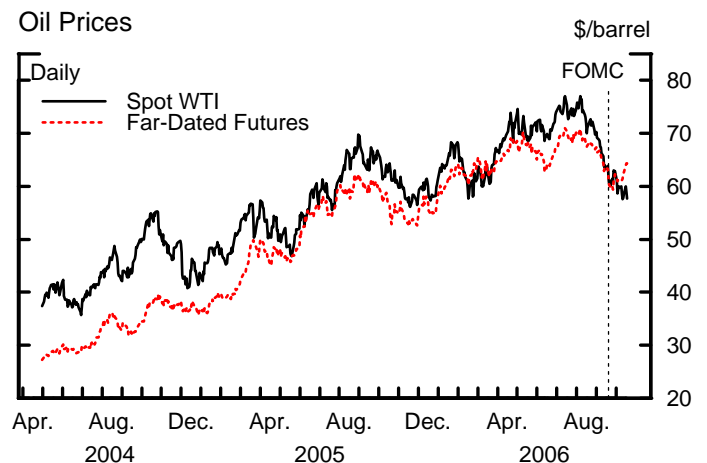
*Estimates from options on Eurodollar futures contracts, adjusted to estimate expectations for the federal funds rate.



*Par yields from a smoothed nominal off-the-run 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 September 19, 2006. Last daily observations are for October 19, 2006.

weight now being placed on tightening and 45 percent being placed on easing by then. Forward-looking implied volatilities derived from longer-term interest rate derivatives also remain near historical lows (see box on following page).

(2) Yields on nominal and inflation-indexed Treasury coupon securities rose slightly, on net, over the intermeeting period. Inflation compensation for next year declined modestly, likely reflecting a further fall in spot energy prices, but was largely unchanged at longer maturities. Survey data pointed to a decline in household short-term inflation expectations. Trading conditions in the Treasury securities market remained healthy despite reports of substantial liquidations of short positions in Treasury issues by some large hedge funds (Chart 2). Similarly, the winding down of Amaranth, a hedge fund that posted losses in excess of \$6 billion in energy trading and that had positions in several other markets, left no discernible imprint on the functioning of markets.

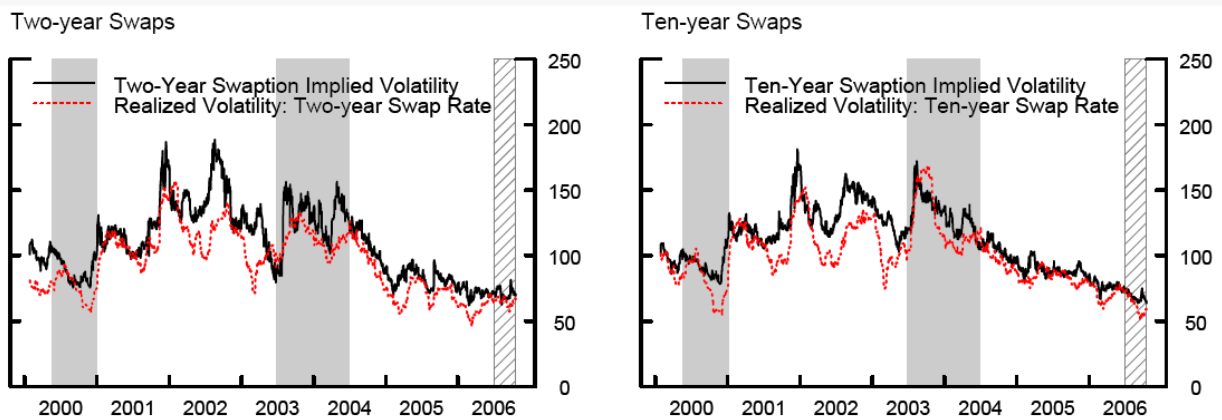
(3) Broad equity indexes rose 4 to 5 percent over the intermeeting period. Investor optimism was reportedly buoyed by a relative paucity of profit warnings ahead of scheduled third-quarter earnings announcements and, in the event, by aggregate earnings news that has thus far outstripped expectations with about one-fifth of the S&P 500 firms having reported; analysts' estimates now suggest that earnings for the third quarter will come in 15 percent above the levels of a year ago. The drop in oil prices may also have supported share values. Equity implied volatilities remain near historical lows. Spreads of investment-grade corporate bond yields over those on comparable Treasury securities held steady, while those on speculative-grade corporate bonds narrowed a little. Corporate credit quality remained solid, with expected and realized bond default rates staying very low.

(4) The trade-weighted index of the dollar versus major foreign currencies rose about 1 percent on balance over the intermeeting period, with the gains spread evenly

Implied volatility, realized volatility, and turning points in monetary policy

Measures of interest rate uncertainty have stayed near historical lows during the past few months. For example, implied volatilities derived from options on two- and ten-year swap contracts, shown by the black lines below, remain near lows observed in the past six years.

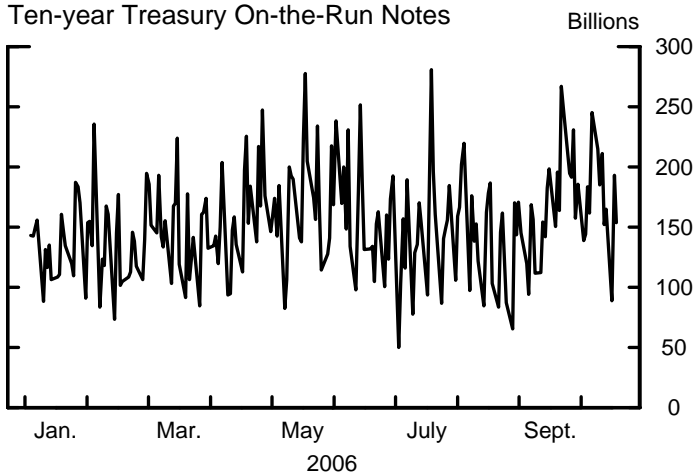
Implied volatility could reflect both expected volatility over the horizon of the option and a premium for volatility risk. Past volatility likely informs investors' expectations of future volatility, and realized volatilities on two- and ten-year swap rates are still near sample lows after having edged a bit higher over the intermeeting period. The subdued level of realized volatility notwithstanding, some commentators find currently low implied volatilities particularly puzzling given that monetary policy might be at a "turning point," denoted by the shaded regions below.* However, reduced-form econometric models that include realized volatility and other variables generally indicate that implied volatility is not greater during the periods between easing and tightening cycles.



* Historical turning points refer to periods between the last increase (decrease) in the target of a tightening (easing) cycle and the first decrease (increase) in the target of a subsequent easing (tightening) cycle. For the purposes of this analysis, the period after the June 2006 FOMC meeting is presumed to be a turning point, although the results reported here are insensitive to that assumption.

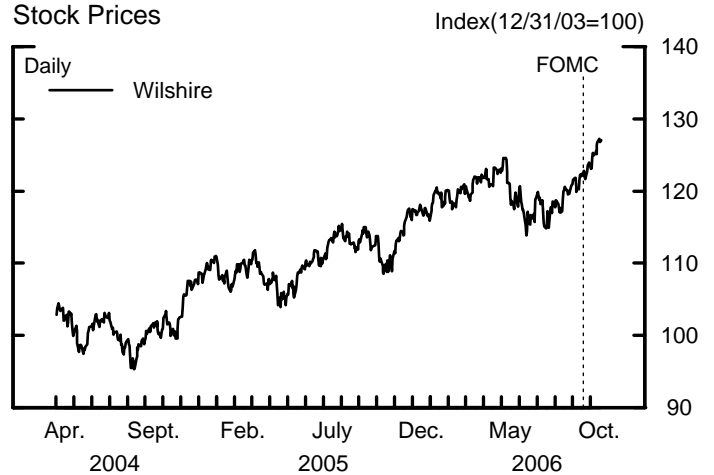
Chart 2 Asset Market Developments

Daily Total Trading Volume in Two-, Five-, and Ten-year Treasury On-the-Run Notes

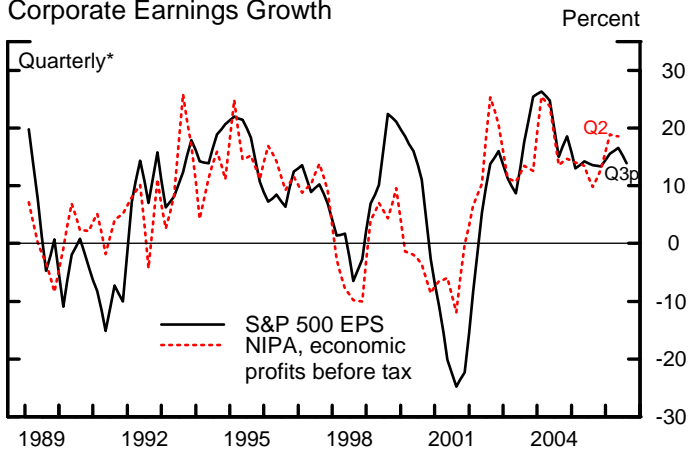


Source: BrokerTec Interdealer Market Data. Total interdealer market volume estimated from ICAP volume and market share.

Stock Prices

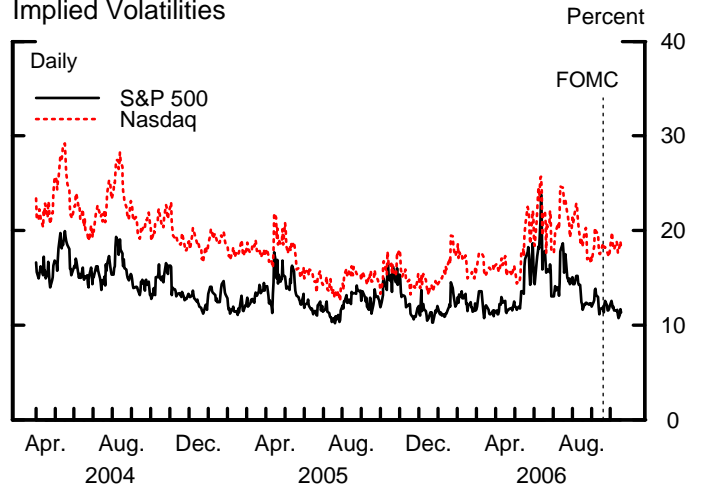


Corporate Earnings Growth

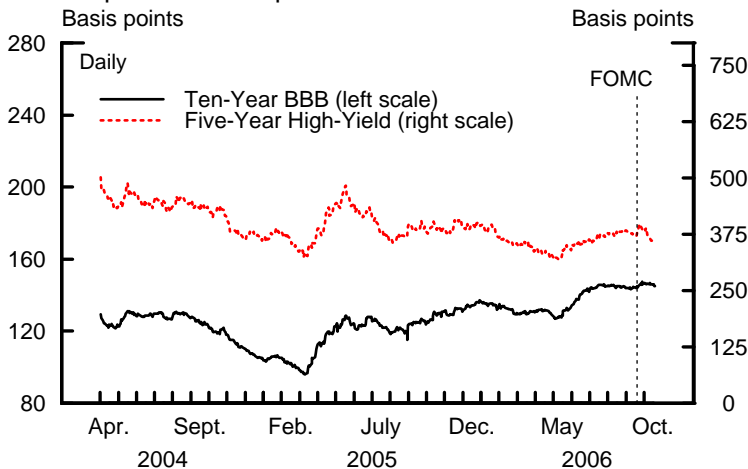


*Change from four quarters earlier.
Source: I/B/E/S for S&P 500 EPS.

Implied Volatilities

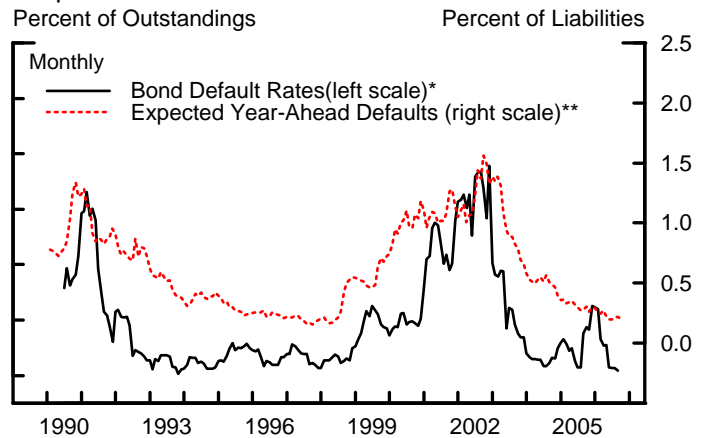


Corporate Bond Spreads*



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

Corporate Default Rates



*6-month moving average, from Moody's Investors Service.

**Firm-level estimates of default weighted by firm liabilities as a percent of total liabilities, excluding defaulted firms. Source: Moody's KMV.

Note: Vertical lines indicate September 19, 2006. Last daily observations are for October 19, 2006.

against most currencies (Chart 3).² Both nominal and real yields on long-term government bonds in foreign industrial countries moved roughly in tandem with those on comparable U.S. securities. Major foreign stock markets also recorded gains similar to those in the United States. On October 5, the European Central Bank raised its main policy rate 25 basis points, the fifth such increase in the present round of tightening.

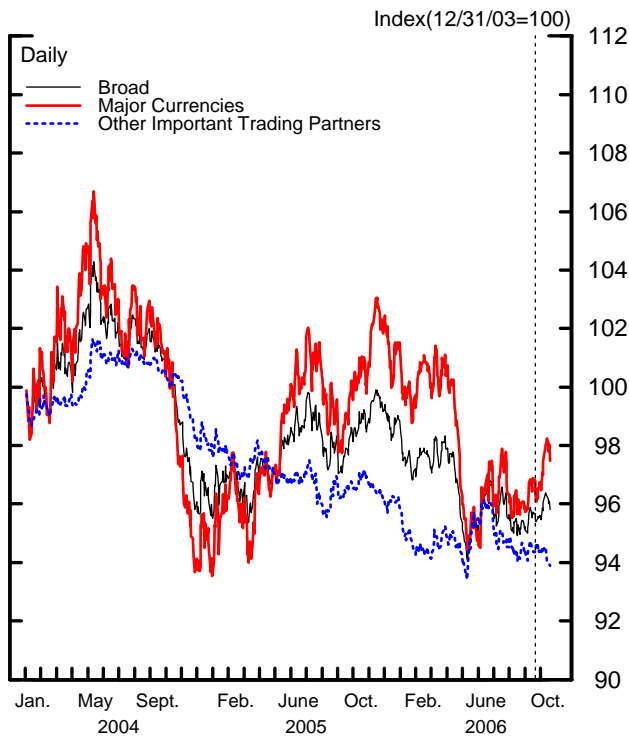
(5) The dollar was down slightly over the intermeeting period against an index of currencies of our other important trading partners, led by declines of 2 and 1 percent against the Brazilian *real* and the Mexican peso, respectively. Stock prices in most Latin American and Asian markets recorded solid gains over the period. Prices of Thai financial assets dropped after the September 19th coup, but they ended the period higher on balance. More recently, South Korean equity prices fell somewhat on news of the nuclear test in North Korea and have since only partially recovered.

(6) Domestic nonfinancial sector debt is estimated to have expanded at an annual rate of 6½ percent in the third quarter, in line with the second-quarter pace, as a pickup in government debt growth was likely offset by a moderation in business and household debt growth (Chart 4). Consumer credit slowed noticeably over the summer, and mortgage debt growth is anticipated to have dropped further in the third quarter, owing largely to an expected further deceleration in house prices. In the business sector, growth in C&I loans weakened substantially in September but was quite strong for the third quarter as a whole. Bank lending to businesses through commercial real estate loans slowed during August and September, a pattern consistent with results from the October Senior Loan Officer Opinion Survey, which indicated a weakening of demand and a tightening of credit standards for such loans.

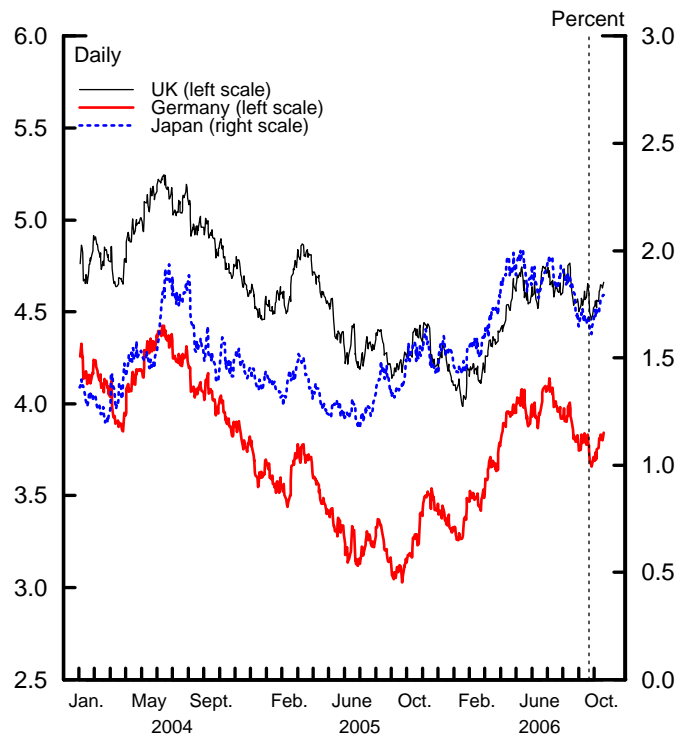
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Chart 3 International Financial Indicators

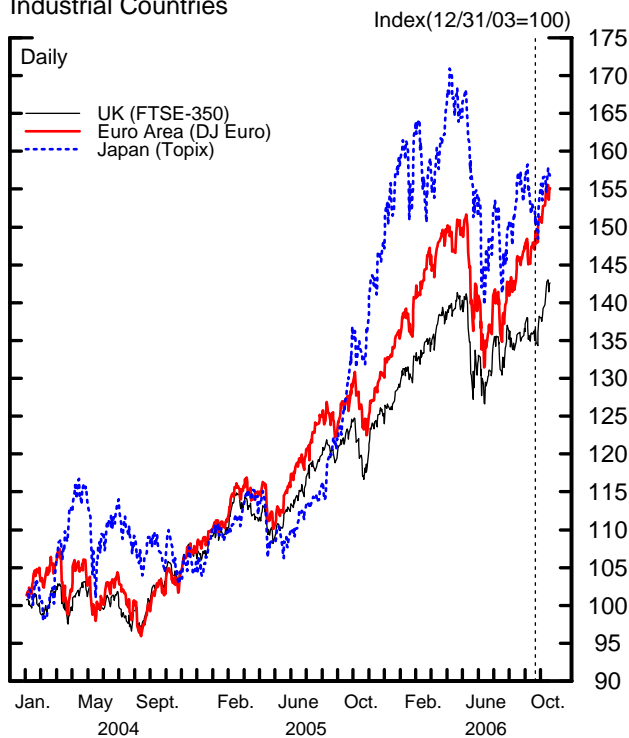
Nominal Trade-Weighted Dollar Indexes



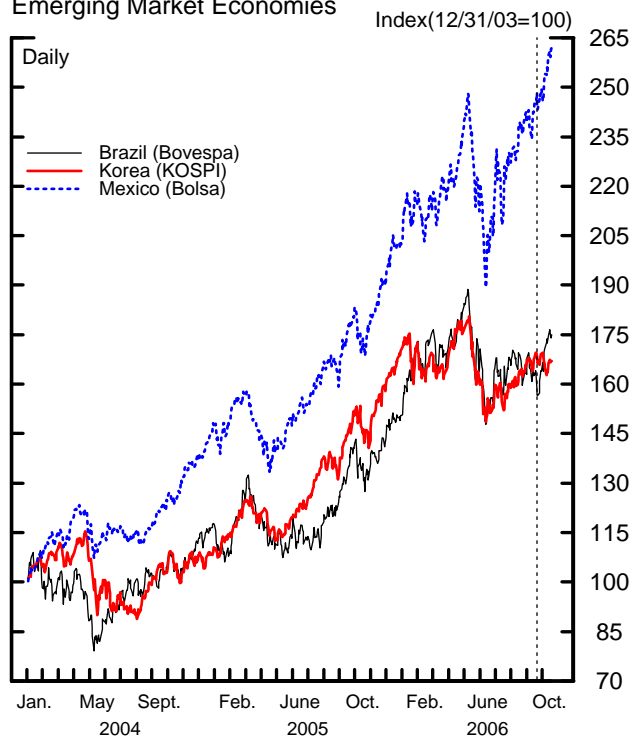
Ten-Year Government Bond Yields (Nominal)



Stock Price Indexes
Industrial Countries



Stock Price Indexes
Emerging Market Economies



Note: Vertical lines indicate September 20, 2006. Last daily observations are for October 19, 2006.

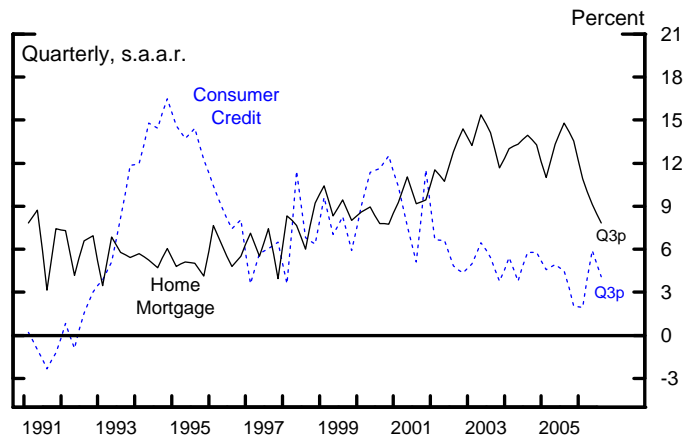
Chart 4 Debt and Money

Growth of Nonfinancial Debt

Percent, s.a.a.r.		Total	Nonfederal
2004		8.9	8.9
2005	Q1	9.3	8.5
	Q2	8.2	9.9
	Q3	9.7	10.5
	Q4	9.6	10.0
2006	Q1	9.5	9.1
	Q2	6.4	8.3
	Q3 p	6.5	7.2

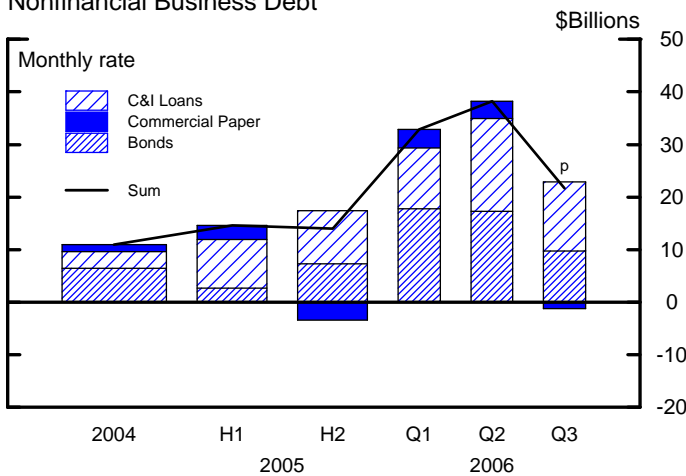
p Projected.

Growth of Household Debt



p Projected.

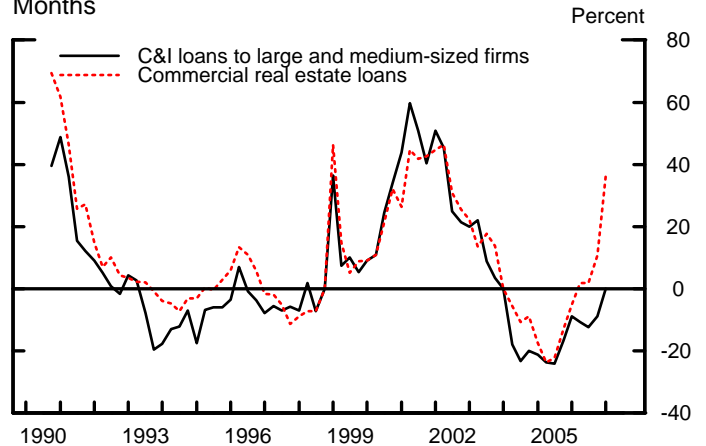
Changes in Selected Components of Nonfinancial Business Debt



p Preliminary.

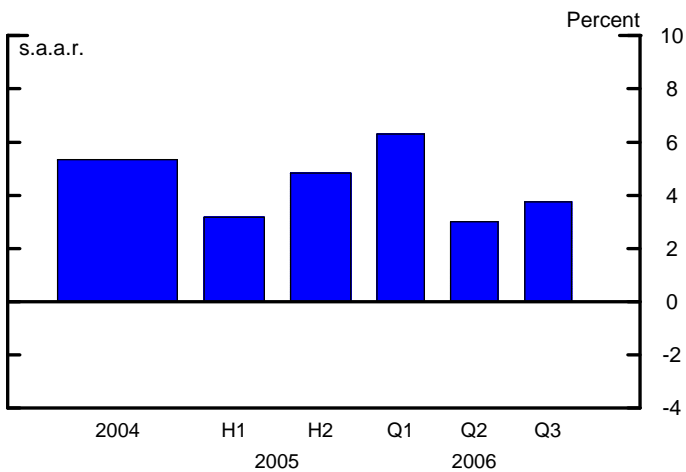
Note. Commercial paper and C&I loans are seasonally adjusted, bonds are not.

Net Percentage of Domestic Respondents Tightening Standards for Business Loans Over the Preivous Three Months

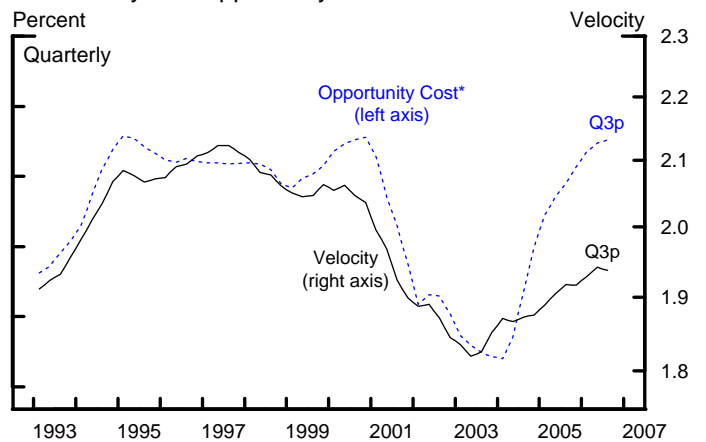


Source: Senior Loan Officer Opinion Survey.

Growth of M2



M2 Velocity and Opportunity Cost



*Two-quarter moving average.

(7) M2 grew modestly in the third quarter, evidencing the lagged effects of prior increases in opportunity costs and slow growth in nominal spending. Strong advances in small time deposits and retail money funds offset a runoff in liquid deposits. The stock of currency was about flat, owing to continuing weak overseas demand for U.S. banknotes.

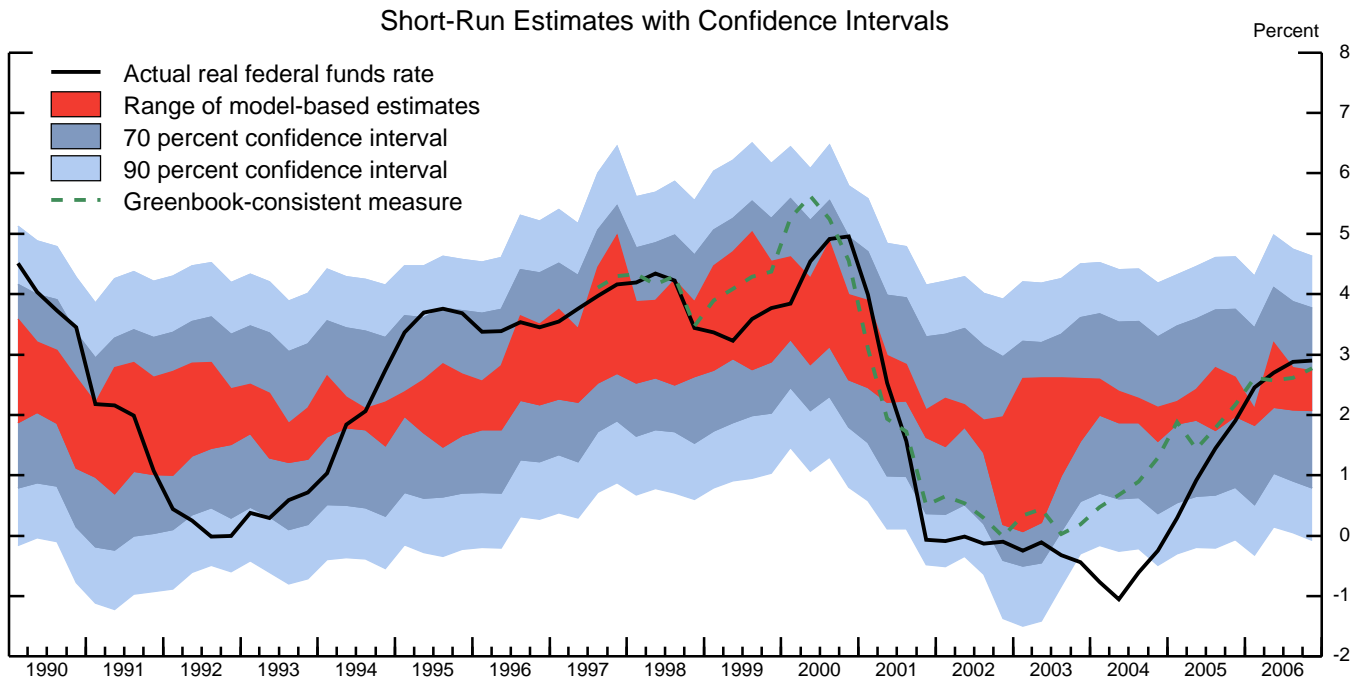
Medium-Term Strategies

(8) Over the intermeeting period, incoming data on economic activity and inflation were mostly consistent with the staff's September projection. Accordingly, the latest Greenbook forecast continues to point to below-trend economic growth and gradually ebbing core inflation. As in September, the forecast is predicated on an assumption that the Committee maintains the current stance of policy through mid-2008 and then eases slightly. Long-term Treasury yields follow a path similar to that projected in September, that is, rising marginally as investors come to realize that policy is unlikely to be eased next year. Stock prices once again are anticipated to increase at about a 6½ percent annual rate, but from a level that is about 3½ percent higher than anticipated in the previous forecast. The foreign exchange value of the dollar is again assumed to depreciate gradually. Given recent developments in energy markets, oil prices in the near term are assumed to be about \$5 per barrel lower than in the September projection, but that difference largely unwinds over the next two years. Against this backdrop, real GDP growth is expected to slow to around a 1½ percent annual rate in the second half of this year, just a touch softer than in the September Greenbook. Thereafter, economic growth picks up gradually to about a 2½ percent pace in 2008, which brings it up to the staff's estimate of the expansion of potential GDP. The sluggish performance over the next few quarters pushes the unemployment rate up to a little above 5 percent. The flattening out of energy and other commodity prices, combined with an expected deceleration in import prices and slight cooling in product and labor markets, nudges core PCE inflation down from an annual rate of around 2¼ percent in the second half of 2006 to close to 2 percent by the end of the forecast period. Headline PCE inflation is projected to slow to an annual rate of less than 1 percent in the second half of this year, reflecting the recent sharp declines in consumer energy prices, but to rebound to 2.7 percent in 2007 and 2.1 percent in 2008.

(9) To shed light on the economic outlook and policy strategies at a longer horizon, the FRB/US model was used to construct an illustrative extension of the Greenbook forecast beyond 2008 based on a set of medium-term assumptions together with some judgmental adjustments. Important influences on the inflation outlook include trend multifactor productivity growth of about 1³/₄ percent per year, approximately flat energy prices, and a pickup in real dollar depreciation to an average rate of 3 percent per year. Based on these assumptions, the unemployment rate would need to be a bit above the staff's assumed long-run NAIRU of 5 percent to keep the core PCE inflation rate stable. The illustrative extension also assumes that the unified federal budget deficit rises gradually from just under 2 percent of GDP in 2008 to a little over 2¹/₂ percent by 2012 and that the assumed pace of dollar depreciation and steady growth abroad are sufficient to stabilize the current account deficit at just below 8 percent of GDP. Further assuming that both term and risk premiums on bonds gradually move back to their historical norms, the real funds rate would need to decline to around 2 percent to keep output expanding along its potential path.

(10) The value of the equilibrium real federal funds rate (r^*) is subject to substantial uncertainty, which can be seen in the range of different estimates reported 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 remained around 2¹/₂ to 2³/₄ percent since the June Bluebook, reflecting the relatively small revisions since the start of the summer in the staff's assessment of the strength of aggregate demand relative to potential output. This judgmental estimate currently lies just above the range of the three model-based measures of short-run r^* . Model-based estimates of the medium-run value of r^* —the real rate consistent with output at potential at a horizon of about seven years, on the assumption that monetary policy acts to close

Chart 5 Equilibrium Real Federal Funds Rate



Short-Run and Medium-Run Measures

	Current Estimate	<i>Previous Bluebook</i>
Short-Run Measures		
Single-equation model	2.1	2.2
Small structural model	2.1	2.1
Large model (FRB/US)	2.7	2.7
Confidence intervals for three model-based estimates		
70 percent confidence interval	0.8 - 3.8	
90 percent confidence interval	-0.1 - 4.6	
Greenbook-consistent measure	2.8	2.6
Medium-Run Measures		
Single-equation model	2.2	2.2
Small structural model	2.2	2.2
Confidence intervals for two model-based estimates		
70 percent confidence interval	1.3 - 3.1	
90 percent confidence interval	0.7 - 3.7	
TIPS-based factor model	2.1	2.1
Memo		
Actual real federal funds rate	2.9	2.9

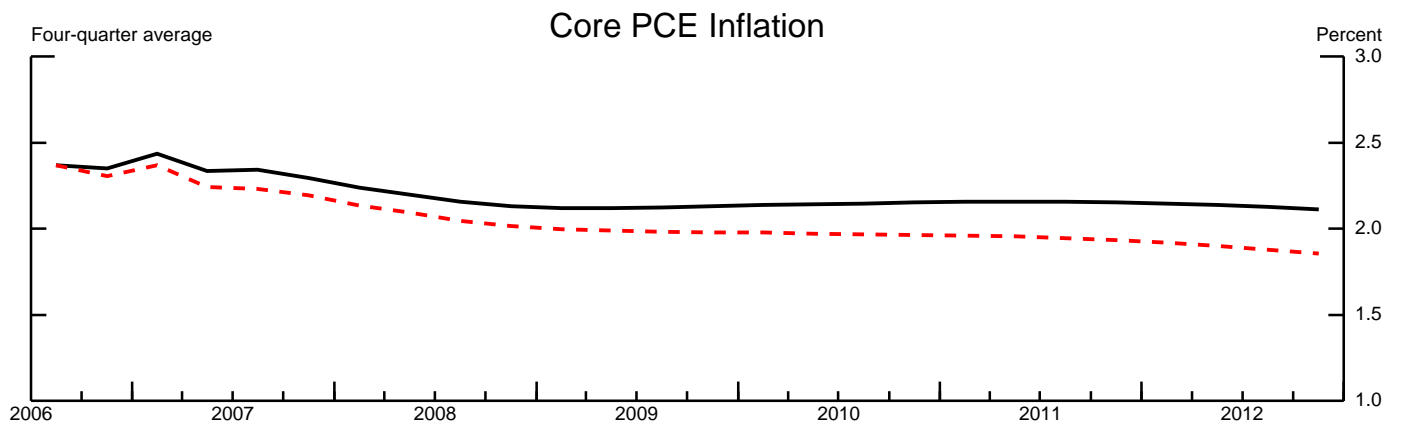
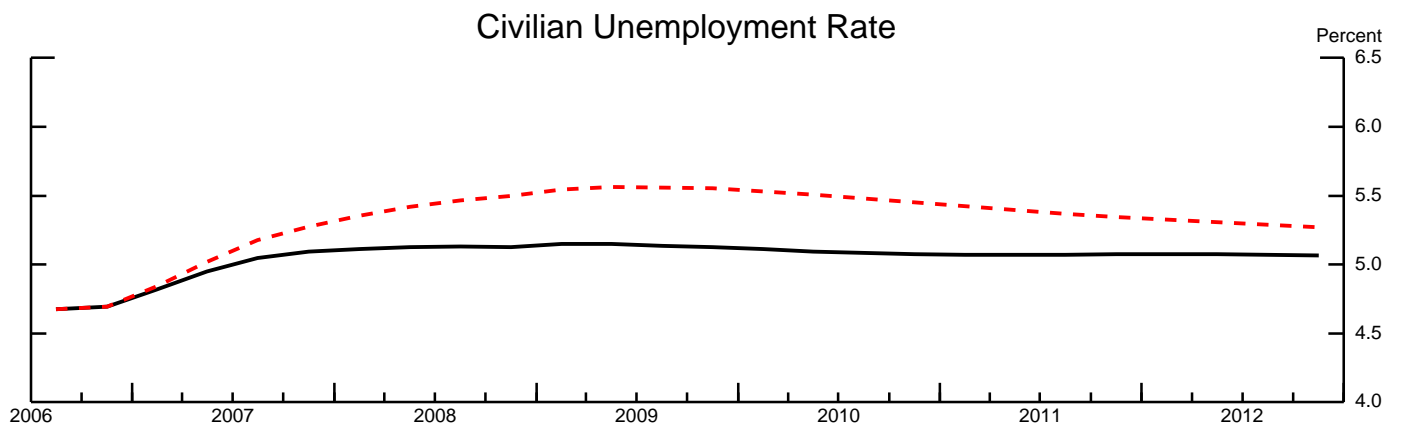
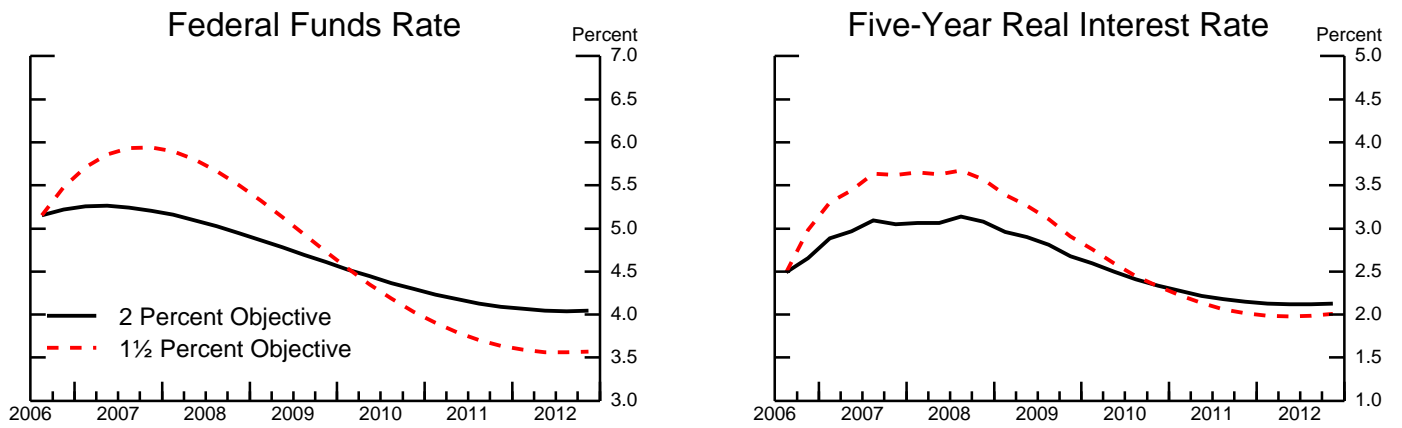
Note: Appendix A provides background information regarding the construction of these measures and confidence intervals.

the output gap over the next several years and keep it closed thereafter—are also close to the value implicit in the illustrative Greenbook extension.

(11) Medium-term implications of alternative monetary policy strategies can be assessed using optimal control simulations of the FRB/US model. In 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. The optimal path of policy balances three stabilization objectives: keeping core PCE inflation close to a specified goal; keeping unemployment close to the long-run NAIRU; and avoiding sharp changes in the nominal federal funds rate. The optimal policy and associated macroeconomic outcomes depend on the level of the inflation goal and the weights assigned to the stabilization objectives; these paths also reflect both the structure of the FRB/US model and the specific assumptions embedded in the extended Greenbook outlook.

(12) The first set of simulations, shown in Chart 6, explores the implications of alternative goals for core PCE inflation, assuming that policymakers place equal weights on the three stabilization objectives. With an inflation goal of 2 percent (denoted by the solid lines), the optimal control simulation prescribes a nominal funds rate of about 5¼ percent through the end of next year followed by a gradual decline to about 4¼ percent by the end of the decade. Unemployment remains a bit above the long-run NAIRU of 5 percent and core inflation remains slightly above the 2 percent goal through 2012, reflecting the balancing of the inflation and employment objectives in an environment in which steady dollar depreciation is generating persistent upward pressure on domestic inflation. With an inflation goal of 1½ percent (the dashed lines), the optimal policy prescribes a funds rate path that rises to nearly 6 percent next year before declining to about 3½ percent by 2012. In this case, the unemployment rate peaks at about 5½ percent later this decade while

Chart 6 Alternative Long-Run Inflation Objectives

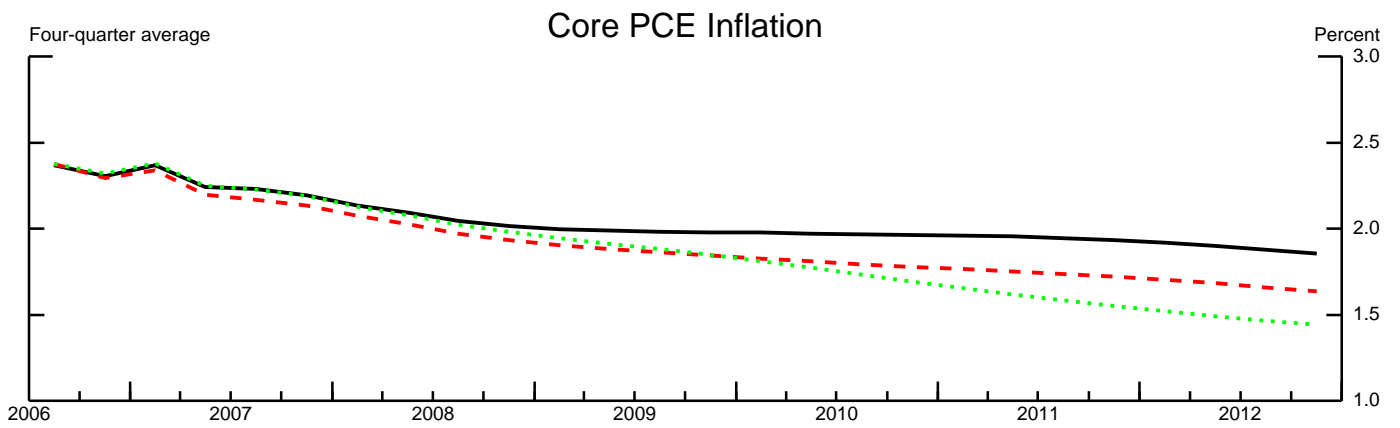
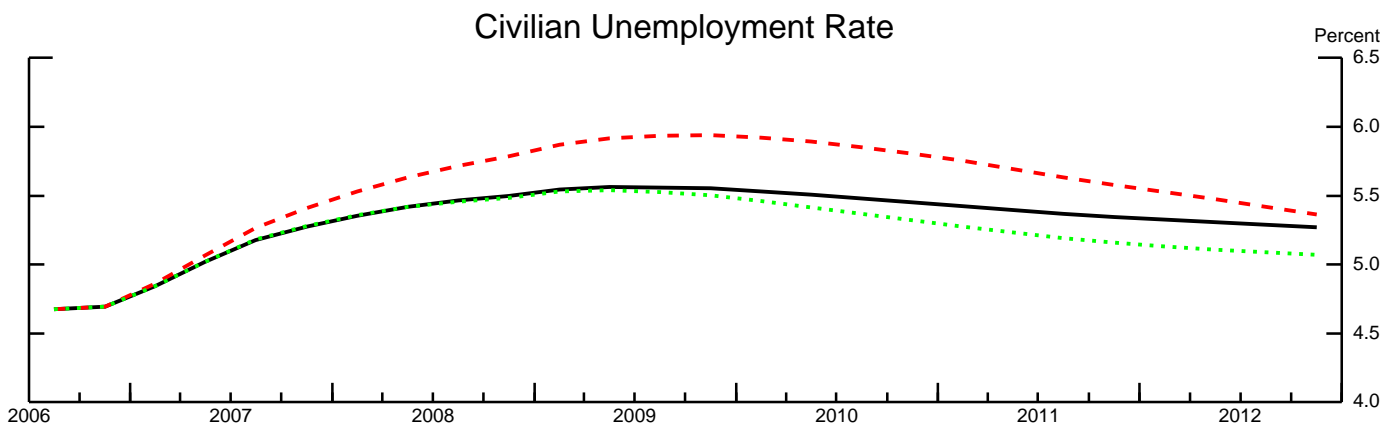
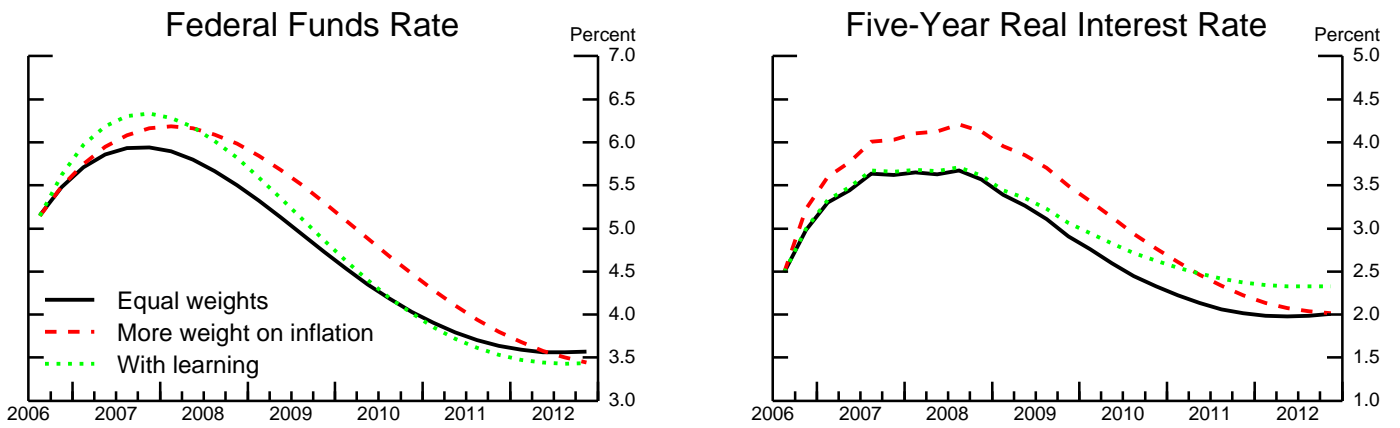


core inflation declines gradually towards its goal. The slow pace of disinflation is importantly shaped by the high output costs associated with lowering long-run inflation expectations in FRB/US and by the relative weights that policymakers are assumed to place on their inflation and unemployment objectives.

(13) Chart 7 depicts two alternative scenarios that illustrate, for an inflation goal of 1½ percent, how policymaker preferences and the costs of disinflation influence the policy path in optimal control simulations. In the first scenario (the dashed lines), policymakers place considerably greater relative weight on achieving the inflation objective, rather than placing equal weight on inflation and unemployment stabilization as in the benchmark scenario (the solid lines). With a greater focus on the inflation objective, the optimal funds rate path continues to rise well into 2008 and remains on a track about 50 basis points higher than in the benchmark scenario for several years thereafter. As a result, the unemployment rate rises to nearly 6 percent, helping push core inflation closer to the 1½ percent goal by the end of the decade. The second scenario maintains the baseline assumption that policymakers place equal weights on the three stabilization objectives, but departs from the model's standard equation for the evolution of long-run inflation expectations; in particular, this scenario posits that unexpectedly tight monetary policy directly induces wage and price setters to mark down their assessment of the policymakers' inflation goal, thereby diminishing the amount of economic slack needed to reduce actual and expected inflation in the FRB/US model.³ The optimal policy in this case (the dotted

³ More specifically, the learning mechanism assumes that wage and price setters believe that monetary policy is determined by a Taylor rule for which all the parameters are known except the inflation goal. The level of the nominal funds rates therefore provides a signal of the inflation goal that wage and price setters use to update their expectations of long-run inflation—a channel that is absent from the other model simulations in which wage and price setters use only past inflation to update their assessment of long-run inflation. This change in the learning mechanism lowers the sacrifice ratio—the cumulative amount of excess unemployment needed to lower inflation one percentage point—from over 6 in the

Chart 7 Optimal Policy with a 1½ Percent Inflation Objective



lines) prescribes a near-term rise in the funds rate to about 6¼ percent by mid-2007, with subsequent policy easing as long-term inflation expectations converge to the inflation goal. The more favorable policy tradeoff is readily apparent in this scenario: Core inflation descends more quickly towards the 1½ percent goal even though the unemployment rate is only modestly higher than the long-run NAIRU.

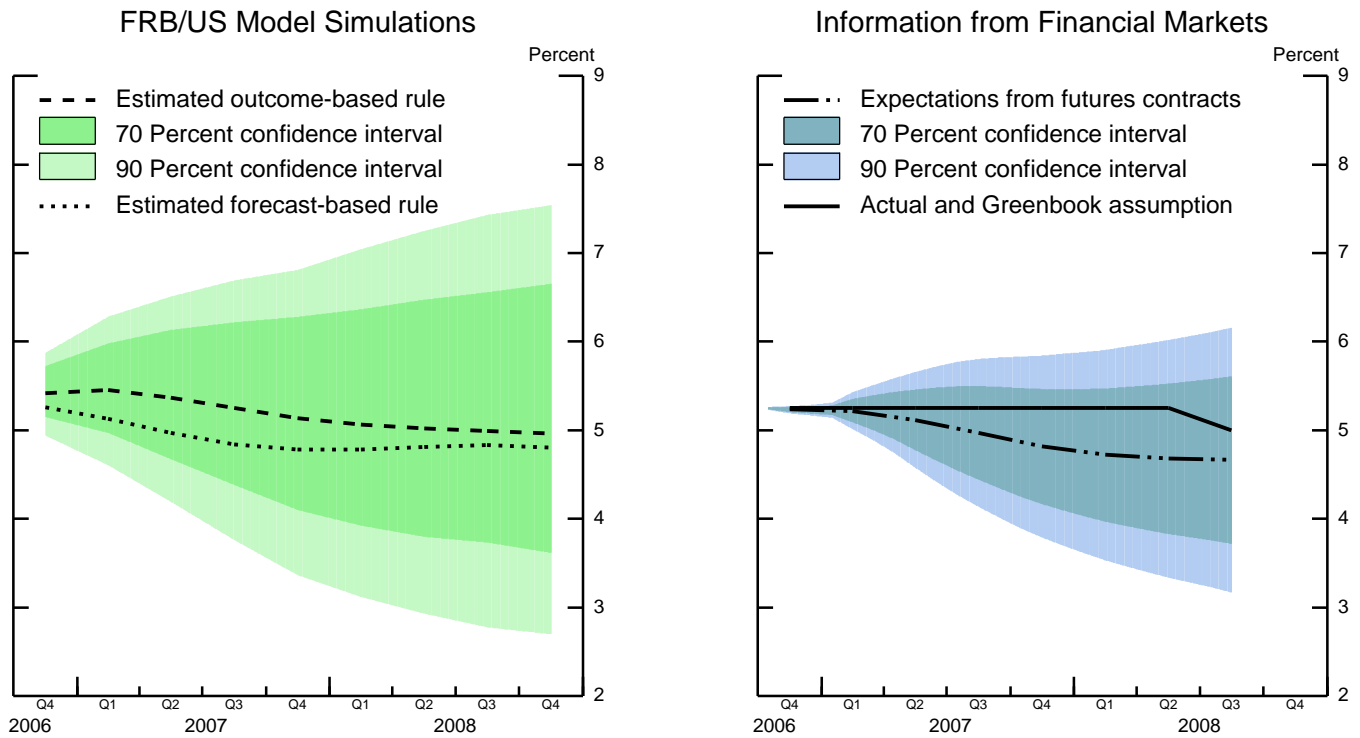
(14) These optimal control policies prescribe broadly similar and relatively stable funds rate paths over the next two years, in part because all of the simulations are premised on the same set of assumptions regarding the medium-term outlook. The upper portion of Chart 8 provides some information on the extent of uncertainty about the future course of monetary policy. The left panel depicts confidence intervals for the range of federal funds rate outcomes implied by stochastic simulations of the FRB/US model, assuming that monetary policy is well-characterized by an estimated outcome-based rule and that the shocks hitting the economy are typical of the experience over the past two decades. In the absence of any shocks, the outcome-based rule (denoted by the dashed line) prescribes a funds rate path that remains between 5¼ and 5½ percent through mid-2007 and then declines gradually to about 5 percent. The stochastic simulations indicate a 70 percent probability that the prescriptions of the outcome-based rule will fall in the range of 4 to 6½ percent during 2007. By comparison, confidence intervals implied by options prices on federal funds and Eurodollar futures contracts (right panel) point to noticeably less uncertainty in financial markets regarding the prospective path of policy over the next two years.

(15) While optimal control analysis necessitates the use of a macroeconomic model such as FRB/US, simple policy rules based on a limited set of variables can serve as benchmarks for monetary policy strategy, and the near-term prescriptions of

baseline case to less than 2, comparable to estimates of the sacrifice ratio for the disinflation of the early 1980s.

Chart 8

The Policy Outlook in an Uncertain Environment



Near-Term Prescriptions of Simple Policy Rules

	1½ Percent Inflation Objective		2 Percent Inflation Objective	
	2006Q4	2007Q1	2006Q4	2007Q1
	Taylor (1993) rule	4.7	4.8	4.4
Taylor (1999) rule	4.7	4.8	4.5	4.5
Taylor (1999) rule with higher r*	5.5	5.5	5.2	5.3
First-difference rule	5.5	5.7	5.2	5.2
Memo				
	2006Q4	2007Q1		
Estimated outcome-based rule	5.4	5.5		
Estimated forecast-based rule	5.3	5.1		
Greenbook assumption	5.3	5.3		
Market expectations	5.2	5.2		

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

such rules can be obtained without specifying any particular model. As shown in the lower portion of Chart 8, the rules proposed by Taylor (1993, 1999) prescribe a funds rate of about $4\frac{1}{2}$ to $4\frac{3}{4}$ percent, depending on the inflation objective (either 2 or $1\frac{1}{2}$ percent). A higher funds rate of $5\frac{1}{4}$ to $5\frac{1}{2}$ percent is prescribed by a variant of the Taylor (1999) rule—introduced in the August Bluebook—that incorporates a value of r^* that is 75 basis points higher than in the original rule. Finally, with an inflation objective of $1\frac{1}{2}$ percent, the first-difference rule—whose prescriptions do not depend on the level of the output gap or any particular value of the equilibrium real interest rate—calls for a distinct upward tilt to the path of policy, with the funds rate rising to $5\frac{3}{4}$ percent by the first quarter of next year; in contrast, with a 2 percent inflation goal, the first-difference rule is consistent with holding the funds rate at its current level.

Short-Run Policy Alternatives

(16) This Bluebook presents three formal policy alternatives for the Committee's consideration, associated with the draft statements in Table 1. Under Alternatives A and B, the Committee would again leave the stance of monetary policy unchanged at this meeting; Alternative A would indicate that the Committee has no clear view as to the likely future direction of policy, whereas Alternative B would repeat the statement from September that further policy tightening may prove necessary. Under Alternative C, the Committee would increase the target rate 25 basis points at this meeting and continue to stress upside risks to inflation. In all three, the Committee would acknowledge that economic growth appears to have slowed further in the third quarter, but the characterization of growth going forward varies across the alternatives.

(17) If the Committee judges that the news since its decision to hold the funds target unchanged in September has not significantly altered the outlook for inflation and activity, it might be attracted to **Alternative B**. A combination of below-trend growth and an edging lower in core inflation, as in the staff forecast, may be viewed as the best attainable outcome. With the real federal funds rate around the upper end of the range of model-based estimates of its equilibrium value as noted earlier, the Committee might judge the current stance of policy as broadly consistent with achieving this result. Moreover, from a risk-management perspective, modest policy restraint may be viewed as appropriately weighing the competing risks to inflation and economic growth. The possibility that inflation expectations could begin to drift higher and the tightness of the labor market, as evidenced by data on labor compensation and reports of difficulties in filling certain positions, may both be viewed as pointing to upside risks to costs and prices in the Greenbook projection. Despite those upside inflation risks, the Committee may want to refrain from tightening in light of the downside risks to economic growth, including the possibility

Table 1: Alternative Language for the October FOMC Announcement

	September FOMC	Alternative A	Alternative B	Alternative C
Policy Decision	1. The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	The Federal Open Market Committee decided today to raise its target for the federal funds rate by 25 basis points to 5½ percent.
Rationale	2. The moderation in economic growth appears to be continuing, partly reflecting a cooling of the housing market.	Economic growth appears to have slowed further in the third quarter , partly reflecting a cooling of the housing market. Although there is a risk that the slowdown in economic growth may become more pronounced, the economy seems likely to expand at a moderate pace.	Economic growth appears to have slowed further in the third quarter , partly reflecting a cooling of the housing market. Going forward, the economy seems likely to expand at a moderate pace.	Economic growth appears to have slowed further in the third quarter , partly reflecting a cooling of the housing market. Going forward, the economy seems likely to expand at a moderate pace.
	3. Readings on core inflation have been elevated, and the high levels of resource utilization and of the prices of energy and other commodities have the potential to sustain inflation pressures. However, inflation pressures seem likely to moderate over time, reflecting reduced impetus from energy prices, contained inflation expectations, and the cumulative effects of monetary policy actions and other factors restraining aggregate demand.	Readings on core inflation have been elevated, and the high level of resource utilization has the potential to sustain inflation pressures. However, inflation pressures seem likely to moderate over time, reflecting reduced impetus from energy prices, contained inflation expectations, and the cumulative effects of monetary policy actions and other factors restraining aggregate demand.	[Unchanged]	Readings on core inflation have been elevated and the high levels of resource utilization and of the prices of energy and other commodities have the potential to sustain inflation pressures. Inflation pressures seem likely to moderate over time, but the extent and speed of that moderation is uncertain. In these circumstances, the Committee believed that an additional firming of policy was appropriate to bolster progress towards achieving price stability.
Assessment of Risk	4. Nonetheless, the Committee judges that some inflation risks remain. The extent and timing of any additional firming that may be needed to address these risks will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.	In these circumstances, future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.	[Unchanged]	Although the Committee both seeks and expects a gradual reduction in inflation, it continues to view the risks to that outcome as remaining to the upside. The extent and timing of any additional firming that may be needed to address these risks will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.

that the housing market could continue to deteriorate. Holding the federal funds rate unchanged would permit additional information bearing on the prospects for growth and inflation to accumulate before making a move in either direction.

(18) With little news since the September FOMC meeting, the Committee could essentially repeat its previous statement, but acknowledge softness in the economy in the third quarter. If the Committee wished to include an explicit assessment of the prospects for growth, it could also include an additional sentence in row 2 noting that “Going forward, the economy seems likely to expand at a moderate pace.”

(19) Money market futures and options indicate that investors remain confident that the Committee will maintain the federal funds rate at 5¼ percent at this meeting. Moreover, the Desk’s survey of primary dealers indicates that the accompanying statement is expected to replicate broadly the September announcement. The release of a statement along the lines of alternative B, therefore, would not prove a surprise, and the market reaction would likely be limited.

(20) In recent statements, the risk assessment has pointed to upside risks to inflation and the possible need to firm policy further. However, market participants appear to attach greater likelihood to policy easing than tightening. To protest that view and to underscore its commitment to reduce inflation, the Committee might choose to modify its words to note that “Although the Committee both seeks and expects a gradual reduction in inflation, it continues to view the risks to that outcome as remaining to the upside.” The variation in wording might also be seen as having the advantage of eliminating repetition, which in the past has led to market participants viewing certain phrases as heavily freighted with meaning. If modifying the statement along these lines was successful in increasing investors’ perception of the upside risks to inflation, near-term policy expectations might back up somewhat and short-term Treasury yields rise. In this case, the value of the dollar on foreign exchange markets would likely edge higher, and stock prices could fall.

(21) In contrast, the Committee might now be more concerned about the downside risks to growth, perhaps in part as a result of the sharp slowing estimated for the third quarter. If so, **Alternative A** might find some support. In this alternative, the stance of policy would be maintained at this meeting, and the statement would indicate that the outlook was such that the Committee did not have a clear view as to the likely future direction of policy. The Committee might judge that there is a material probability that growth could prove weaker than in the staff forecast, perhaps reflecting a more pronounced housing market adjustment with more extensive effects on the rest of the economy, along the lines of the “Housing correction with spillovers” scenario described in the Greenbook. Moreover, if the Committee, like the staff, saw only sluggish near-term growth in activity and employment, it might be concerned that any additional adverse shocks to demand could have a disproportionate impact on the economy. Maintaining the federal funds rate at 5¼ percent for some time would be broadly consistent with the Committee’s past behavior as captured in the estimated policy rules presented earlier. Further, as noted in the medium-term policy strategies, the optimal policy path associated with pursuit of a 2 percent inflation objective has the federal funds rate remaining near current levels for the next year or so, before moving gradually lower thereafter.

(22) In order to point out the downside risks to growth, the statement accompanying Alternative A could note that “there is a risk that the slowdown in economic growth may become more pronounced.” To simplify the statement, the Committee might want to remove from the discussion of inflation the reference to the high levels “of the prices of energy and other commodities.” Indeed, the Committee might see some merit in this simplification for the other alternatives as well. Given the competing risks to inflation and growth, the risk assessment might simply state that “In these circumstances, future policy adjustments will depend on

the evolution of the outlook for inflation and economic growth, as implied by incoming information.”

(23) Although market participants expect the current target for the federal funds rate to be maintained at this meeting, they do not expect a statement that explicitly identifies risks to growth as well as to inflation and suggests the Committee is no longer predisposed towards policy firming. Market participants are likely to interpret such a statement as implying that the Committee might ease rates sooner than they had previously thought—and perhaps by even more than the half point reduction already built in for 2007. As a result, near-term policy expectations would probably move lower and shorter-term Treasury yields decline. The value of the dollar on foreign exchange markets would likely edge lower and stock prices rally. The implications for long-term yields would depend on whether the statement caused investors to adjust their views about the Committee’s longer-term inflation intentions or the appropriate path for the real interest rate.

(24) If the Committee expected higher inflation than the staff, or if it thought the Greenbook forecast was broadly plausible but viewed inflation as remaining unacceptably high, it might wish to raise the target federal funds rate to 5½ percent at this meeting, as in **Alternative C**. This alternative might be favored if the factors underlying the increase in core inflation in the first half of this year were viewed as likely to be more persistent than envisaged in the staff’s projection, perhaps reflecting an increase in inflation expectations as illustrated in the “Higher expected inflation” simulation presented in the Greenbook. In that regard, the Committee may be concerned that the current level of inflation expectations is already somewhat higher than the objectives cited by a number of policymakers. (The box on the following page discusses various measures of inflation expectations.) Even if the Committee shares the staff’s view that inflation is likely to decline gradually over the forecast, it may view the pace of that decline, in which core PCE inflation is projected to remain

Estimates of inflation expectations

The level of inflation expectations is a key factor affecting monetary policy. Estimates of such expectations can potentially be gleaned from surveys and financial asset prices. But given various technical and measurement issues, these indicators do not typically provide a clean read of investors' expectations of core inflation.

The difference between yields on nominal Treasury securities and those on TIPS contains information about investors' inflation expectations. However, a number of adjustments are necessary to translate the raw spread between nominal and real yields into an estimate of core PCE inflation expectations:

- First, the raw spread includes a liquidity premium. Although the liquidity premium in TIPS is estimated to have declined notably over time, and by some recent calculations now stands very close to zero, this issue somewhat complicates any reading of inflation expectations.
- Second, TIPS compensate investors for inflation with a two-and-a-half month lag, and hence raw prices partially reflect inflation that has already occurred. Adjustments for these "carry effects" are straightforward but imprecise.
- Third, TIPS payments are based on the non-seasonally-adjusted headline CPI, not the core PCE. The staff's forecasts of these two series can be used to translate between price indexes under the assumption that financial markets have a similar assessment.
- Fourth, the raw spread includes an inflation risk premium. To separate inflation risk premiums from expected inflation, Board staff employs a number of methods based on affine term structure models that are necessarily model dependent.

After considering these adjustments and based on the most recently observed differences between yields on nominal Treasury securities and TIPS, the staff's point estimates of expected core PCE inflation from the very near term to ten years ahead vary between about 2.0 and 2.4 percent. However, the caveats associated with these adjustments suggest substantial confidence intervals around these point estimates.

The Desk's recent survey includes primary dealers' forecasts of quarterly core PCE price inflation from the current quarter through the first quarter of 2008, and the average projection across that horizon also ranged from about 2.0 percent to 2.4 percent. The monthly Michigan Survey does not refer to a specific price index, but regressions can be used to infer anticipated core PCE inflation from the survey responses. The most recent reading of 2.9 percent over the next twelve months implies expected core PCE inflation of approximately 2.6 percent over the same period. Unfortunately, limited data preclude a similar mapping for longer-run expectations. Finally, assuming the staff's presumed discrepancy between headline CPI and core PCE, inflation expectations for 2007 and over the next ten years from the August Survey of Professional Forecasters are about 2.4 and 2.1 percent, respectively.

above 2 percent beyond 2008, as unacceptably slow. In the medium-term strategies presented earlier, for example, bringing inflation below 2 percent in the next few years involves raising the federal funds rate to about 6 percent over the next several quarters.

(25) In the statement accompanying Alternative C, the discussion of growth could be identical to that proposed for Alternative B. However, in the second half of the inflation paragraph, rather than listing the various factors contributing to the expected moderation in inflation, the Committee could posit that “Inflation pressures seem likely to moderate over time, but the extent and speed of that moderation is uncertain.” The discussion of inflation could conclude by stating that “In these circumstances, the Committee believed that an additional firming of policy was appropriate to bolster progress towards achieving price stability.” If, despite the firming in policy, the Committee continued to be predominantly concerned with inflation risks, it presumably would want to leave the risk assessment tilted as was proposed for Alternative B. However, that sentiment could perhaps be conveyed more strongly to market participants by adopting the language in paragraph 20 earlier in this Bluebook noting that the Committee “both seeks and expects a gradual reduction in inflation.”

(26) The tightening of policy envisaged under Alternative C would catch market participants unawares. Investors would revise up sharply their expectations for the path of policy over the next year or so. Short- and medium-term nominal and real rates would rise markedly. Nominal long-term yields would probably decline if market participants concluded that the FOMC was seeking a steeper decline in inflation or had a lower objective for inflation than they previously thought. With real rates higher, the foreign exchange value of the dollar would likely rise, and equity prices would probably decline, perhaps sharply.

Money and Debt Forecasts

(27) Under the Greenbook forecast, M2 is projected to expand at around a 4 percent annual rate in the second half of 2006, reflecting moderate growth in nominal income and the restraining effects of past policy tightening. However, as opportunity costs gradually decline given the assumed path of the federal funds rate, M2 growth picks up to around a 5 percent annual rate in 2007 and 2008.

(28) Growth of domestic nonfinancial sector debt is expected to slow to an annual rate of around 6¼ percent on average over the forecast horizon, down from growth of 9½ percent in 2005. The growth of home mortgage debt is expected to step down considerably, reflecting both a deceleration in house prices and declining residential investment. Business debt growth remains moderate over the forecast period, as profits flatten out and firms draw on their accumulated cash to finance growing investment spending. With the budget deficit projected to widen some over the next two years, federal government debt is forecast to expand 6 percent in 2007 and 2008, up from the 4½ percent increase expected in 2006.

Table 2
M2 Growth Under Alternative Policy Paths

	No Change	25 bp Tightening	Greenbook Forecast*	
Money Growth Rates				
Oct-05	5.5	5.5	5.5	
Nov-05	3.5	3.5	3.5	
Dec-05	4.8	4.8	4.8	
Jan-06	10.8	10.8	10.8	
Feb-06	4.0	4.0	4.0	
Mar-06	3.0	3.0	3.0	
Apr-06	3.2	3.2	3.2	
May-06	1.0	1.0	1.0	
Jun-06	5.2	5.2	5.2	
Jul-06	3.7	3.7	3.7	
Aug-06	4.2	4.2	4.2	
Sep-06	2.7	2.7	2.7	
Oct-06	6.2	6.2	6.2	
Nov-06	3.7	3.3	3.7	
Dec-06	3.7	2.9	3.7	
Jan-07	4.0	3.2	4.0	
Feb-07	4.3	3.6	4.3	
Mar-07	4.6	4.1	4.6	
Quarterly Growth Rates				
2006 Q1	6.3	6.3	6.3	
2006 Q2	3.0	3.0	3.0	
2006 Q3	3.8	3.8	3.8	
2006 Q4	4.4	4.2	4.4	
2007 Q1	4.0	3.3	4.0	
2007 Q2	4.8	4.3	4.8	
Annual Growth Rates				
2005	4.0	4.0	4.0	
2006	4.4	4.4	4.4	
2007	4.8	4.5	4.8	
2008	5.1	5.1	5.3	
Growth From To				
Oct-06	Mar-07	4.1	3.4	4.1
2005 Q4	2006 Q3	4.4	4.4	4.4

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

Directive and Balance of Risks Statement

(29) Draft language for the directive and draft risk assessments identical to those presented in Table 1 are provided below.

Directive Wording

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee in the immediate future seeks conditions in reserve markets consistent with maintaining/INCREASING/REDUCING the federal funds rate at/TO an average of around _____ ~~5~~¹/₄ percent.

Risk Assessments

- A. In these circumstances, future policy adjustments will depend on the evolution of the outlook for inflation and economic growth, as implied by incoming information.
- B. Nonetheless, the Committee judges that some inflation risks remain. The extent and timing of any additional firming that may be needed to address these risks will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.
- C. Although the Committee both seeks and expects a gradual reduction in inflation, it continues to view the risks to that outcome as remaining to the upside. The extent and timing of any additional firming that may be needed to address these risks will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.

Appendix A: Measures of the Equilibrium Real Rate

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

The actual real federal funds rate is constructed as the difference between the nominal rate and realized inflation, where the nominal rate is measured as the quarterly average of the observed federal funds rate, and realized inflation is given by the log difference between the staff’s estimate of 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.

Confidence intervals reflect uncertainties about model specification, coefficients, and the level of potential output. The final column of the table indicates the values for the current quarter based on the estimation for the previous Bluebook, except that the TIPS-based measure and the actual real funds rate are 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 1988:1-2005:4; 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	$i_t = 1.17i_{t-1} - 0.37i_{t-2} + 0.20[1.04 + 1.76\pi_t + 3.32(y_t - y_t^*) - 2.37(y_{t-1} - y_{t-1}^*)]$
Forecast-based rule	$i_t = 1.16i_{t-1} - 0.36i_{t-2} + 0.20[0.89 + 1.74\pi_{t+2 t} + 2.32(y_{t+1 t} - y_{t+1 t}^*) - 1.40(y_{t-1} - y_{t-1}^*)]$
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 is followed starting at this FOMC meeting. This quarter's prescription is a weighted average of the actual value of the federal funds rate thus far this quarter and the value obtained from the FRB/US model simulations using the timing of this meeting within the quarter to determine the weights. Confidence intervals are based on stochastic simulations of the FRB/US model with shocks drawn from the estimated residuals over 1986-2004.

Information from Financial Markets: The expected funds rate path is based on federal funds and Eurodollar futures quotes. The confidence intervals for this path are obtained from prices of at-the-money options contracts that are traded on the Chicago Mercantile Exchange.

Near-Term Prescriptions of Simple Policy Rules: These prescriptions are calculated using Greenbook projections for inflation and the output gap. The first-difference rule's one-quarter-ahead prescription is computed using that rule's prescription for the current quarter.

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**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
05 -- High	4.30	4.01	4.08	4.37	4.49	4.30	4.52	4.59	4.79	5.04	2.11	2.22	6.48	5.24	6.37	5.22
05 -- Low	2.19	1.86	2.31	2.63	2.50	2.24	3.11	3.58	3.97	4.28	0.98	1.50	5.64	4.72	5.53	4.10
06 -- High	5.34	5.20	5.13	5.33	5.50	5.30	5.32	5.20	5.32	5.45	2.60	2.68	6.94	5.31	6.80	5.83
06 -- 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	6.17	4.76	6.10	5.15
Monthly																
Oct 05	3.78	3.49	3.79	4.13	4.13	3.84	4.31	4.34	4.56	4.77	1.69	1.94	6.30	5.13	6.07	4.86
Nov 05	4.00	3.91	3.97	4.30	4.31	4.01	4.44	4.46	4.66	4.85	1.96	2.09	6.39	5.22	6.33	5.14
Dec 05	4.16	3.67	3.98	4.33	4.45	4.23	4.43	4.39	4.57	4.76	2.07	2.15	6.32	5.18	6.27	5.17
Jan 06	4.29	4.10	4.34	4.47	4.56	4.36	4.42	4.35	4.50	4.67	1.92	2.03	6.24	5.11	6.15	5.17
Feb 06	4.49	4.38	4.54	4.69	4.72	4.47	4.69	4.60	4.66	4.75	1.97	2.06	6.27	5.12	6.25	5.34
Mar 06	4.59	4.55	4.63	4.79	4.88	4.61	4.77	4.72	4.82	4.93	2.08	2.21	6.41	5.10	6.32	5.42
Apr 06	4.79	4.60	4.72	4.90	5.03	4.80	4.92	4.90	5.07	5.24	2.25	2.41	6.68	5.19	6.51	5.62
May 06	4.94	4.69	4.84	5.01	5.15	4.95	5.00	4.98	5.19	5.36	2.26	2.45	6.75	5.24	6.60	5.63
Jun 06	4.99	4.71	4.92	5.18	5.35	5.12	5.15	5.04	5.18	5.30	2.41	2.54	6.78	5.24	6.68	5.71
Jul 06	5.24	4.89	5.08	5.27	5.46	5.24	5.15	5.02	5.15	5.26	2.43	2.52	6.76	5.21	6.76	5.79
Aug 06	5.25	5.17	5.09	5.17	5.38	5.22	4.93	4.79	4.94	5.09	2.24	2.32	6.59	4.98	6.52	5.64
Sep 06	5.25	4.76	4.93	5.08	5.34	5.21	4.78	4.64	4.80	4.94	2.35	2.35	6.43	4.82	6.40	5.56
Weekly																
Aug 18 06	5.23	5.16	5.10	5.19	5.37	5.22	4.95	4.81	4.97	5.12	2.24	2.33	6.61	4.97	6.52	5.65
Aug 25 06	5.25	5.17	5.10	5.17	5.36	5.21	4.89	4.73	4.88	5.04	2.23	2.27	6.53	4.93	6.48	5.60
Sep 1 06	5.26	5.15	5.06	5.14	5.35	5.20	4.84	4.70	4.85	4.99	2.27	2.29	6.50	4.91	6.44	5.59
Sep 8 06	5.24	4.89	4.97	5.12	5.34	5.21	4.82	4.71	4.88	5.02	2.33	2.36	6.52	4.88	6.47	5.63
Sep 15 06	5.24	4.78	4.93	5.11	5.35	5.20	4.84	4.71	4.87	5.00	2.39	2.39	6.49	4.85	6.43	5.60
Sep 22 06	5.24	4.72	4.94	5.07	5.34	5.20	4.78	4.63	4.79	4.92	2.40	2.37	6.40	4.79	6.40	5.54
Sep 29 06	5.29	4.61	4.88	5.01	5.32	5.22	4.69	4.53	4.68	4.82	2.29	2.29	6.32	4.77	6.31	5.47
Oct 6 06	5.28	4.73	4.92	5.02	5.32	5.19	4.68	4.54	4.70	4.85	2.35	2.33	6.36	4.77	6.30	5.46
Oct 13 06	5.24	4.88	5.03	5.11	5.33	5.20	4.87	4.72	4.85	5.00	2.51	2.47	6.50	4.76	6.37	5.56
Oct 20 06	--	5.03	5.09	5.15	5.33	5.21	4.87	4.72	4.85	5.00	2.54	2.48	--	--	6.36	5.57
Daily																
Oct 3 06	5.25	4.70	4.91	5.02	5.33	5.22	4.68	4.54	4.69	4.84	2.35	2.32	6.34	--	--	--
Oct 4 06	5.23	4.77	4.93	5.00	5.32	5.21	4.62	4.48	4.65	4.80	2.32	2.30	6.31	--	--	--
Oct 5 06	5.23	4.80	4.94	5.03	5.31	5.20	4.67	4.53	4.69	4.85	2.34	2.32	6.35	--	--	--
Oct 6 06	5.22	4.74	4.94	5.05	5.33	5.10	4.76	4.63	4.78	4.93	2.43	2.39	6.43	--	--	--
Oct 9 06	5.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oct 10 06	5.28	4.78	5.00	5.09	5.32	5.21	4.83	4.69	4.83	4.97	2.48	2.44	6.47	--	--	--
Oct 11 06	5.25	4.90	5.02	5.10	5.32	5.20	4.87	4.72	4.86	5.00	2.52	2.48	6.51	--	--	--
Oct 12 06	5.25	4.93	5.06	5.13	5.33	5.19	4.87	4.72	4.85	5.00	2.51	2.48	6.50	--	--	--
Oct 13 06	5.21	4.92	5.05	5.13	5.33	5.20	4.89	4.74	4.88	5.03	2.54	2.49	6.53	--	--	--
Oct 16 06	5.28	5.00	5.09	5.15	5.32	5.22	4.88	4.73	4.86	5.01	2.52	2.47	6.50	--	--	--
Oct 17 06	5.21	5.06	5.09	5.15	5.32	5.19	4.86	4.71	4.85	5.00	2.53	2.48	6.49	--	--	--
Oct 18 06	5.23	5.05	5.09	5.14	5.33	--	4.86	4.70	4.84	4.98	2.56	2.49	6.47	--	--	--
Oct 19 06	5.24 ^p	5.02	5.10	5.16	5.33	--	4.88	4.73	4.86	5.00	2.58	2.52	--	--	--	--

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
<u>Annual growth rates (%):</u>			
<u>Annually (Q4 to Q4)</u>			
2003	7.4	5.6	5.1
2004	5.4	5.3	5.3
2005	0.3	4.0	5.1
<u>Quarterly (average)</u>			
2005-Q4	-0.1	5.0	6.4
2006-Q1	2.2	6.3	7.4
Q2	0.9	3.0	3.5
Q3 p	-4.7	3.8	5.9
<u>Monthly</u>			
2005-Sep.	-3.8	5.5	7.9
Oct.	1.7	5.5	6.5
Nov.	0.7	3.5	4.2
Dec.	-5.8	4.8	7.6
2006-Jan.	10.3	10.8	10.9
Feb.	-4.1	4.0	6.1
Mar.	7.9	3.0	1.7
Apr.	1.8	3.2	3.6
May	5.5	1.0	-0.1
June	-19.6	5.2	11.6
July	2.6	3.7	4.0
Aug.	-2.8	4.2	5.9
Sep. p	-10.9	2.7	6.2
<u>Levels (\$billions):</u>			
<u>Monthly</u>			
2006-May	1393.1	6787.8	5394.7
June	1370.4	6817.3	5447.0
July	1373.4	6838.6	5465.2
Aug.	1370.2	6862.3	5492.0
Sep. p	1357.8	6878.0	5520.2
<u>Weekly</u>			
2006-Sep. 4	1388.9	6891.0	5502.1
11	1351.0	6860.0	5509.0
18	1345.3	6881.1	5535.8
25	1360.2	6889.5	5529.3
Oct. 2p	1367.7	6903.2	5535.5
9p	1378.6	6934.0	5555.4

p preliminary

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

October 19, 2006

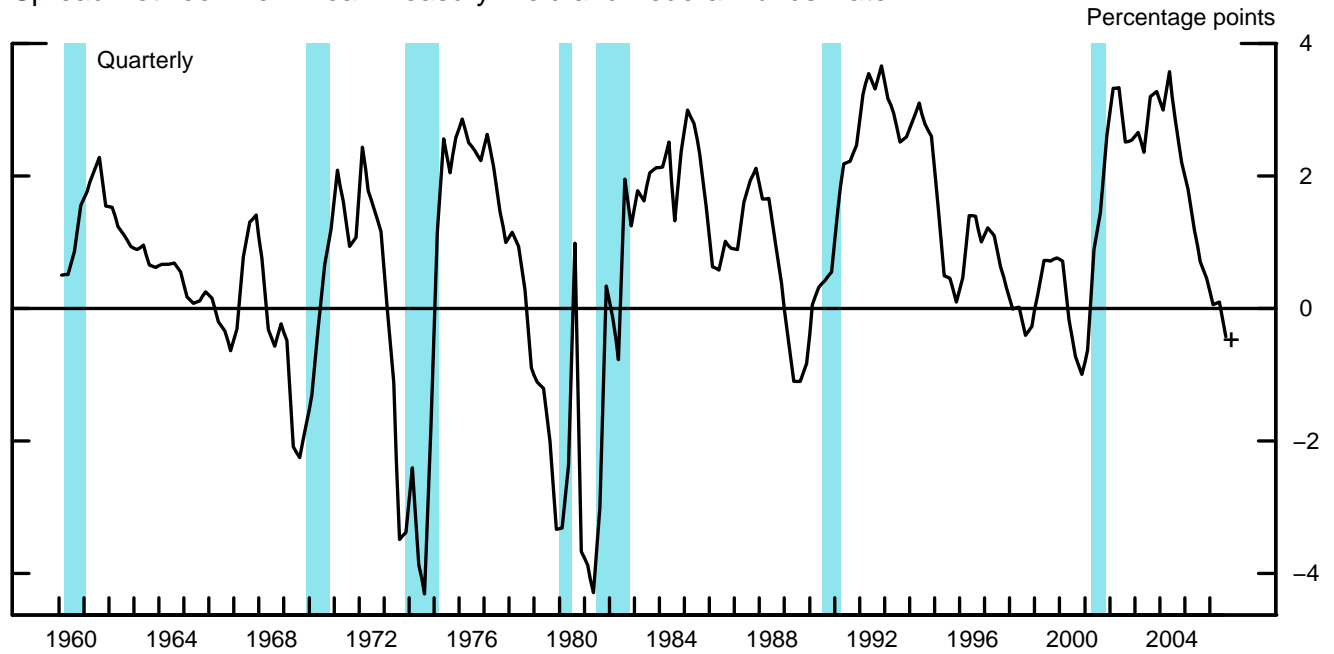
	Treasury Bills			Treasury Coupons						Federal Agency Redemptions (-)	Net change total outright holdings ⁴	Net RPs ⁵		
	Net Purchases ²	Redemptions (-)	Net Change	Net Purchases ³				Redemptions (-)	Net Change			Short-Term ⁶	Long-Term ⁷	Net Change
				< 1	1-5	5-10	Over 10							
2003	18,150	---	18,150	6,565	7,814	4,107	220	---	18,706	10	36,846	2,223	1,036	3,259
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
2005 QIII	4,743	---	4,743	1,298	5,025	1,118	90	757	6,774	---	11,517	964	1,538	2,502
QIV	1,512	---	1,512	1,596	2,789	800	902	189	5,897	---	7,410	-1,202	-1,293	-2,496
2006 QI	4,099	---	4,099	1,200	7,443	1,704	1,219	1,321	10,245	---	14,345	793	1,839	2,631
QII	---	---	---	1,375	6,063	1,181	---	1,217	7,402	---	7,402	-627	-4,413	-5,040
QIII	1,649	---	1,649	415	3,323	548	228	3,931	583	---	2,232	-3,229	-839	-4,068
2006 Feb	1,308	---	1,308	1,200	2,498	25	924	---	4,647	---	5,955	-396	-3,672	-4,068
Mar	1,228	---	1,228	---	2,136	174	90	---	2,400	---	3,628	393	-232	162
Apr	---	---	---	---	1,096	---	---	---	1,096	---	1,096	626	-3,995	-3,368
May	---	---	---	1,375	2,317	101	---	1,217	2,576	---	2,576	-756	2,511	1,755
Jun	---	---	---	---	2,650	1,080	---	---	3,730	---	3,730	-2,633	-2,077	-4,710
Jul	1,649	---	1,649	---	549	---	---	3,931	-3,382	---	-1,733	-909	110	-800
Aug	---	---	---	415	1,454	---	---	---	1,869	---	1,869	-231	548	318
Sep	---	---	---	---	1,320	548	228	---	2,096	---	2,096	-469	-2,291	-2,761
2006 Jul 26	---	---	---	---	---	---	---	---	---	---	---	-6,472	3,000	-3,472
Aug 2	---	---	---	---	---	---	---	---	---	---	---	5,587	---	5,587
Aug 9	---	---	---	---	---	---	---	---	---	---	---	-3,477	-3,000	-6,477
Aug 16	---	---	---	---	---	---	---	---	---	---	---	3,052	1,000	4,052
Aug 23	---	---	---	---	---	---	---	---	---	---	---	-5,503	5,000	-503
Aug 30	---	---	---	415	1,454	---	---	---	1,869	---	1,869	4,592	---	4,592
Sep 6	---	---	---	---	---	---	---	---	---	---	---	2,681	-2,000	681
Sep 13	---	---	---	---	1,320	548	228	---	2,096	---	2,096	-6,144	-2,000	-8,144
Sep 20	---	---	---	---	---	---	---	---	---	---	---	1,770	-1,000	770
Sep 27	---	---	---	---	---	---	---	---	---	---	---	-1,680	-2,000	-3,680
Oct 4	---	---	---	---	---	---	---	---	---	---	---	4,465	-2,000	2,465
Oct 11	---	---	---	---	---	---	---	---	---	---	---	-2,442	4,000	1,558
Oct 18	---	---	---	---	1,395	33	---	3,749	-2,321	---	-2,321	-2,913	2,000	-913
2006 Oct 19	---	---	---	---	---	---	---	---	---	---	---	3,506	---	3,506
Intermeeting Period														
Sep 20-Oct 19	---	---	---	---	1,395	33	---	3,749	-2,321	---	-2,321	5,087	2,000	7,087
Memo: LEVEL (bil. \$)														
Oct 19			277.0	129.1	217.2	61.7	81.6		489.6	---	766.7	-21.6	15.0	-6.6

1. Change from end-of-period to end-of-period. Excludes changes in compensation for the effects of inflation on the principal of inflation-indexed securities.
2. Outright purchases less outright sales (in market and with foreign accounts).
3. Outright purchases less outright sales (in market and with foreign accounts). Includes short-term notes acquired in exchange for maturing bills. Excludes maturity shifts and rollovers of maturing issues, except the rollover of inflation compensation.

4. Includes redemptions (-) of Treasury and agency securities.
5. RPs outstanding less reverse RPs.
6. Original maturity of 13 days or less.
7. Original maturity of 14 to 90 days.

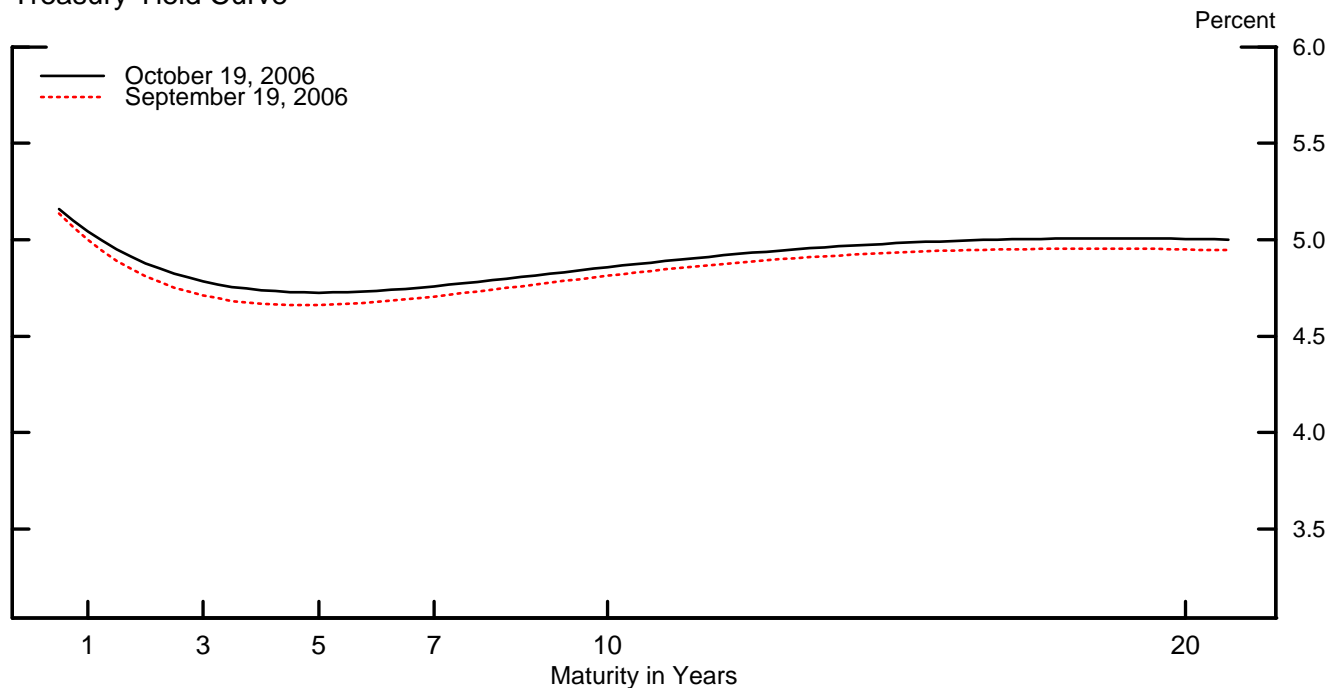
Treasury Yield Curve

Spread Between Ten-Year Treasury Yield and Federal Funds Rate



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

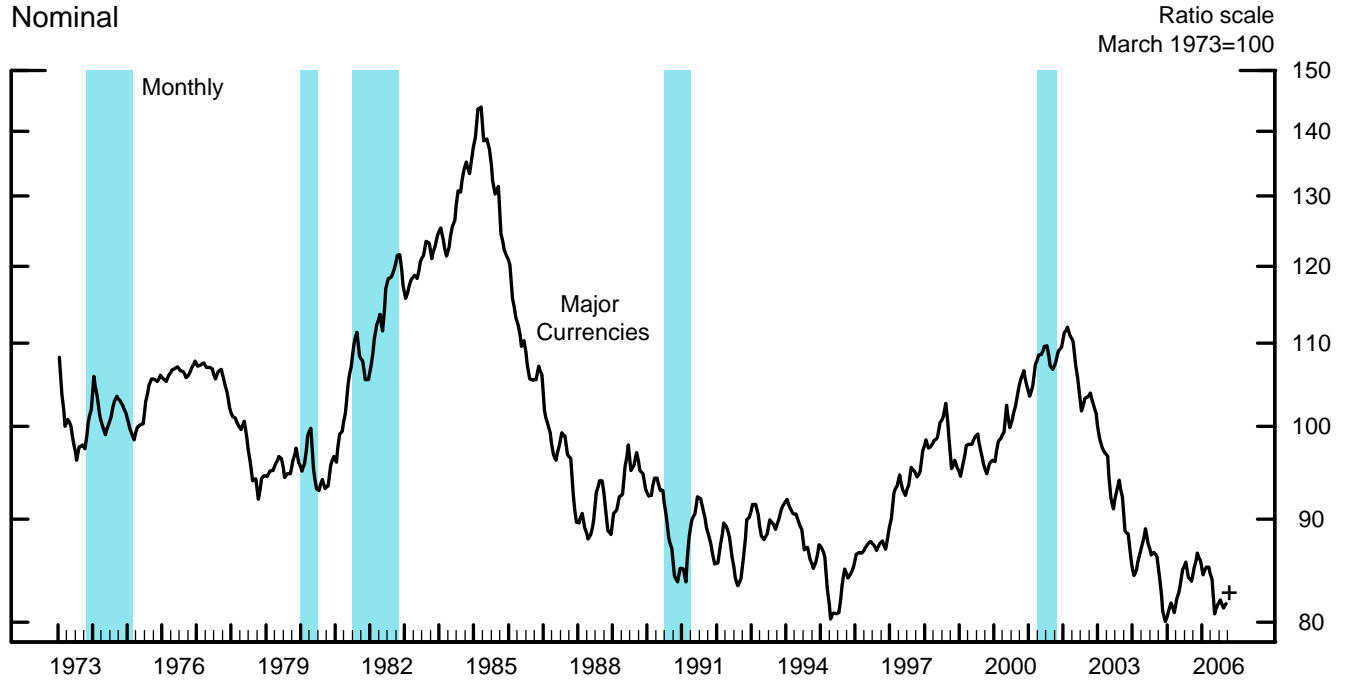
Treasury Yield Curve*



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

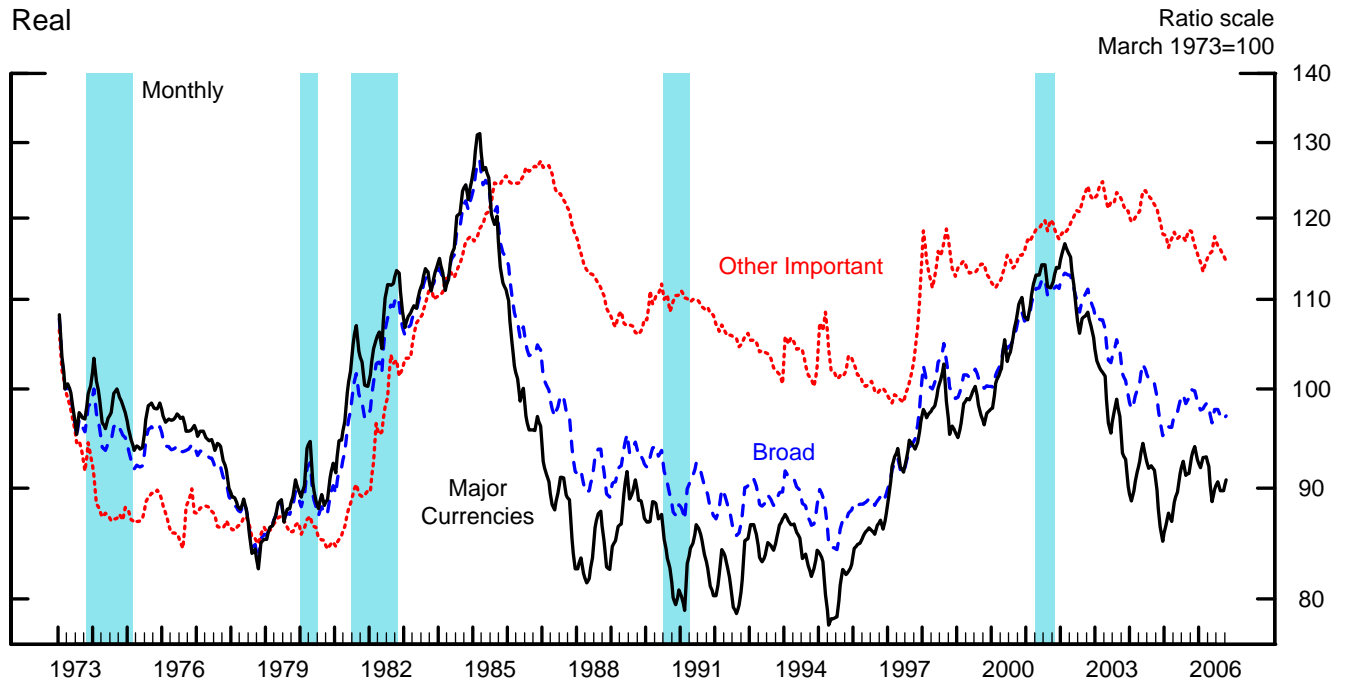
Dollar Exchange Rate Indexes

Nominal



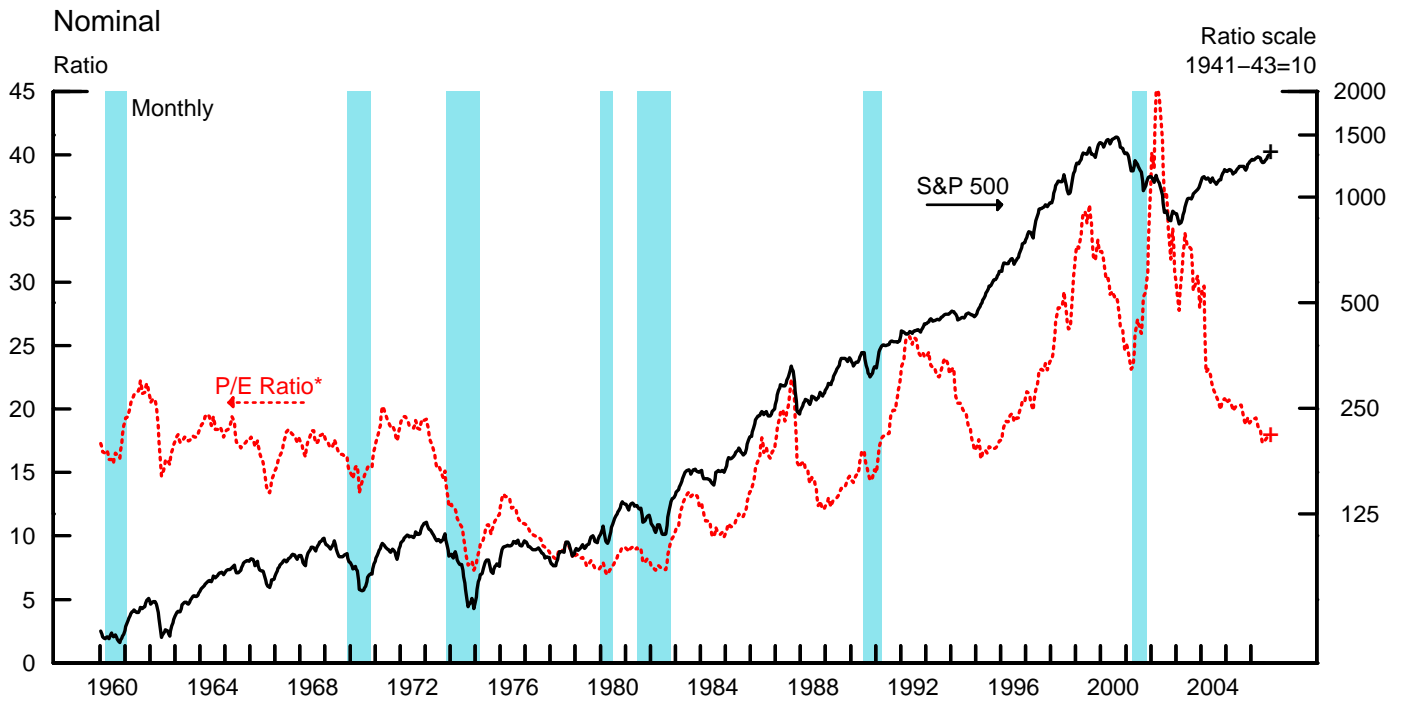
+ Denotes most recent weekly value.

Real

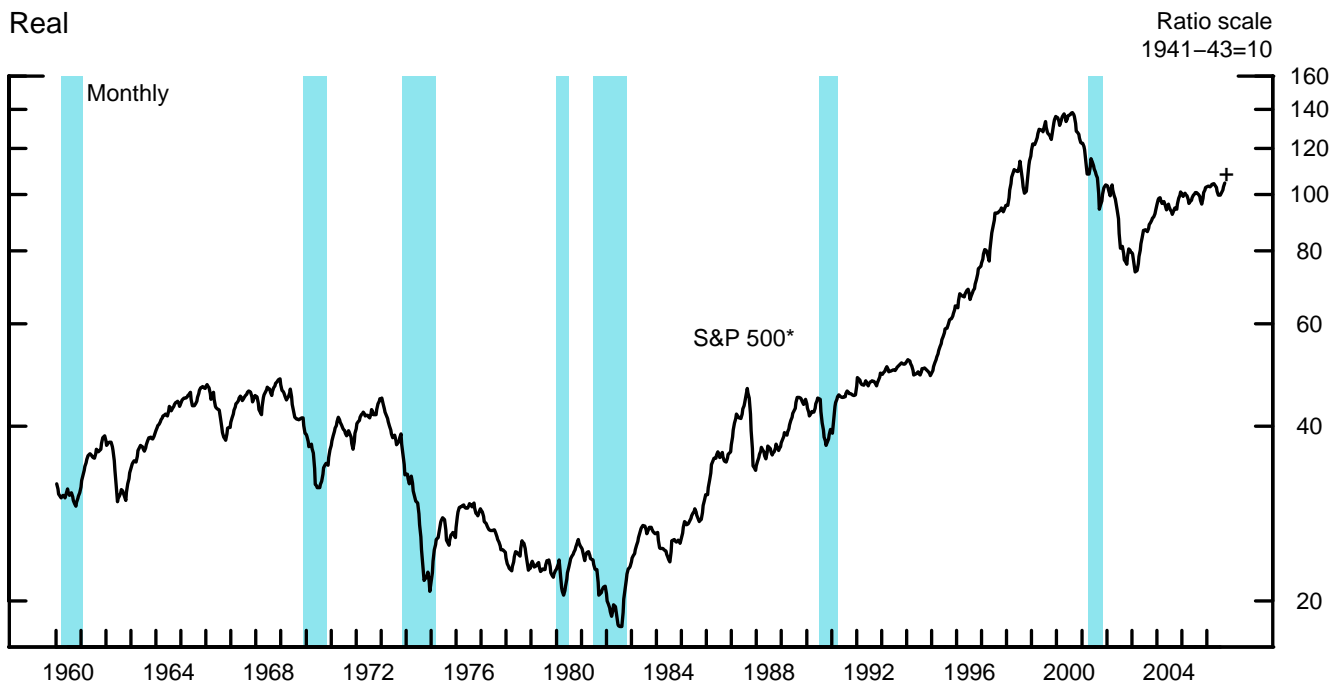


Note. The major currencies index is the trade-weighted average of currencies of the euro area, Canada, Japan, the U.K., Switzerland, Australia, and Sweden. The other important trading partners index is the trade-weighted average of currencies of 19 other important trading partners. The Broad index is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

Stock Indexes



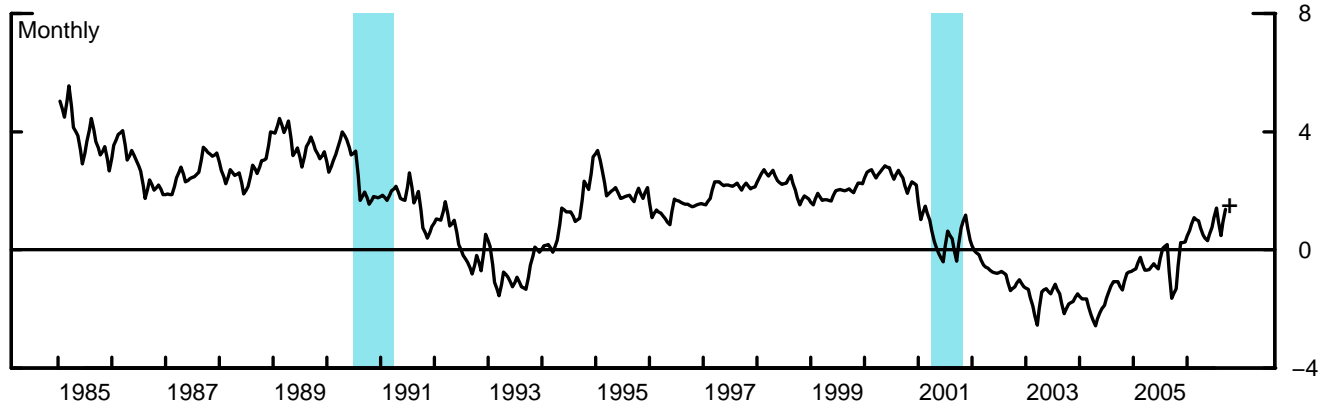
* Based on trailing four-quarter earnings.
+ Denotes most recent weekly value.



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

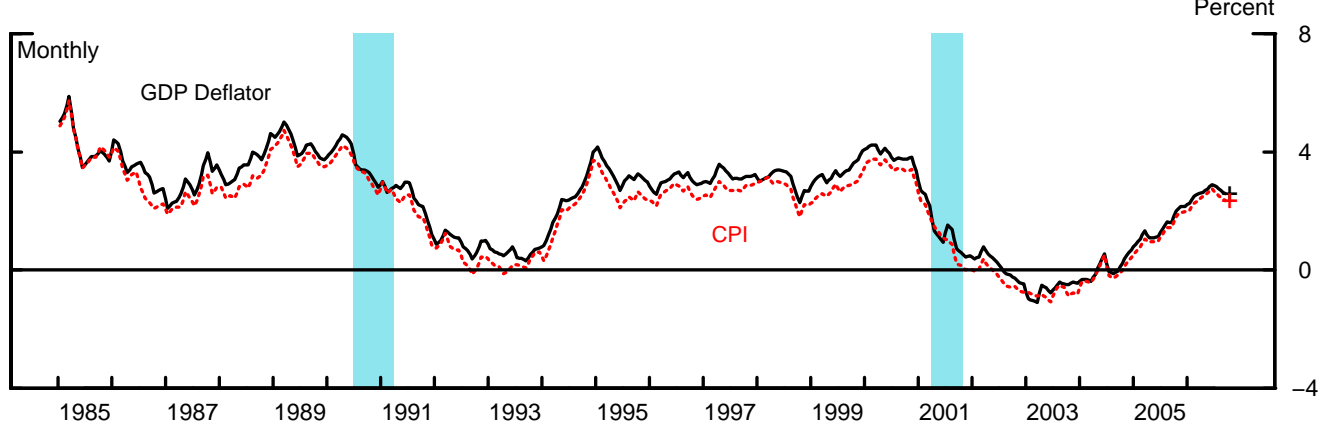
One-Year Real Interest Rates

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



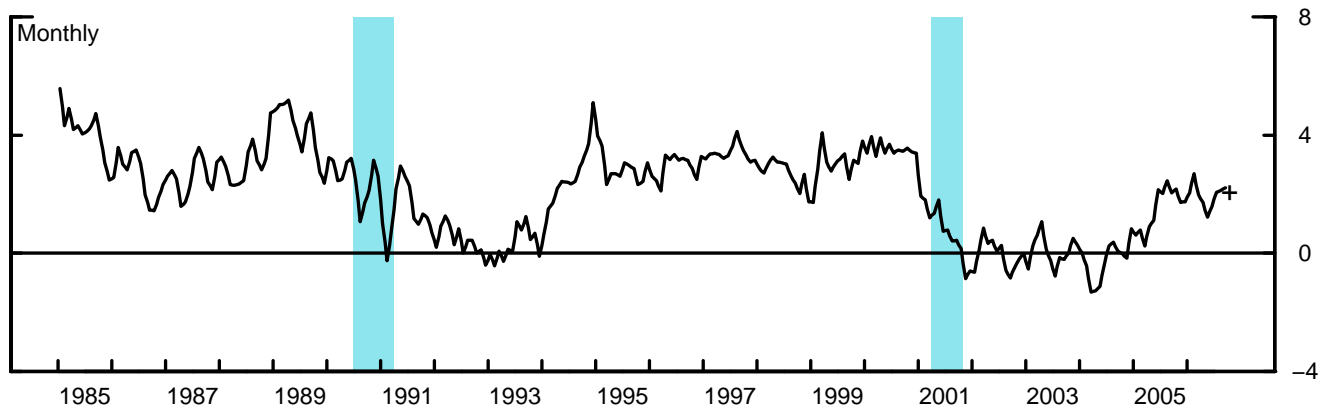
* Mean value of respondents.

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.

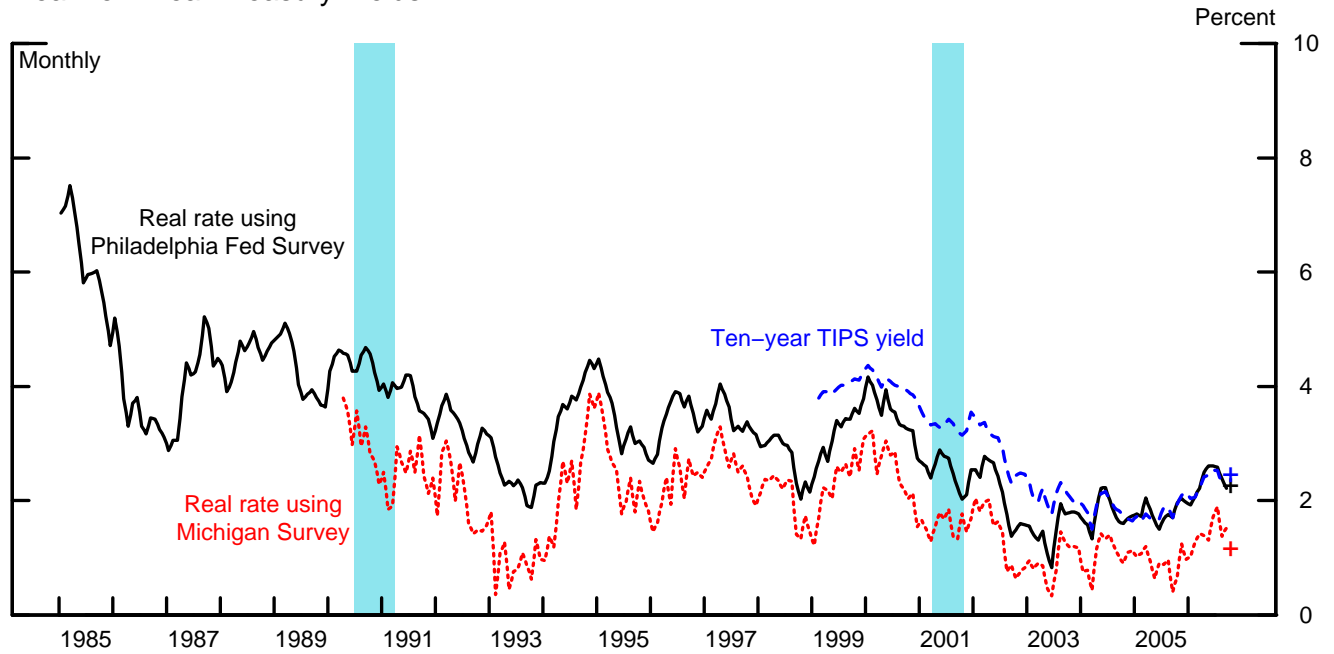
One-Year Treasury Constant Maturity Yield Less Change in the Core CPI from Three Months Prior



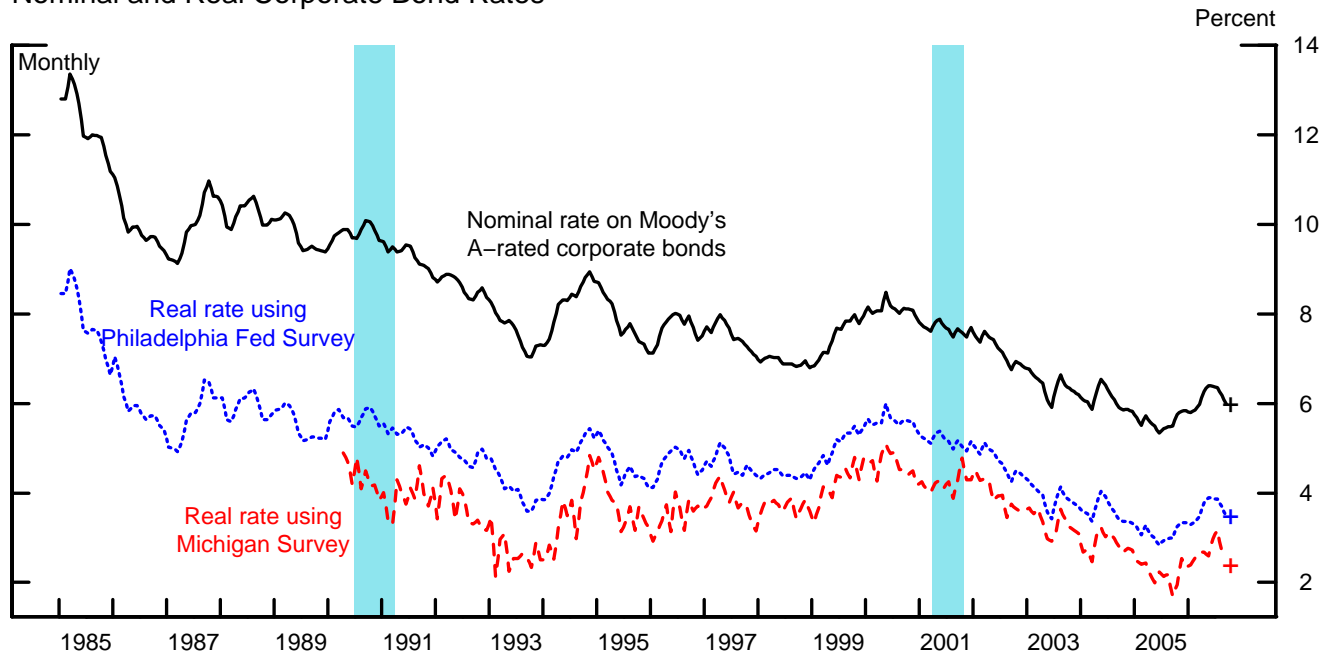
+ Denotes most recent weekly Treasury constant maturity yield less most recent inflation expectation.
Note. Blue shaded regions denote NBER-dated recessions.

Long-Term Real Interest Rates*

Real Ten-Year Treasury Yields



Nominal and Real Corporate Bond Rates



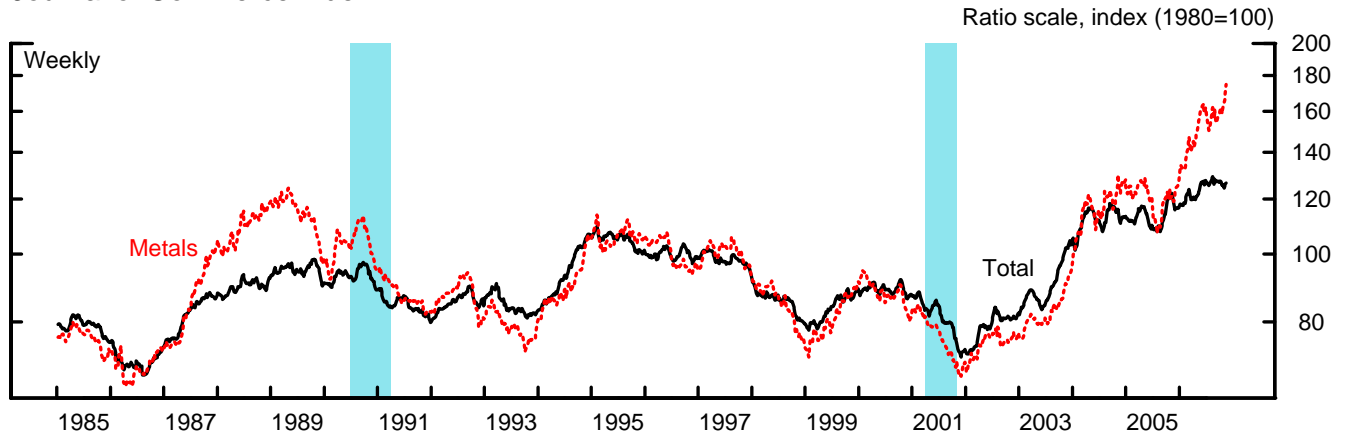
* For real rates, measures using the Philadelphia Fed Survey employ the ten-year inflation expectations from the Blue Chip Survey until April 1991 and the Philadelphia Federal Reserve Bank Survey of Professional Forecasters thereafter (median value of respondents). Measures using the Michigan Survey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

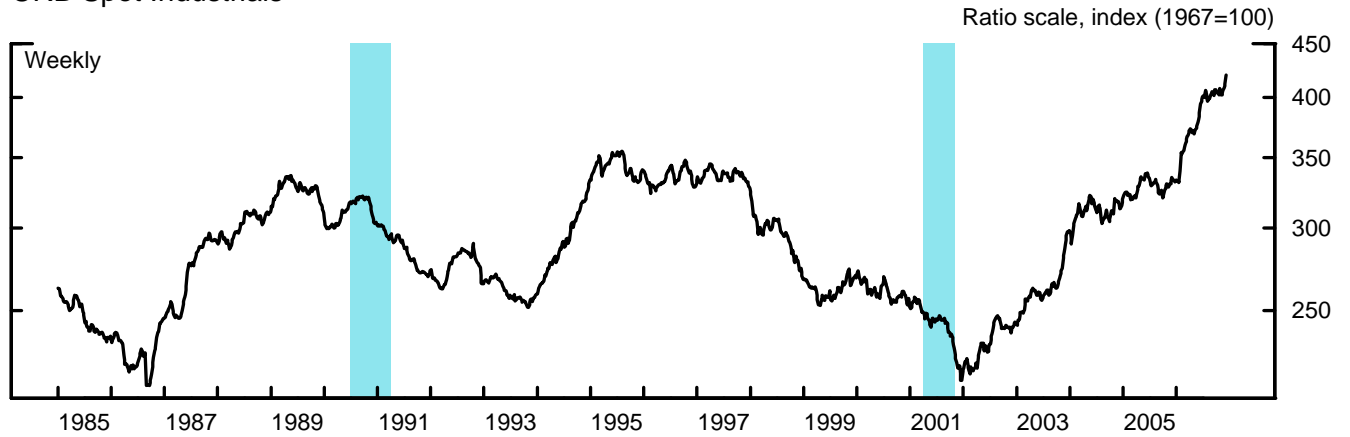
Note. Blue shaded regions denote NBER-dated recessions.

Commodity Price Measures

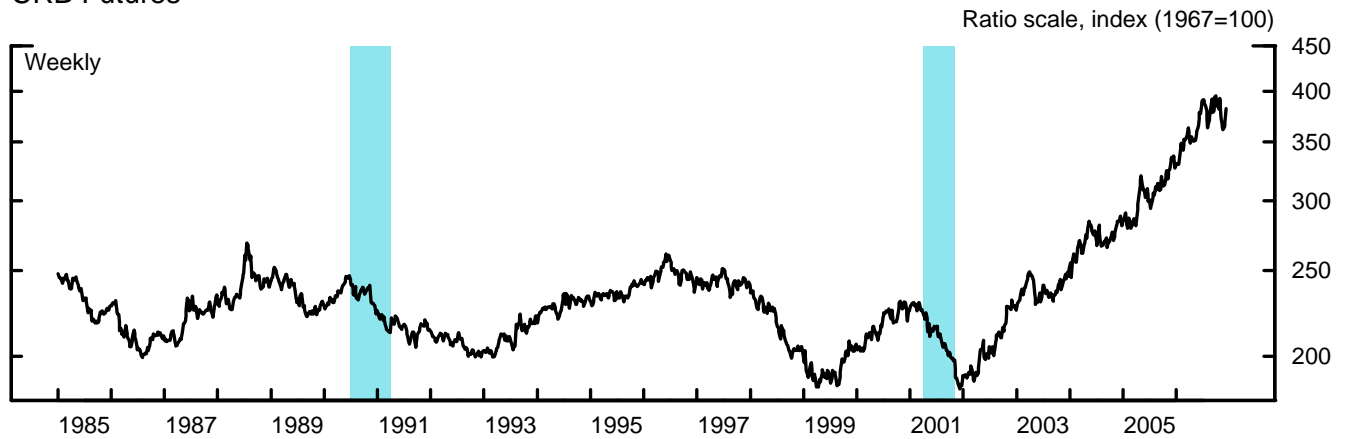
Journal of Commerce Index



CRB Spot Industrials



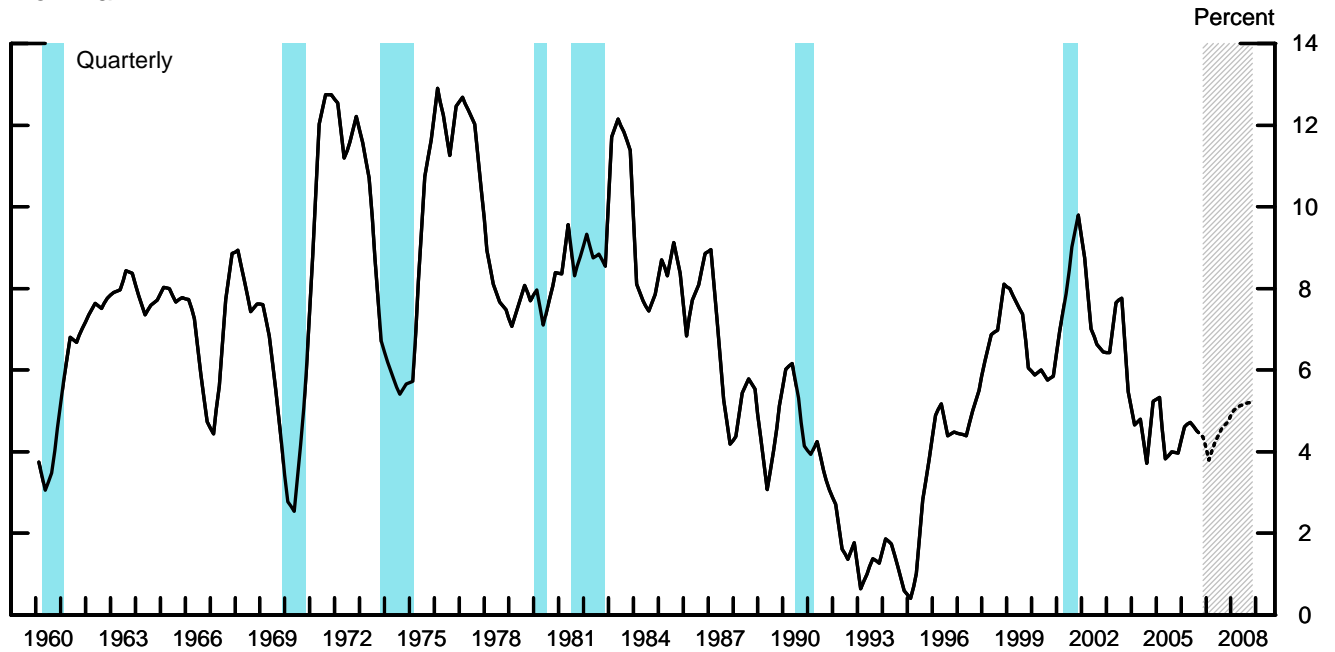
CRB Futures



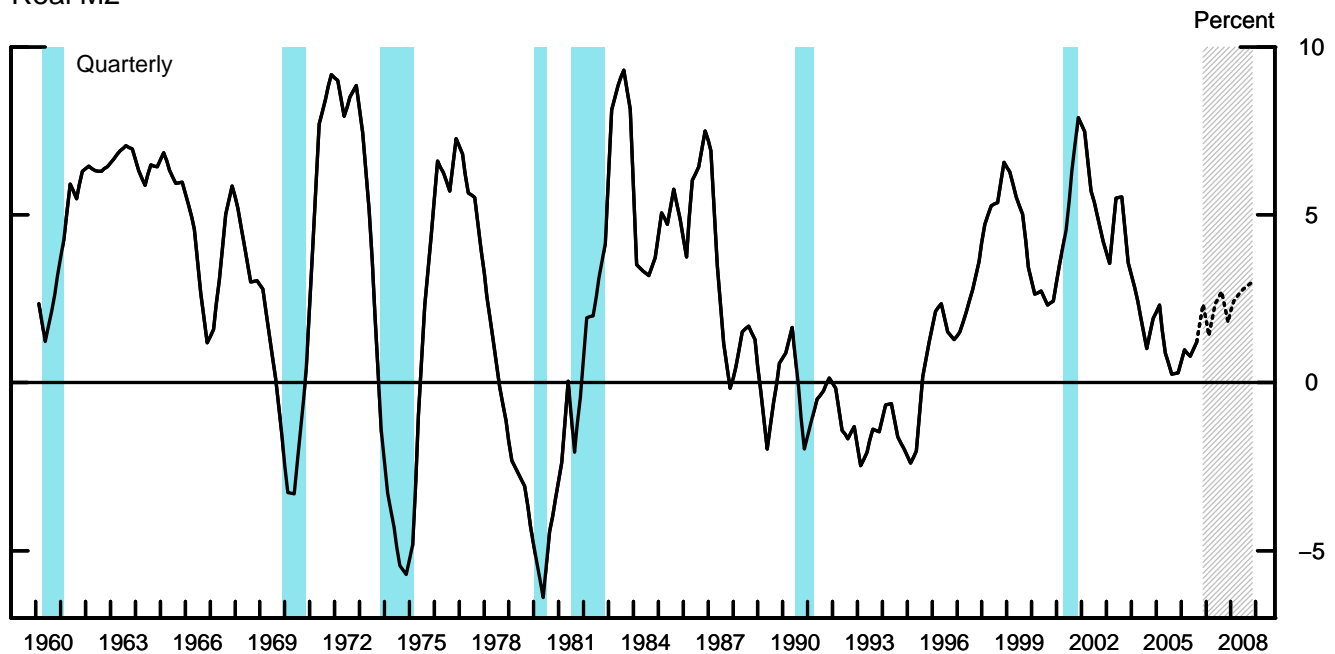
Note. Blue shaded regions denote NBER-dated recessions.

Growth of M2

Nominal M2

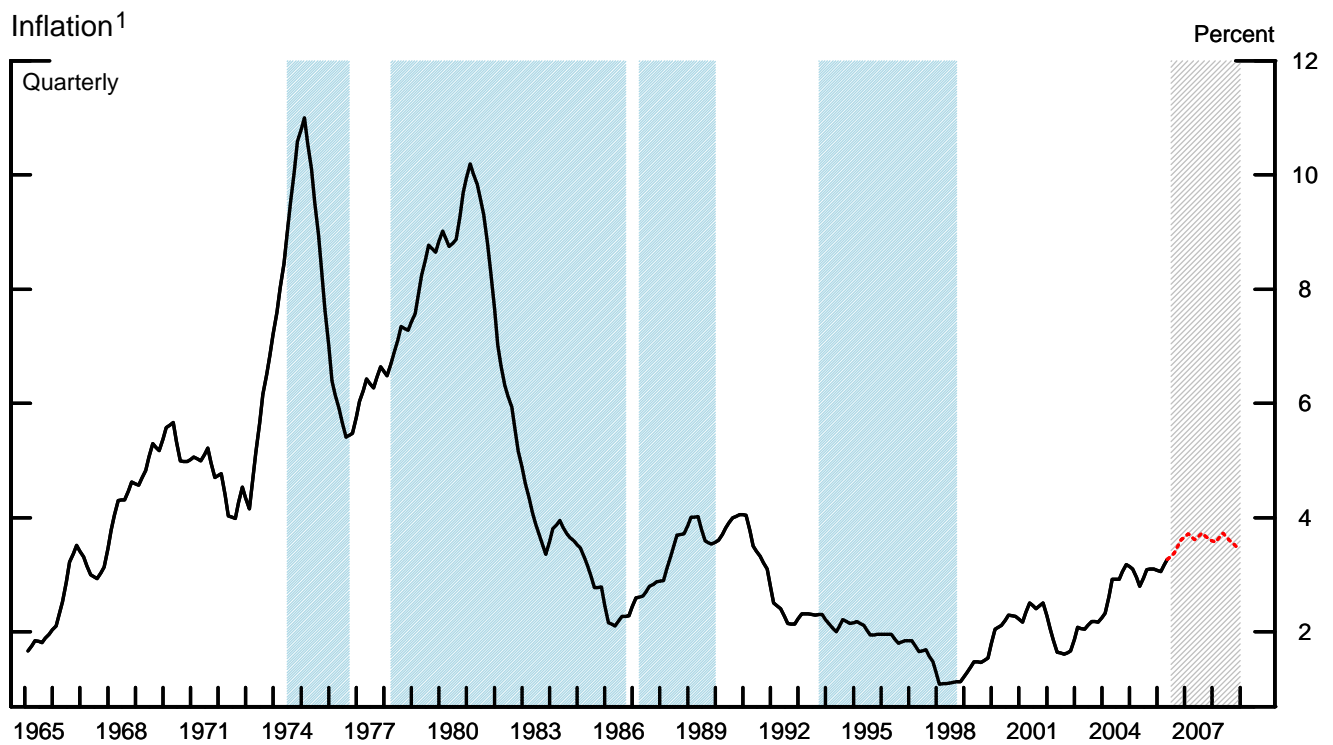
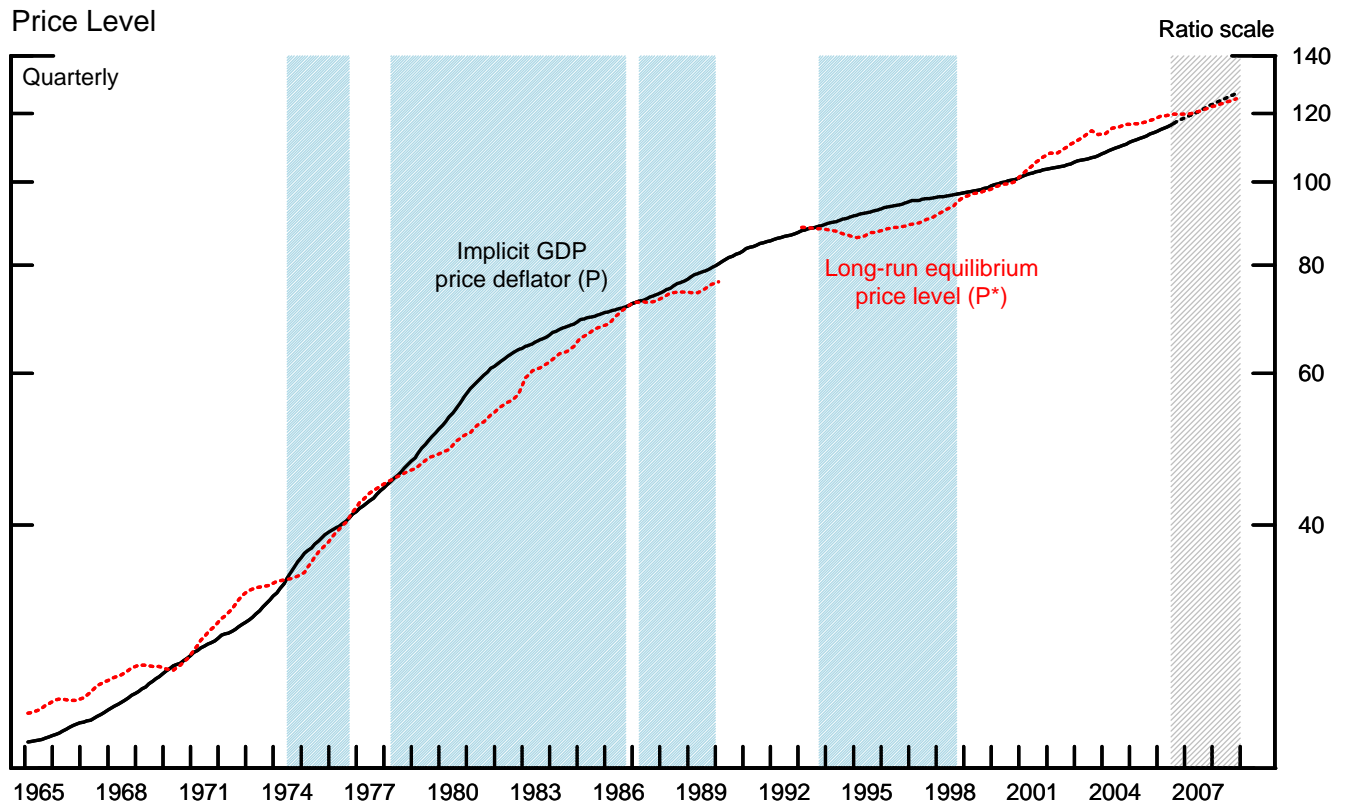


Real M2



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.