

Prefatory Note

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MARCH 15, 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**

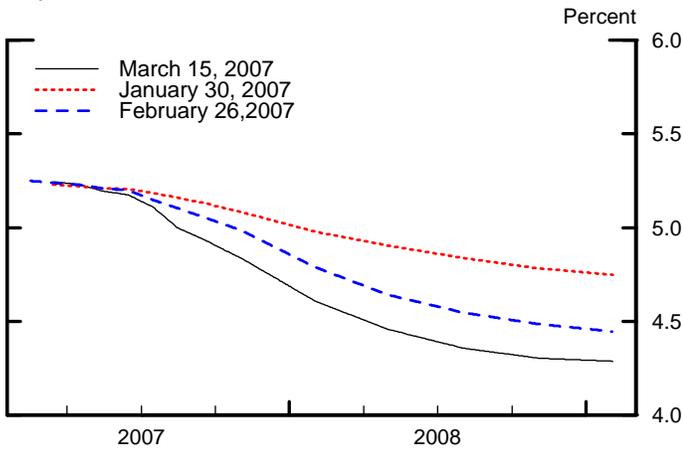
(1) The FOMC's decision at its January meeting to leave the federal funds rate target unchanged at 5¹/₄ percent accorded with market expectations, but the accompanying statement was reportedly read as a sign that the Committee was more sanguine about inflation prospects than in December, and the expected path for monetary policy later this year and beyond edged lower that day.¹ Policy expectations declined a bit more in the wake of the Chairman's semiannual monetary policy testimony, which apparently reinforced investors' beliefs that the FOMC anticipated contained inflation pressures as well as subdued GDP growth. The subsequent release of the minutes of the January meeting elicited little reaction. Economic data releases were somewhat weaker than expected on balance over the first few weeks of the intermeeting period and, by mid-February, policy expectations had moved appreciably lower (Chart 1).

(2) Financial market volatility increased sharply in the second half of the intermeeting period amid an apparent pullback from risk-taking that was reportedly spurred by mixed news on domestic economic activity, mounting concerns about the subprime mortgage sector, and significant declines in foreign equity prices. The first downdraft in U.S. stock prices occurred on February 27, kicked off by a sharp correction in the Chinese equity market. U.S. equity markets fell sharply from recent highs, Treasury yields dropped, credit spreads widened, and the expected path of the federal funds rate rotated down (Chart 2). Despite sharp increases in volatility on a

¹ The effective federal funds rate averaged 5.26 percent over the intermeeting period. During the period, the Desk purchased \$1.9 billion of Treasury coupon securities in the market. The volume of outstanding long-term RPs increased by \$6 billion, to \$21 billion, reflecting a temporary increase in the foreign RP pool.

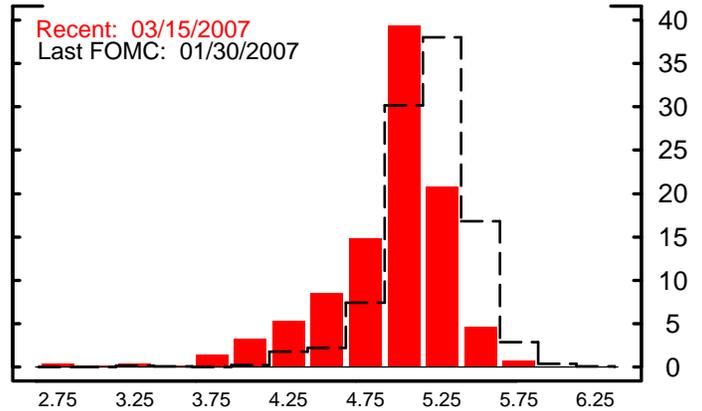
Chart 1 Interest Rate Developments

Expected Federal Funds Rates*



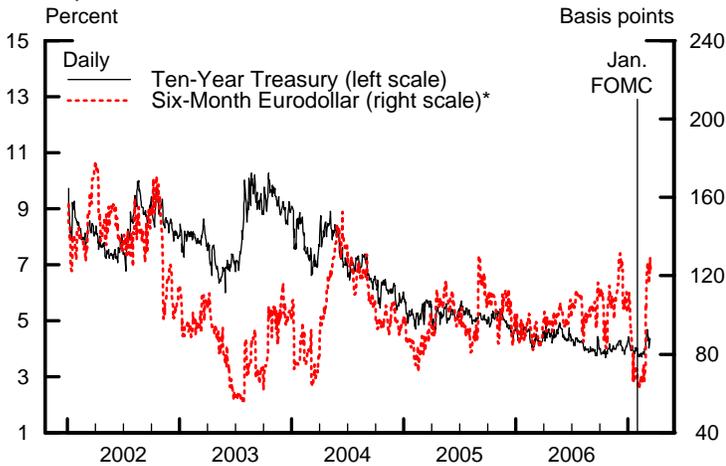
*Estimates from federal funds and Eurodollar futures, with an allowance for term premiums and other adjustments.

Implied Distribution of Federal Funds Rate about Six Months Ahead*



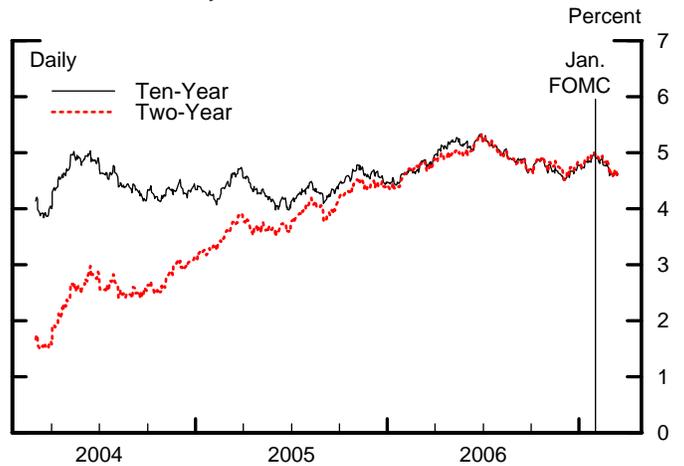
*Derived from options on Eurodollar futures contracts, with term premium and other adjustments to estimate expectations for the federal funds rate.

Implied Volatilities



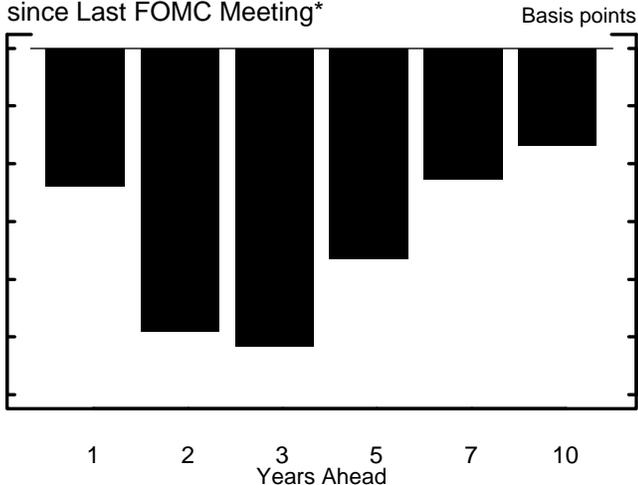
*Width of a 90 percent confidence interval estimated from the term structures for the expected federal funds rate and implied volatility.

Nominal Treasury Yields*



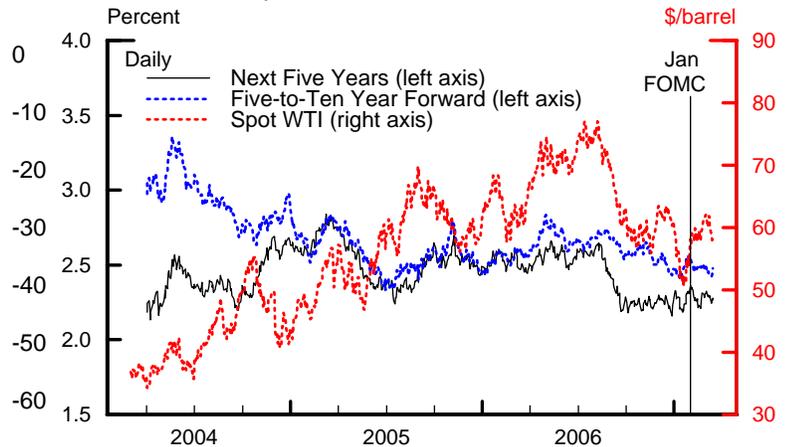
*Par yields from a smoothed nominal off-the-run Treasury yield curve.

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



*Forward rates are the one-year rates maturing at the end of the year shown on the horizontal axis that are implied by the smoothed Treasury yield curve.

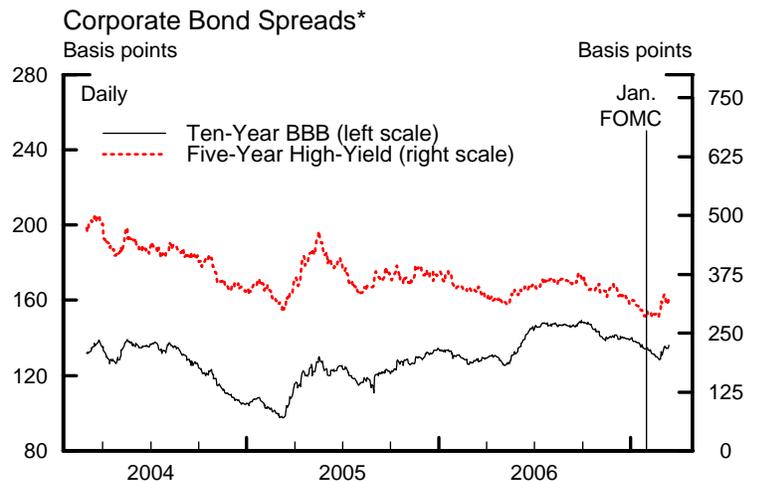
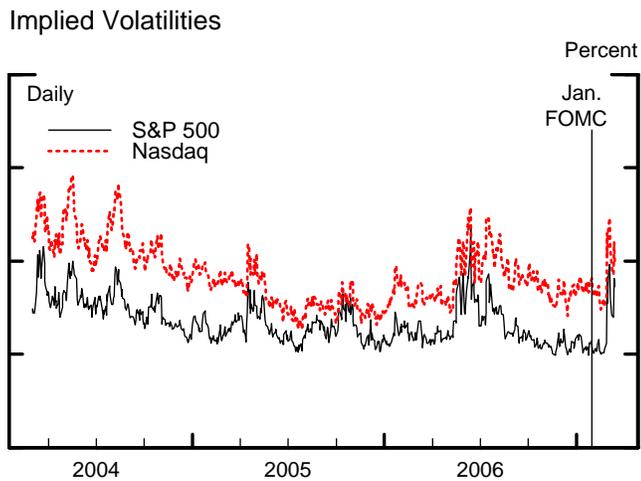
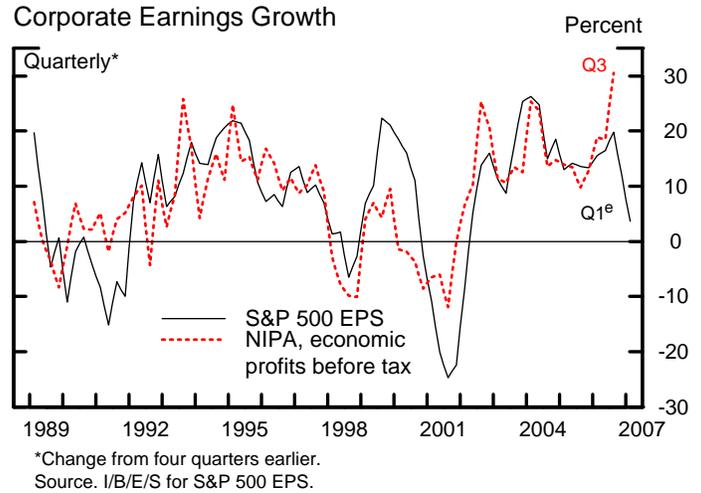
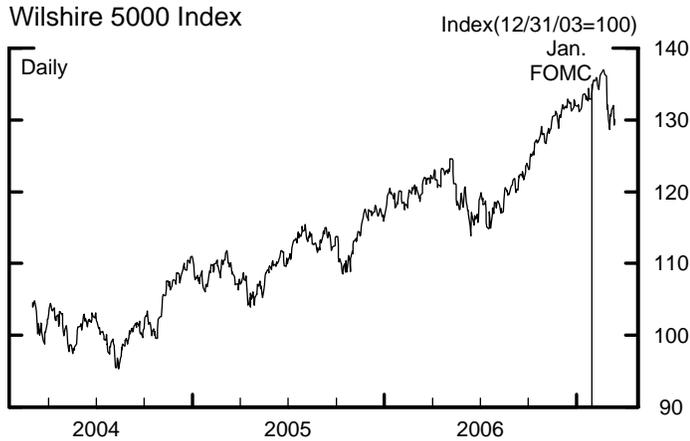
Inflation Compensation and Oil Prices*



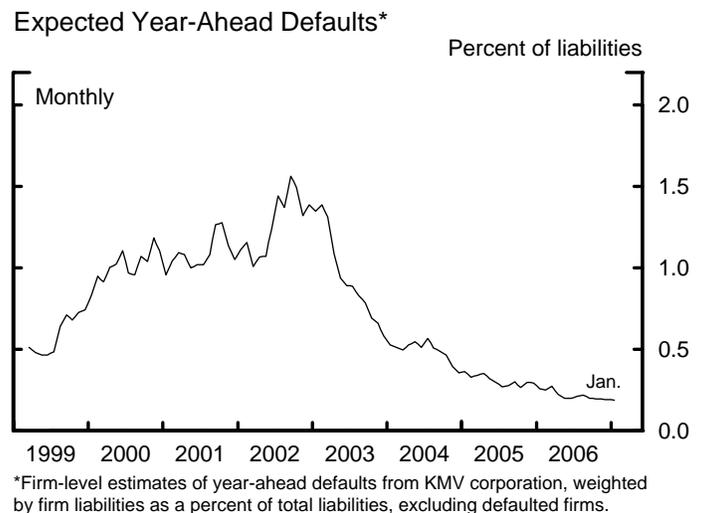
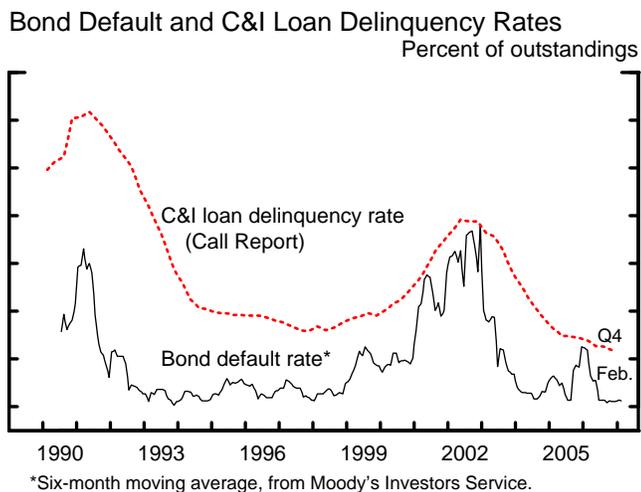
*Estimates based on smoothed nominal and inflation-indexed Treasury yield curves and adjusted for the indexation-lag (carry) effect.

Note: Vertical lines indicate January 30, 2007. Last daily observations are for March 15, 2007.

Chart 2 Asset Market Developments



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



Note: Vertical lines indicate January 30, 2007. Last daily observations are for March 15, 2007.

range of financial assets, markets operated smoothly, apart from some capacity-related technical difficulties that day at Dow Jones and the NYSE. In the Treasury market, bid-asked spreads remained in their recent ranges, and premiums for on-the-run two- and ten-year nominal Treasury securities relative to their off-the-run counterparts widened only modestly. Subsequently, some positive economic data releases and comments by Federal Reserve officials that were viewed as reassuring prompted a partial recovery in some financial asset prices, but, in recent days, stock prices, yields, and policy expectations took another step down as news of strains in the subprime mortgage market accumulated and investors pondered their implications for economic growth.

(3) On net over the intermeeting period, investors tilted their anticipated path for monetary policy down substantially. For the upcoming FOMC meeting, however, federal funds futures quotes and the Desk's survey of dealers indicate that the Committee is expected to remain on hold. Most dealers expect only modest changes to the rationale portion of the statement. Just a few noted a possibility that, in the risk assessment, the Committee would cite the emergence of downside risks to growth. According to options prices, the probability of at least 25 basis points of easing by June now stands at almost one-third. Over the longer term, Eurodollar futures point to an expectation of about 100 basis points of cumulative easing by the end of 2008, about 50 basis points more than had been anticipated prior to the January meeting and markedly more than foreseen by respondents to the most recent Desk survey. The distribution of short-term interest rate expectations shows considerably more skew to the downside than at the time of the January meeting.

(4) Two- and ten-year nominal Treasury yields fell around 35 basis points on balance over the intermeeting period. Most of the decline in yields was concentrated in one-year forward rates ending in two to three years, consistent with market reports pointing to a reappraisal of the robustness of aggregate spending. TIPS yields

generally declined somewhat less than their nominal counterparts, leaving inflation compensation 5 to 10 basis points lower across the term structure.

(5) Broad stock price indexes were off about 2 percent on net. Concern about deteriorating conditions in the subprime mortgage market weighed on the valuations of firms with significant exposures to that segment of the housing sector, and some subprime lenders curtailed or ceased operations (see box, “Developments in the Subprime Mortgage Market”). However, the handful of large financial firms reporting with a February first-quarter end—some of which were perceived to have substantial exposure to subprime mortgages—posted solid earnings. Yields on investment-grade corporate bonds fell about in line with those on Treasury securities of comparable maturity. In contrast, yields on speculative-grade bonds declined only modestly, leaving risk spreads nearly 40 basis points wider, but still low by historical standards. Corporate credit quality remained strong, with default rates staying low.

(6) The foreign exchange value of the dollar dropped 1¼ percent against a trade-weighted index of major foreign currencies but was little changed against an index of currencies of other important U.S. trading partners (Chart 3). Market participants reportedly reacted to indications of somewhat softer growth in the United States and continued firmer expansion in key foreign countries. Both the Bank of Japan and the European Central Bank raised their policy rates 25 basis points during the period.² Since the January FOMC meeting, the dollar has dropped more than 3 percent versus the yen, about 2 percent against the euro, and only slightly against the Canadian dollar. Currencies linked to the funding leg of the carry trade, particularly the yen and the Swiss franc, appeared to be most affected by the market turbulence in the week of February 27, and volatilities in yen-dollar trading remained somewhat above the low levels that prevailed earlier in the period (see box, “Risk and Return on

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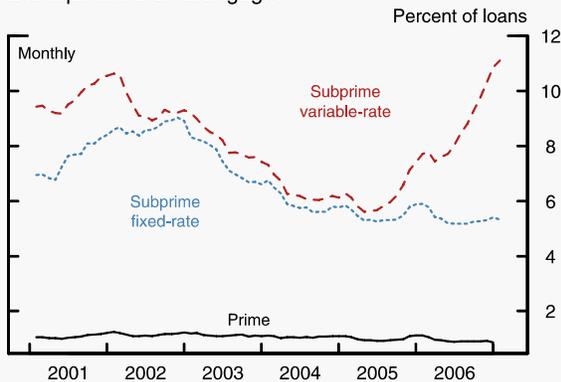
Developments in the Subprime Mortgage Market

Despite generally benign macroeconomic conditions, delinquencies on subprime variable-rate mortgages—shown in the left panel below—rose sharply in 2006 as some borrowers faced large upward adjustments to their monthly payments and house prices stalled or, in some areas, declined. Subprime mortgages originated in 2006 are performing especially poorly this year, consistent with reports that lenders loosened underwriting standards last year amid strong competition. Originators who had sold subprime mortgages to securitizers have in many cases been contractually obligated to buy back the loans that became delinquent shortly after origination. Difficulties in funding these repurchases, as well as generally weaker mortgage demand, have led a number of monoline subprime lenders to file for bankruptcy in recent months and others to withdraw from the market. Stock prices of major subprime lenders have dropped markedly in recent weeks.

Reflecting these events as well as fears that the recent trend will continue or even worsen, spreads on indexes of credit default swaps (CDS) written on pools of subprime mortgages have widened dramatically since last November. These indexes started trading in January of last year, and a new index vintage is created every six months to track the performance of CDS written on subprime mortgages originated in the previous six months. Thus, for example, the January 2007 vintage of the index references CDS on mortgages originated in the second half of 2006. Each index is divided into five segments (AAA, AA, A, BBB, and BBB-) that are designed to mimic the performance of corresponding tranches of subprime residential mortgage-backed securities (RMBS). As shown in the panel at the right, index spreads for CDS on mortgages originated in 2006—the July 2006 and the January 2007 vintages—have widened much more than index spreads for CDS on mortgages originated in the second half of 2005—the January 2006 vintage. Bid-asked spreads on these index products have reportedly jumped in recent weeks, as demand has been predominantly on the protection-buying side.

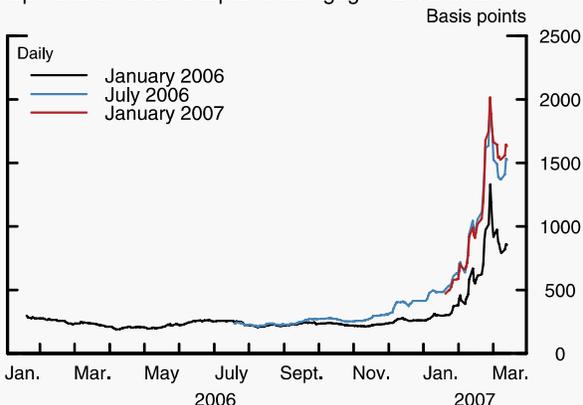
Issuance of subprime RMBS continued to slow in the first two months of 2007, and spreads on newly issued BBB- tranches have risen this year from about 300 to about 700 basis points. Buyers of subprime RMBS have increased their scrutiny of the underlying loans, and investment banks are finding it more difficult to securitize some of the riskiest mortgages. In early March, bank supervisors issued for comment expanded guidance to address safety and soundness and consumer protection issues that stem from some types of subprime mortgage lending. In response to this pressure from buyers and regulators alike, originators are reportedly tightening their standards for subprime loans.

Delinquencies on mortgages



Note. Percent of loans 90 days or more past due or in foreclosure.
Source. LoanPerformance.

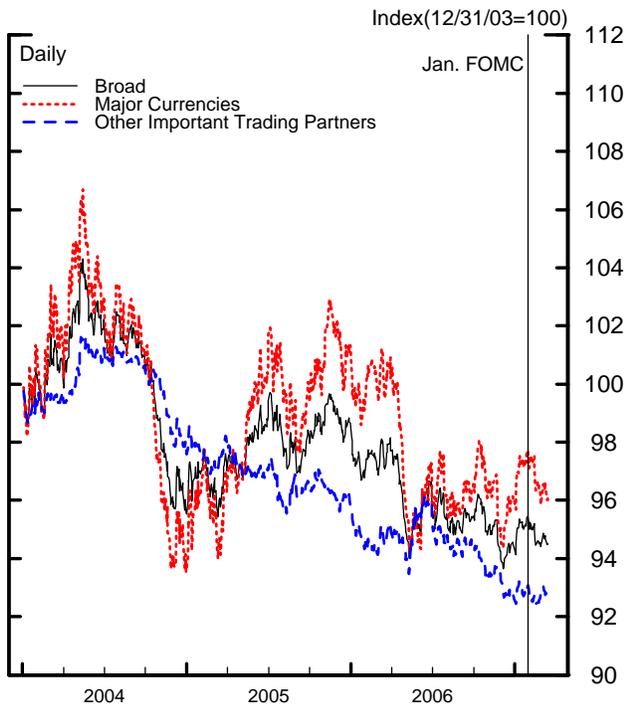
Spreads on BBB- subprime mortgage CDS indexes



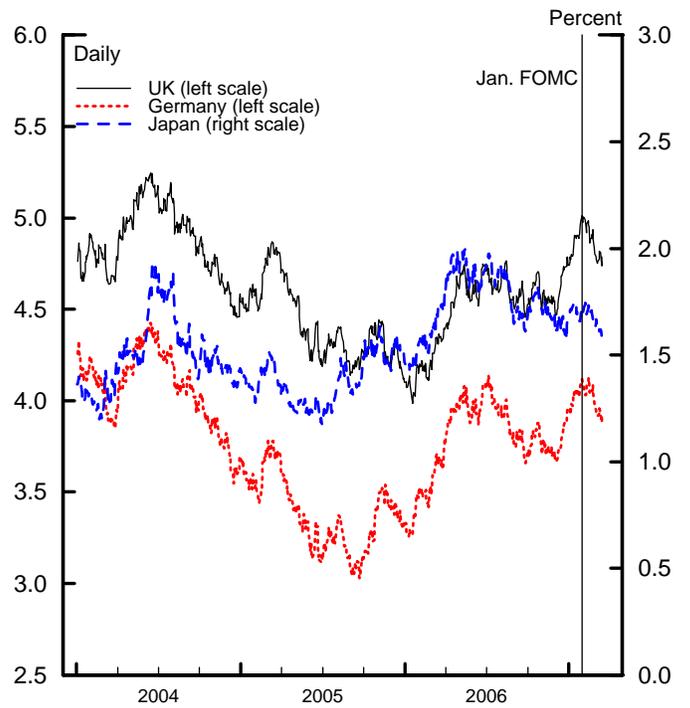
Source: JP Morgan.

Chart 3 International Financial Indicators

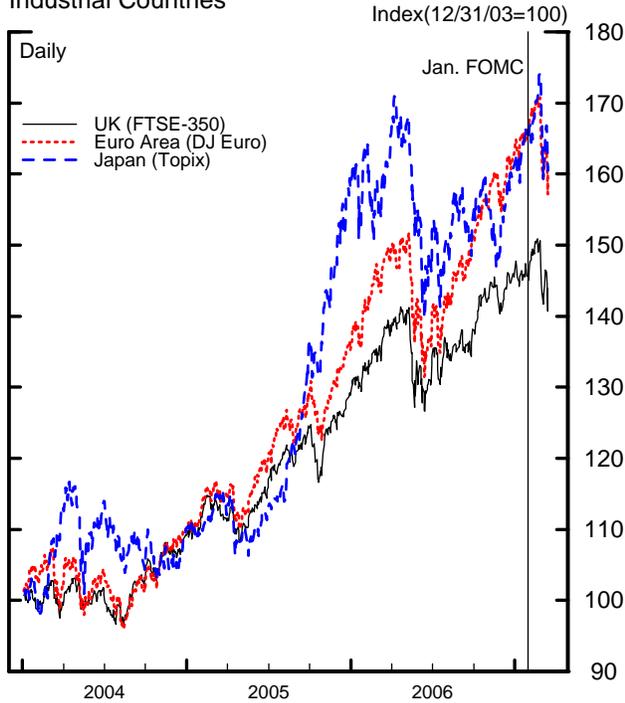
Nominal Trade-Weighted Dollar Indexes



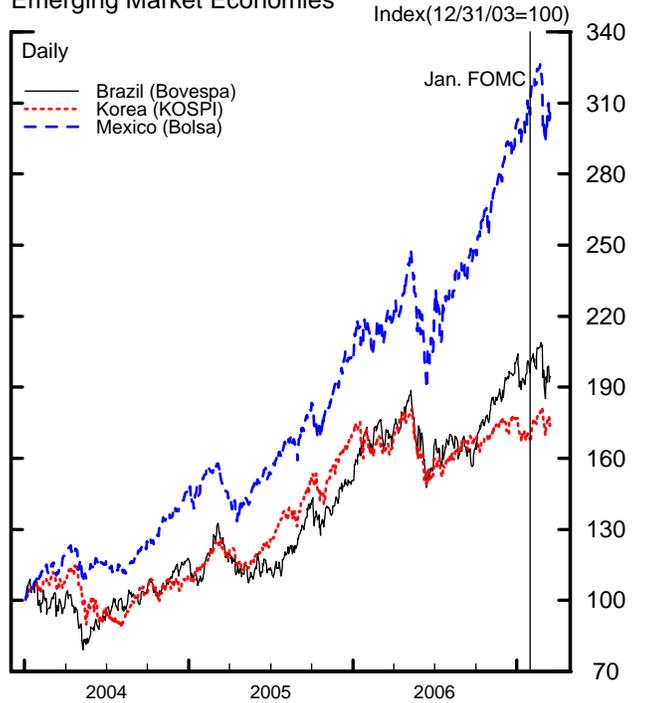
Ten-Year Government Bond Yields (Nominal)



Stock Price Indexes
Industrial Countries



Stock Price Indexes
Emerging Market Economies



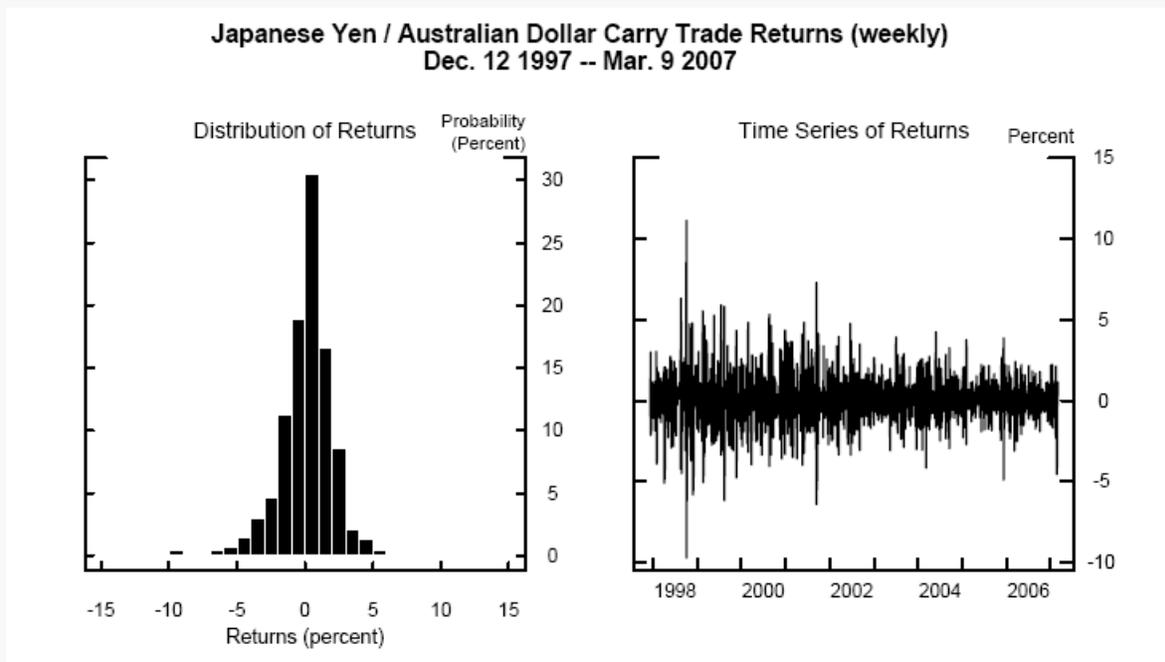
Note: Vertical lines indicate January 30, 2007. Last daily observations are for March 15, 2007.

Risk and Return on Japanese Yen Carry Trades

Even before the recent period of heightened financial market volatility, the business press and Wall Street commentators had focused considerable attention on “carry trades” as a source of potential risk in global financial markets. In the generic example of such a trade, funds borrowed in a low-interest-rate currency, such as the Japanese yen or the Swiss franc, are invested in a high-interest-rate currency, such as the Australian, New Zealand, or U.S. dollars, or various emerging market currencies. Note that a carry trade exposes the investor to exchange rate fluctuations and is therefore not a riskless arbitrage.

Indeed, some market participants who had engaged in yen-funded carry trades the week of February 27 sustained substantial losses. That week’s return from one popular trade—borrowing Japanese yen at one-week LIBOR denominated in yen and lending Australian dollars at the corresponding one-week rate for Australian dollars—was about -4.5 percent, the ninth worst weekly return over a sample beginning in mid-December 1997. Borrowing yen and lending other currencies against which the yen appreciated more sharply would have produced even less favorable results, and to compound some investors’ difficulties, global stock indexes and the prices of many other risky assets tumbled that week.

Nonetheless, analyses of historical returns over a longer term suggest that, on average at least, the strategy generally appears to have favorable risk, return, and covariance characteristics. The distribution of returns on a very simple application of the strategy—the yen/Australian dollar example discussed previously—has been fairly symmetric rather than particularly negatively skewed, as shown to the lower left. Over this sample, the average carry-trade return is roughly equal to the mean interest rate differential, and the Sharpe ratio of the strategy (the mean return divided by the standard deviation) compares favorably with other broad asset classes. In addition, although the week of February 27 was an exception, carry-trade returns have had a very low correlation with most other asset returns, which suggests that the strategy might actually enhance portfolio diversification. Indeed, investors likely conduct carry trades within a broader set of strategies.



Japanese Yen Carry Trades”). The Australian dollar, the New Zealand dollar, and some emerging-market currencies, which have been prominent lately in the investment leg of the carry trade, registered sharp downdrafts during the recent spate of volatility.

(7) The announcement in late February by Chinese authorities of steps to curtail illegal stock trading and subsequent rumors of additional measures to control speculation provoked a sharp decline in Chinese equity prices in the week of February 27. Stock prices in many other foreign markets also dropped abruptly. Although global stock prices steadied briefly thereafter, they have declined further on balance in recent days, and most headline stock price indexes are down 1 to 5 percent over the intermeeting period. The global shift away from risky assets likely also contributed to the widening of spreads on emerging-market bonds and to declines of about 10 to 20 basis points in yields on long-term government bonds in industrial countries.

(8) Borrowing by businesses, households, and state and local governments appears to be slowing somewhat in the current quarter (Chart 4). Nonfinancial corporate debt, which expanded at an 11 percent annual rate in the fourth quarter of 2006, is projected to moderate to an 8 percent pace this quarter as merger and acquisition financing steps down. Business debt growth slowed in January, but picked back up in February; on average, business borrowing remained solid by historical standards. Despite the recent turmoil in financial markets, funding in the corporate bond and syndicated loan markets appears to have remained ample. In the household sector, mortgage debt growth dropped to a 6½ percent rate in the fourth quarter and is expected to edge down a bit further to a 6 percent pace in the first quarter, with the slowing in large part associated with the cooling in home price appreciation. Consumer credit growth in the first quarter is projected to remain at a moderate rate of 4¾ percent, the same as its average in 2006. In contrast to the slower expansion of debt in the private sector, federal debt is estimated to be accelerating, putting total

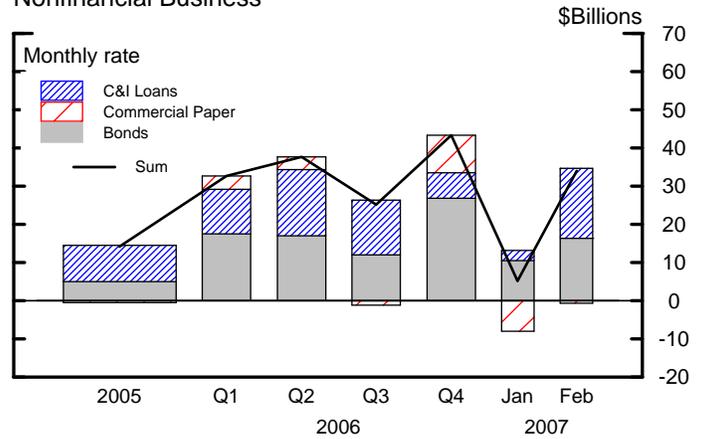
Chart 4 Debt and Money

Growth of Debt of Nonfinancial Sectors

Percent, s.a.a.r.	Total	Nonfederal
2005	9.4	9.9
2006	7.9	8.8
Q1	9.5	9.1
Q2	6.8	8.8
Q3	6.5	7.2
Q4	7.9	8.8
2007		
Q1p	7.8	7.0

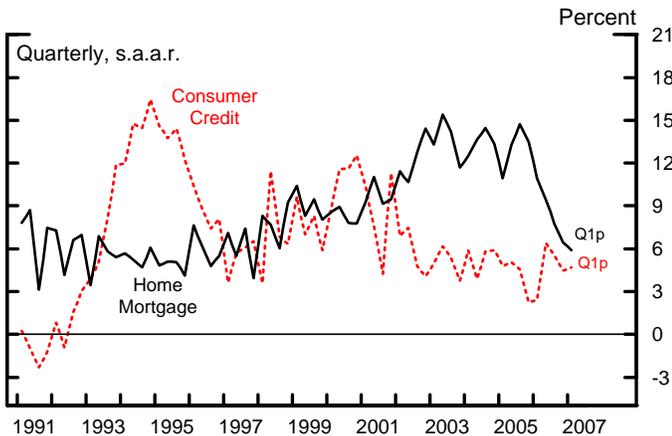
p Projected.

Changes in Selected Components of Debt of Nonfinancial Business



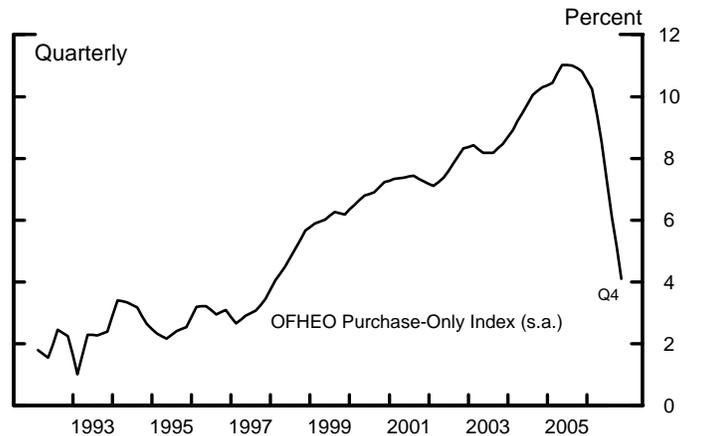
Note. Commercial paper and C&I loans are seasonally adjusted, bonds are not.

Growth of Debt of Household Sector



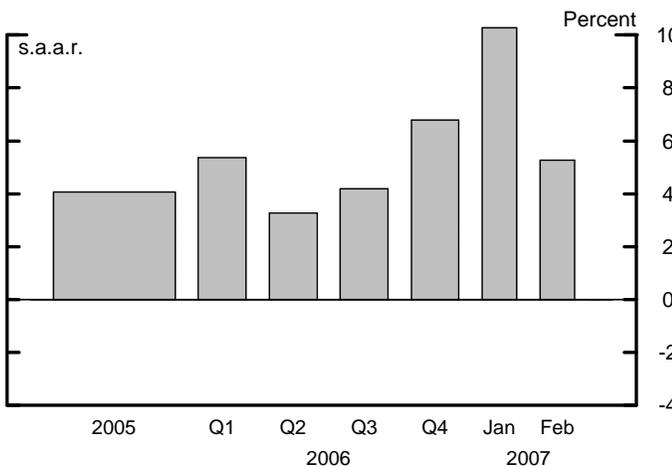
p Projected.

Growth of House Prices

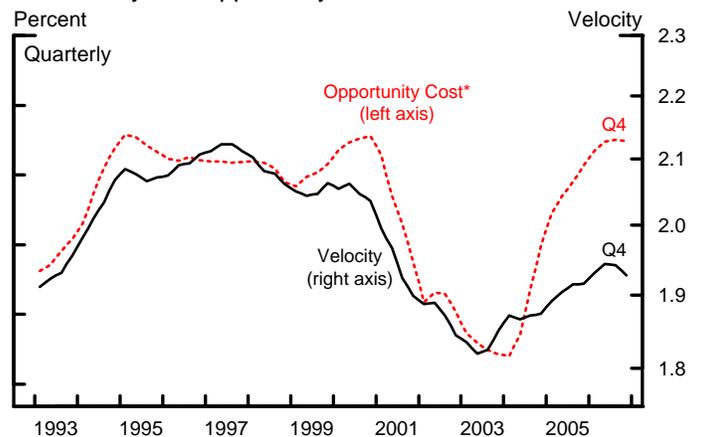


Note. Four-quarter growth rate.

Growth of M2



M2 Velocity and Opportunity Cost



*Two-quarter moving average.

debt of the domestic nonfinancial sectors on track for a $7\frac{3}{4}$ percent annual growth pace this quarter, about the same as last quarter.

(9) M2 growth slowed in February after four months of very strong advances. The growth of liquid deposits, by far the largest portion of M2, moderated to 4 percent from its outsized fourth-quarter pace. Retail money funds and small time deposits also had been expanding rapidly through the end of last year, but have decelerated as their rates of return became relatively less attractive. The currency component of M2 was essentially flat over the past two months. Domestic demand for currency has likely expanded at a modest pace, while international demand for U.S. currency has continued to fall off in light of improving economic and political stability abroad as well as an apparent expansion of the use of euro banknotes as a store of value. Taken as a whole, the level of M2 remains significantly higher than would be indicated by the long-run relationship between velocity and the opportunity cost of M2.

Economic Outlook through 2008

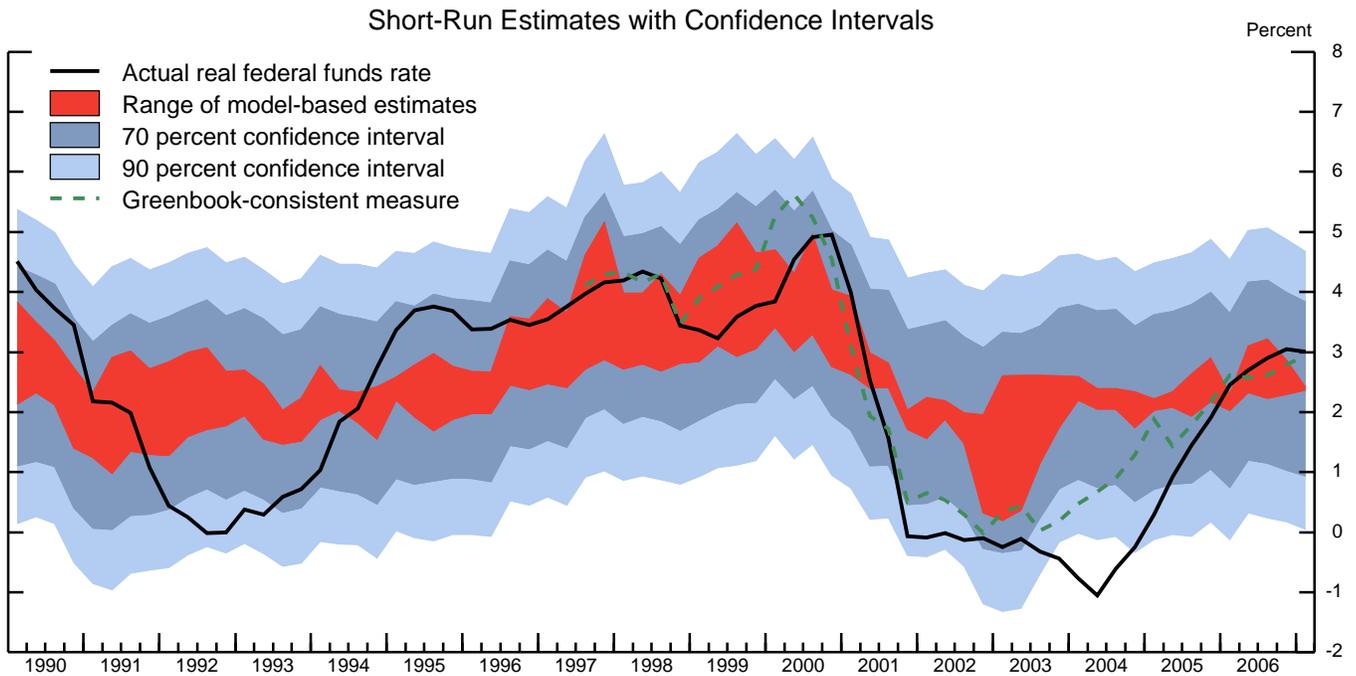
(10) The staff has read weaker-than-expected incoming data, higher spot and futures prices for oil, lower equity prices, and increasing strains in the subprime mortgage sector as reasons to mark down its projection for real growth. Real GDP is projected to grow at a 1½ percent rate during the current quarter; the sluggish growth primarily reflects the ongoing adjustment in the housing sector and a partial reversal of last quarter's large improvement in net exports. The staff expects that real GDP growth will pick up to 2¼ percent during the remainder of the forecast period as the housing adjustment moves toward completion. This pace of expansion would be somewhat below the staff's estimate of potential growth, which averages a bit above 2½ percent, so the unemployment rate is projected to climb above 5 percent by the end of 2008. The increase in energy prices since January led the staff to revise up its forecast for headline PCE inflation during the first half of this year. As in January, however, the staff sees core PCE inflation edging down from just under 2¼ percent in 2007 to 2 percent during 2008. Against this backdrop, the forecast assumes that the Committee will cut the target federal funds rate to 5 percent in the middle of 2008, whereas no such easing was assumed in January. The Greenbook forecast is again predicated on broad U.S. equity price indexes rising at a rate of 6½ percent, albeit from a somewhat lower level than at the time of the January FOMC meeting. Long-term Treasury yields are assumed to rise about 25 basis points as market participants gradually conclude that policy will not be eased as quickly as they currently expect. The dollar is projected to depreciate very slightly against foreign currencies. The path of oil prices has been raised about \$5 per barrel relative to the previous Greenbook.

Medium-Term Strategies

(11) To shed additional light on the economic outlook and possible monetary 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 outlook include the assumptions of trend multifactor productivity growth at about 1³/₄ percent per year, approximately flat energy prices, and a pickup in the pace of depreciation of the real foreign exchange value of the dollar to an average rate of 3 percent per year. Given the impetus to inflation from dollar depreciation, the unemployment rate would need to be a bit above the staff's assumed long-run NAIRU of 5 percent to keep core PCE inflation stable at around 2 percent—the inflation rate consistent, in the staff's estimation, with recent survey measures of long-run inflation expectations. The contours of aggregate demand are influenced by the unified federal budget deficit, which rises from 1³/₄ percent of GDP next year to about 2¹/₂ percent by 2012, and by the current account deficit, which widens slightly to nearly 7 percent of GDP in 2012 despite depreciation of the dollar and steady growth abroad. Further assuming that term, credit, and equity risk premiums gradually revert to historical norms, the real federal funds rate would need to move below 2 percent by 2012 to keep output expanding along the path of its potential.

(12) As shown in Chart 5, the current level of the real funds rate, 3 percent, is a touch higher than the Greenbook-consistent estimate of short-run r^* —the value of the real federal funds rate that would put the level of real GDP at its potential twelve quarters ahead—and about 50 basis points higher than the three model-based estimates of short-run r^* . The Greenbook-consistent measure has been marked down about 40 basis points relative to the previous Bluebook in response to incoming data pointing to somewhat weaker business fixed investment as well as a lower path

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	2.4	2.4
Small structural model	2.4	2.4
Large model (FRB/US)	2.4	2.6
Confidence intervals for three model-based estimates		
70 percent confidence interval	0.9 - 3.8	
90 percent confidence interval	0.1 - 4.7	
Greenbook-consistent measure	2.9	3.3
Medium-Run Measures		
Single-equation model	2.3	2.3
Small structural model	2.2	2.3
Confidence intervals for two model-based estimates		
70 percent confidence interval	1.4 - 3.2	
90 percent confidence interval	0.8 - 3.8	
TIPS-based factor model	2.1	2.1
Memo		
Actual real federal funds rate	3.0	3.0

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

of residential expenditures due to the recent rise in energy prices, the decline in stock market wealth, and problems in the subprime mortgage sector. The model-based estimates of medium-run r^* —the value of the real funds rate consistent with keeping output at potential at a seven-year horizon—are both close to $2\frac{1}{4}$ percent, just above the TIPS-based measure of about 2 percent.

(13) Outcomes obtained from optimal control simulations of the FRB/US model, shown in Chart 6, are importantly influenced by the somewhat weaker outlook for aggregate demand and slightly greater inflation pressures anticipated through the end of the decade. In these simulations, policymakers are assumed to place equal weight on three stabilization objectives: keeping core PCE inflation close to a specified goal of either $1\frac{1}{2}$ or 2 percent, keeping unemployment close to the long-run NAIRU, and avoiding changes in the nominal funds rate.³ With policy aiming at an inflation goal of 2 percent (the right-hand set of charts), the optimal path of the federal funds rate over the next few years is about $\frac{1}{4}$ percentage point lower than in the January Bluebook—reflecting the softer near-term outlook for aggregate demand—but levels off at the same plateau of about 4 percent. Given the slight increase in inflation pressures, the optimal policy does not completely offset the decline in aggregate demand; as a result, the unemployment rate and core inflation over the next few years are both a touch higher than in January. Similarly, with an inflation goal of $1\frac{1}{2}$ percent (the left-hand set of charts), the optimal funds rate follows a trajectory over the next several years that is roughly $\frac{1}{4}$ percentage point lower than in the previous Bluebook. In this case, the unemployment rate peaks at about $5\frac{1}{2}$ percent early in the next decade while core inflation declines very slowly to about 1.8 percent by 2012. The pace of this disinflation primarily reflects the slow adjustment of wage and price setters' long-run inflation expectations, which in turn

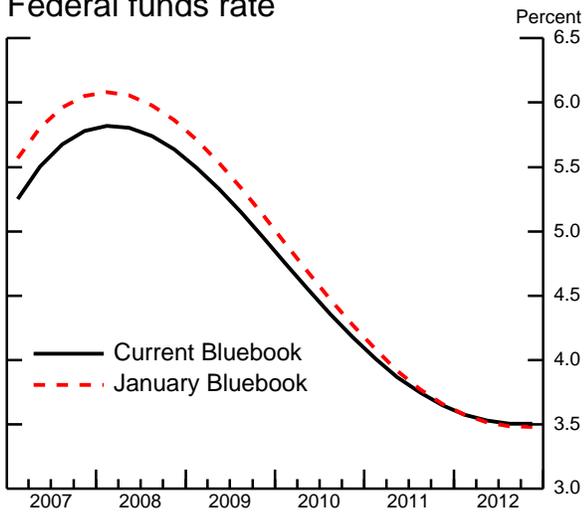
³ It is also assumed that policymakers and participants in financial markets understand fully the forces shaping the economic outlook whereas the expectations of households and firms are formed using more limited information.

Chart 6

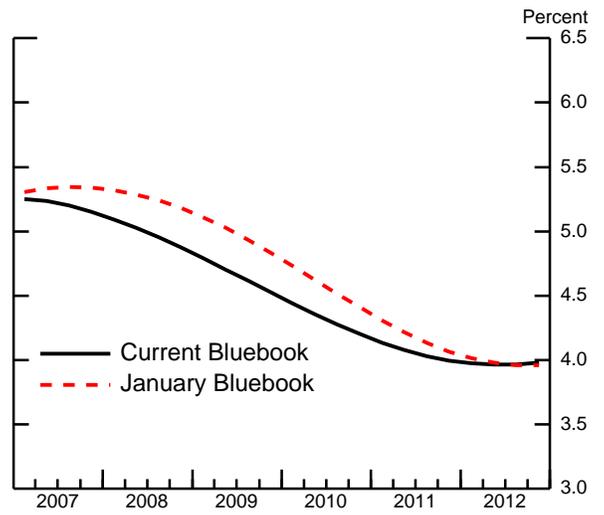
Optimal Policy Under Alternative Inflation Goals

1½ Percent Inflation Goal

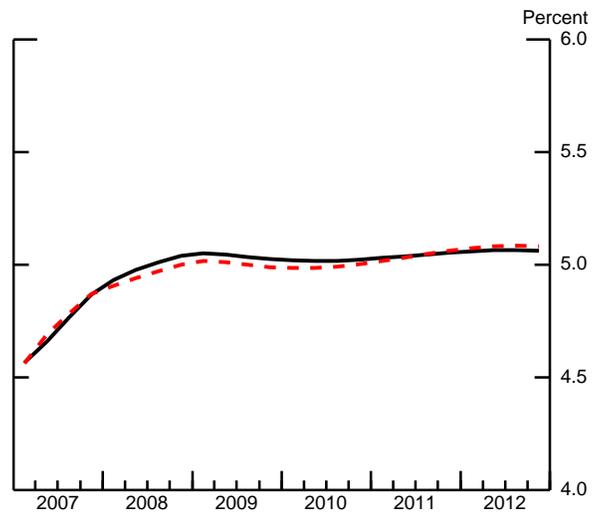
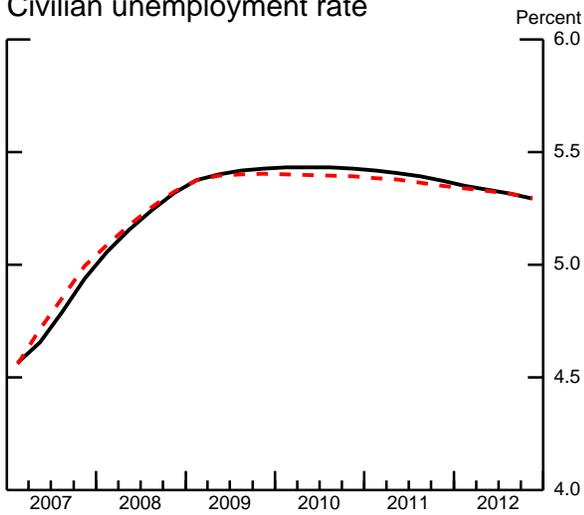
Federal funds rate



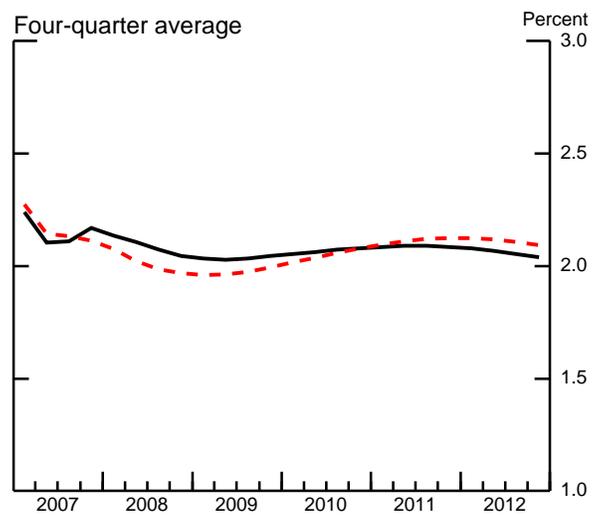
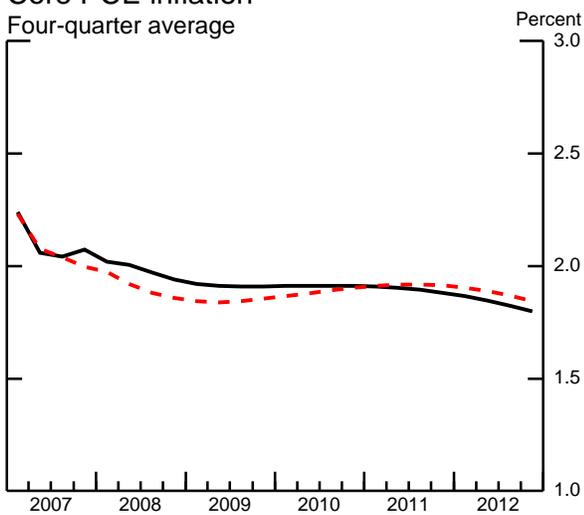
2 Percent Inflation Goal



Civilian unemployment rate



Core PCE inflation
Four-quarter average



owes to the gradual evolution of their perceptions of policymakers' inflation goal (see box on "Inflation Expectations and Optimal Control Policies").

(14) The upper panels of Chart 7 depict model- and market-based assessments of the policy outlook through the end of 2012. In the absence of shocks, the outcome-based rule prescribes a funds rate path that declines gradually—though slightly faster than in the January Bluebook—to about 4 percent by the end of 2012. Stochastic simulations of the FRB/US model indicate a 70 percent probability that the prescriptions of the outcome-based rule will fall in a range of $2\frac{1}{2}$ to $6\frac{1}{4}$ percent during 2012. Information from at-the-money interest rate caps also indicates considerable uncertainty in financial markets regarding the prospective path of policy at longer horizons.

(15) The lower portion of Chart 7 reports near-term prescriptions of simple policy rules embedding an inflation goal of either $1\frac{1}{2}$ or 2 percent. The rule proposed by Taylor (1999) calls for a funds rate of about $4\frac{1}{2}$ to 5 percent for the current quarter, whereas a funds rate of about $5\frac{1}{2}$ percent is stipulated by a variant of that rule incorporating a higher value of r^* . In each of these cases, the rule is consistent with a downward-sloping path of the federal funds rate going forward, with a cut next quarter of about 25 basis points. In contrast to the Taylor rules, the first-difference rule—which does not require estimates of the levels of the output gap or the equilibrium real interest rate—prescribes setting the nominal federal funds rate at about $5\frac{1}{2}$ percent if the inflation goal is $1\frac{1}{2}$ percent or at about 5 percent if the inflation goal is 2 percent.

Inflation Expectations and Optimal Control Policies¹

For an inflation goal of 1½ percent, the optimal control policy shown in Chart 6 is associated with glacial convergence of actual inflation toward the goal. This feature does *not* primarily reflect the specification of short-run wage and price dynamics in the FRB/US model, but rather the slow adjustment of the long-run inflation expectations of wage and price setters. Those agents’ expectations—which are determined by their understanding of the inflation goal specified by policymakers—decline from a current level of around 2 percent toward the true goal at a pace calibrated to approximate the empirical behavior of survey measures of long-run inflation expectations. To highlight the role of this aspect of inflation expectations in shaping optimal policy, this box compares the benchmark specification with two alternative assumptions regarding the evolution of public perceptions of policymakers’ inflation goal.

In the *benchmark specification* of the FRB/US model (the solid line in each panel to the right), it is assumed that wage and price setters gradually update their beliefs about the inflation goal in response to actual inflation outcomes. As a result, policymakers need to tighten policy substantially in order to elevate the unemployment rate and generate sufficient downward pressure on actual inflation. In this scenario, long-run inflation expectations (not shown) decline by only about ¼ percentage point through 2012.

In contrast, in the case of *immediate recognition*, wage and price setters are assumed to perceive the 1½ percent inflation goal starting in the current quarter (dashed red lines). In this scenario, core inflation declines rapidly and approaches the goal by the end of 2008, while the unemployment rate remains close to its natural rate over the next few years.²

In the final scenario—*learning from policy actions*—wage and price setters infer the inflation goal from surprises in policymakers’ setting of the federal funds rate (dotted blue lines). In this case, policymakers signal their commitment to a disinflation through a substantial initial increase in the funds rate, which pushes the unemployment rate about ¼ percentage point above its natural rate later this decade. As a result, long-run inflation expectations decline more rapidly than in the benchmark specification, and core inflation converges to the 1½ percent goal by 2012.

¹ This box draws on the analysis provided in the memo to the Committee by David Reifschneider and Robert Tetlow, “FRB/US Inflation Dynamics, Policy Credibility, and Bluebook Optimal Control Simulations,” March 8, 2007.

² In principle, the speed of disinflation could be influenced by the baseline assumption that agents do not form model-consistent expectations but instead generate forecasts based on a small-scale VAR. However, the memo reports roughly identical simulation paths under these two alternative approaches, conditional on the same credibility of monetary policy.

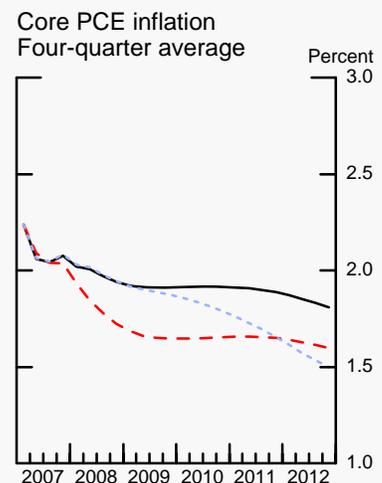
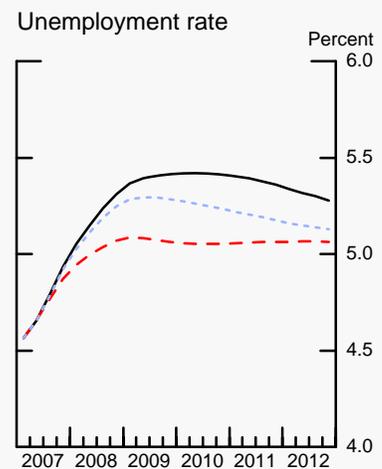
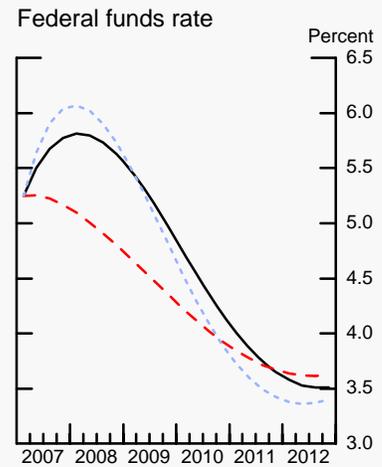
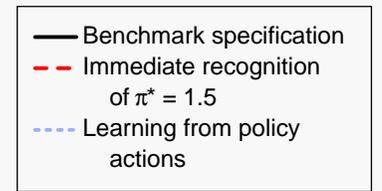
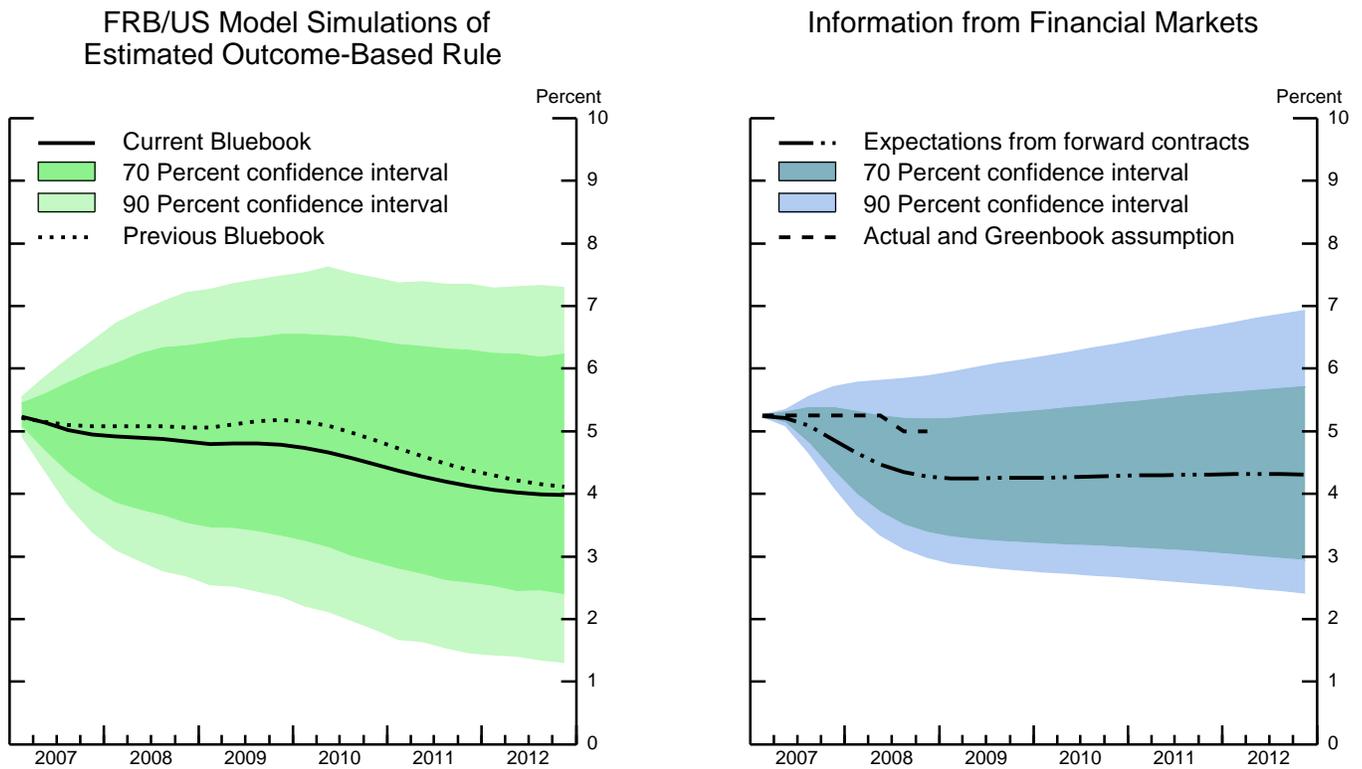


Chart 7

The Policy Outlook in an Uncertain Environment



Near-Term Prescriptions of Simple Policy Rules

	1½ Percent Inflation Objective		2 Percent Inflation Objective	
	2007Q1	2007Q2	2007Q1	2007Q2
Taylor (1993) rule	4.8	4.5	4.5	4.3
<i>Previous Bluebook</i>	4.8	4.6	4.6	4.4
Taylor (1999) rule	4.9	4.6	4.6	4.3
<i>Previous Bluebook</i>	5.0	4.7	4.7	4.5
Taylor (1999) rule with higher r*	5.6	5.3	5.4	5.1
<i>Previous Bluebook</i>	5.7	5.5	5.5	5.2
First-difference rule	5.4	5.5	5.1	5.0
<i>Previous Bluebook</i>	5.4	5.7	5.2	5.2
Memo				
Estimated outcome-based rule		5.2		5.1
Estimated forecast-based rule		5.2		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.

Monetary Policy Alternatives

(16) This Bluebook presents three policy alternatives, summarized in Table 1, as a starting point for the Committee's deliberations. Under Alternative A, the Committee would lower the intended federal funds rate 25 basis points, to 5 percent. Alternative B would leave the target for the federal funds rate unchanged. Under Alternative C, the Committee would tighten policy 25 basis points, bringing the target to 5½ percent. The statement associated with Alternative A mentions factors that suggest upside risks to inflation and retains the phrase "some inflation risks remain;" it also mentions factors that suggest downside risks to growth and offers an explicit assessment that the risks to growth are tilted to the downside. In addition, Alternative A replaces the phrase "the extent and timing of any additional firming" with the more general "future policy adjustments." Alternative B, too, notes factors that suggest downside risks to growth as well as factors that suggest upside risks to inflation, but states explicitly that the risk that inflation will fail to moderate remains the Committee's principal concern. Alternative B also adopts more symmetric language regarding future policy adjustments. Language for Alternative C not only states that the risk that inflation will fail to moderate remains the Committee's predominant concern, it does not mention downside risks to growth and retains directional language referring to "the extent and timing of any additional firming." With the report on consumer prices in February to be released on Friday, after the Bluebook closes, the rationale portion of Alternative B includes language in brackets that may be appropriate if inflation is disappointingly high.

(17) In the staff's analysis, the real federal funds rate is essentially equal to the Greenbook-consistent estimate of its equilibrium value (Chart 5), suggesting that the current stance of policy likely would be consistent with closing the small estimated output gap over the next several years. Moreover, the current target for the funds rate is very close to prescriptions for near-term policy from the optimal policy path

Table 1: Alternative Language for the March 2007 FOMC Announcement				
	January 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 lower its target for the federal funds rate 25 basis points to 5 percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 5¼ percent.	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. Recent indicators have suggested somewhat firmer economic growth, and some tentative signs of stabilization have appeared in the housing market. Overall, the economy seems likely to expand at a moderate pace over coming quarters.	The economy seems likely to expand at a moderate pace over coming quarters, supported in part by gains in personal income and consumer spending. However, sluggish business investment and ongoing weakness in the housing sector likely will exert a drag on growth.	Despite the ongoing adjustment in the housing sector, the economy seems likely to continue to expand at a moderate pace over coming quarters, supported in part by gains in personal income and consumer spending.	The economy appears to be expanding at a moderate pace and likely will continue to do so in coming quarters, supported in part by solid gains in personal income and consumer spending.
	3. Readings on core inflation have improved modestly in recent months, and inflation pressures seem likely to moderate over time. However, the high level of resource utilization has the potential to sustain inflation pressures.	Readings on core inflation have improved modestly in recent months, and inflation pressures seem likely to moderate over time. However, the high level of resource utilization has the potential to sustain inflation pressures.	Readings on core inflation have improved modestly in recent months, and inflation pressures seem likely to moderate over time. [Or: Readings on core inflation have been somewhat elevated. Inflation pressures seem likely to moderate over time.] However, the high level of resource utilization has the potential to sustain inflation pressures.	Core inflation remains somewhat elevated. Inflation pressures seem likely to moderate over time, but considerable uncertainty surrounds that judgment. Moreover, the high level of resource utilization has the potential to sustain inflation pressures.
Assessment of Risk	4. 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.	The Committee judges that the risks to growth are tilted to the downside, even after this policy action. However, upside risks to inflation remain. Future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.	In these circumstances, the Committee’s principal policy concern remains the risk that inflation will fail to moderate as expected. Future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.	In these circumstances, the Committee’s predominant policy concern remains the risk that inflation will fail to moderate as expected. The extent and timing of any additional firming that may be needed to address this risk will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.

simulations of the FRB/US model for a 2 percent inflation goal (Chart 6). If the Committee sees the combination of gradual convergence to potential output and a 2 percent inflation rate by the end of 2008 as a reasonable and desirable outcome, given current conditions, it might favor no change in policy, as in **Alternative B**. In that regard, the central tendency of the forecasts submitted by the Governors and Reserve Bank presidents around the time of the January FOMC meeting suggested that the Committee was more optimistic than the staff about potential output, perhaps implying that keeping the funds rate constant is likely to generate both brisker growth and a larger decline in core inflation than the staff projects. Although members may think that dislocations in the subprime mortgage market will reduce funding for home purchases in that sector, tending to deepen the slide in housing construction, they may also be of the view that the drop in market yields in recent weeks will mean lower mortgage rates for prime borrowers going forward, perhaps spurring an earlier recovery in construction and sales of new homes. Given these potentially offsetting forces, the Committee may be inclined to wait for more information on consumer spending and housing demand before adjusting the stance of policy.

(18) The language associated with Alternative B could point to gains in personal income and consumer spending as helping to sustain output in the face of weakness in housing and business investment. If the Committee's view on inflation has not changed appreciably of late, it could choose to repeat the backward-looking language that "readings on core inflation have improved modestly in recent months" along with the forward-looking language that "inflation pressures seem likely to moderate over time" and the qualification that high resource utilization could sustain inflation pressures. The assessment of risk language for Alternative B contains no explicit judgment about the balance of risks. However, by stating that the risk that inflation will fail to moderate as expected remains its principal policy concern, the Committee

would implicitly acknowledge risks to growth. The proposed wording in Alternative B replaces the reference to “additional firming” that was in the January statement with a balanced characterization of “future policy adjustments,” thereby removing the presumption that the next change in policy will be a tightening and providing greater policy flexibility going forward.

(19) Although economic and financial news during the intermeeting period increased the perceived probability of a cut in the funds rate later this year, market participants continue to see no chance of easing at this meeting. Market commentary and surveys also suggest that participants would not be surprised if the statement were to recognize downside risks to growth, but they see a lesser chance of a change in the “tilt” in the assessment of risks. Thus, pointing to a “principal concern” might be read as a more forceful assertion than the wording in January’s statement. Dropping the reference to “additional firming” from the risk assessment should convey more balanced odds on the direction of future policy changes and thus weigh against that reading. On balance, the language for Alternative B seems likely to elicit little reaction, but with markets apparently skittish, this judgment should be viewed as more tentative than usual.

(20) In contrast to the fairly benign scenario described in the staff forecast, the Committee might be concerned that widening disruptions in the subprime market point to greater weakness in housing and that lower equity prices will slow the growth of consumer spending. The Committee also might see recent economic data as indicating that weakness has spread from housing and motor vehicles to other goods-producing sectors, perhaps along the lines of the “weak investment” alternative in the Greenbook. If so, members might prefer the quarter-point policy easing in **Alternative A**. This alternative offers an explicit judgment that risks to growth would remain tilted to the downside even after this policy action, thereby conveying greater concern about those risks than Alternative B. At the same time, it would continue to

point to upside risks to inflation. Members who consider 2 percent inflation an appropriate goal might note that most of the policy rules shown in Chart 7 point to a reduction in the target funds rate in the second quarter.

(21) The rationale for Alternative A points to sluggish business investment and ongoing weakness in housing as likely to exert a drag on growth, thus supporting a judgment that risks to growth remain tilted to the downside even after a quarter-point rate cut. By also pointing to remaining inflation risks and adopting a symmetric characterization of possible future adjustments in the policy rate, the assessment of risk in Alternative A is meant to convey that this policy action will not necessarily commence a sequence of rate cuts.

(22) Although investors apparently expect the Committee to begin easing by mid-year, the immediate quarter-point rate cut envisioned in Alternative A would be a considerable surprise and likely would lead to a significant easing of financial conditions. Long-term yields might follow short-term rates down if markets conclude that the Committee believes that prospects for growth have weakened appreciably, reducing the equilibrium real interest rate consistent with sustainable growth. The drop in longer-term yields could be small if markets conclude that the Committee is easing sooner than expected but will not cut rates more over the next few years than is already incorporated in financial quotes. But markets might read an announcement along the lines of Alternative A as an indication that the Committee is willing to forego a medium-term moderation in inflation in order to sustain economic growth. In that case, measures of inflation compensation might rise.

(23) Though much of the market commentary during the intermeeting period focused on developments pointing to weaker-than-expected growth, the Committee might see the recent data releases as only a bit weaker than expected and judge that the fallout from developments in the subprime mortgage sector will be limited, perhaps for the reasons given in Part I of the Greenbook. If so, the Committee might

place greater weight on the step-up in core inflation in January and the recent depreciation of the dollar. Especially if Friday's inflation report proves markedly higher than expected, the Committee may be less confident than the staff that core inflation will decline from its uncomfortably high level with no further increase in the federal funds rate, inclining members toward the quarter-point policy firming of **Alternative C**. A judgment that tighter policy is appropriate might be buttressed by concerns about the extent to which the labor market currently is stretched thin and the slow pace at which those pressures lessen in the staff forecast.

(24) The rationale for Alternative C could indicate the Committee's fundamentally unchanged outlook for growth by stating that the economy "appears to be expanding at a moderate pace and likely will continue to do so in coming quarters, supported by solid growth in consumer spending" without mentioning areas of weakness. The rationale could emphasize the Committee's discomfort with inflation by stating not only that "core inflation remains somewhat elevated," but also that "considerable uncertainty surrounds" the judgment that inflation will moderate and that "the high level of resource utilization has the potential to sustain inflation pressures." If the Committee wished to make clear that the 25 basis point increase in the funds rate did not entirely assuage its concern about inflation risks, the Committee could replace the first sentence of January's assessment of risk with language stating that "the Committee's predominant policy concern remains the risk that inflation will fail to moderate as expected" while retaining the second sentence.

(25) A decision to adopt Alternative C would come as a complete surprise to the financial markets, likely leading to a sharp upward revision of investors' expectations for the federal funds rate over the next few quarters and thus an increase in short-term interest rates. Longer-term rates might also jump if market participants were to conclude that the inflation outlook is less benign than they had thought and that short-term real rates will have to be persistently higher to keep inflation contained.

Upward pressure on long-term rates would be lessened if investors conclude that the FOMC's focus on reducing inflation will mean faster progress toward price stability.

Money and Debt Forecasts

(26) Under the Greenbook baseline, M2 is expected to grow about 5¼ percent in 2007 and 5 percent in 2008, a touch slower on average than in the January forecast, consistent with the modest downward revision in nominal GDP growth in the staff forecast. The opportunity cost of holding M2 edges down this year as deposit rates continue to catch up to earlier increases in short-term interest rates. As a result, M2 is projected to grow a bit faster than nominal income. In the forecast, liquid deposits expand moderately and rapid growth in retail money funds offsets more sluggish growth in small time deposits. Currency growth, however, continues to be restrained by weak foreign demand.

(27) The growth of domestic nonfinancial sector debt is projected to fall from nearly 8 percent last year to 6½ percent in 2007 and 6 percent in 2008. In the household sector, nearly flat housing prices likely will dampen mortgage borrowing over the forecast horizon. Corporate debt is also projected to slow somewhat, as the recent strong pace of merger-related debt issuance ebbs. With the unified budget deficit expected to widen, federal debt growth is projected to step up this year and next.

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

	25 bp Easing	No Change	25 bp Tightening	Greenbook Forecast*	
Monthly Growth Rates					
Sep-06	4.0	4.0	4.0	4.0	
Oct-06	8.7	8.7	8.7	8.7	
Nov-06	7.0	7.0	7.0	7.0	
Dec-06	7.6	7.6	7.6	7.6	
Jan-07	10.3	10.3	10.3	10.3	
Feb-07	5.3	5.3	5.3	5.3	
Mar-07	6.1	5.9	5.7	5.9	
Apr-07	5.6	5.0	4.4	5.0	
May-07	4.7	3.9	3.1	3.9	
Jun-07	4.6	3.9	3.2	3.9	
Quarterly Growth Rates					
2006 Q1	5.4	5.4	5.4	5.4	
2006 Q2	3.3	3.3	3.3	3.3	
2006 Q3	4.2	4.2	4.2	4.2	
2006 Q4	6.8	6.8	6.8	6.8	
2007 Q1	7.8	7.8	7.7	7.8	
2007 Q2	5.4	4.9	4.4	4.9	
2007 Q3	4.5	3.9	3.3	3.9	
2007 Q4	4.4	4.1	3.7	4.1	
Annual Growth Rates					
2007	5.6	5.2	4.9	5.2	
2008	4.7	4.7	4.7	5.0	
Growth From	To				
Jan-07	Jun-07	5.3	4.8	4.4	4.8
2006 Q4	Jun-07	6.4	6.0	5.7	6.0

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

Directive and Balance of Risks Statement

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

Directive Wording

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee in the immediate future seeks conditions in reserve markets consistent with maintaining/INCREASING/REDUCING the federal funds rate at/TO an average of around _____ ~~5¼~~ percent.

Risk Assessments

- A. The Committee judges that the risks to growth are tilted to the downside, even after this policy action. However, upside risks to inflation remain. Future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.
- B. In these circumstances, the Committee's principal policy concern remains the risk that inflation will fail to moderate as expected. Future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.
- C. In these circumstances, the Committee's predominant policy concern remains the risk that inflation will fail to moderate as expected. The extent and timing of any additional firming that may be needed to address this risk 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 1988:1-2006:4; each specification was chosen using the Bayesian information criterion. Each rule incorporates a 75 basis point shift in the intercept, specified as a sequence of 25 basis point increments during the first three quarters of 1998. The first two simple rules were proposed by Taylor (1993, 1999), while the third is a variant of the Taylor (1999) rule—introduced in the August Bluebook—with a higher value of r^* . The prescriptions of the first-difference rule do not depend on assumptions regarding r^* or the level of the output gap; see Orphanides (2003).

Outcome-based rule	$i_t = 1.20i_{t-1} - 0.39i_{t-2} + 0.19[1.17 + 1.73\pi_t + 3.66(y_t - y_t^*) - 2.72(y_{t-1} - y_{t-1}^*)]$
Forecast-based rule	$i_t = 1.18i_{t-1} - 0.38i_{t-2} + 0.20[0.98 + 1.72\pi_{t+2/t} + 2.29(y_{t+1/t} - y_{t+1/t}^*) - 1.37(y_{t-1} - y_{t-1}^*)]$
Taylor (1993) rule	$i_t = 2 + \pi_t + 0.5(\pi_t - \pi^*) + 0.5(y_t - y_t^*)$
Taylor (1999) rule	$i_t = 2 + \pi_t + 0.5(\pi_t - \pi^*) + (y_t - y_t^*)$
Taylor (1999) rule with higher r^*	$i_t = 2.75 + \pi_t + 0.5(\pi_t - \pi^*) + (y_t - y_t^*)$
First-difference rule	$i_t = i_{t-1} + 0.5(\pi_{t+3/t} - \pi^*) + 0.5(\Delta^4 y_{t+3/t} - \Delta^4 y_{t+3/t}^*)$

FRB/US Model Simulations: Prescriptions from the two empirical rules are computed using dynamic simulations of the FRB/US model, implemented as though the rule is followed starting at this FOMC meeting. The dotted line labeled “Previous Bluebook” is based on the current specification of the policy rule, applied to the previous Greenbook projection. Confidence intervals are based on stochastic simulations of the FRB/US model with shocks drawn from the estimated residuals over 1986-2005.

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

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

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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
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	6.08	4.52	6.10	5.15
07 -- High	5.41	5.27	5.19	5.19	5.32	5.26	5.00	4.86	4.96	5.10	2.52	2.53	6.45	4.59	6.34	5.54
07 -- Low	5.21	4.74	5.04	5.07	5.28	5.18	4.56	4.40	4.58	4.74	2.01	2.17	6.09	4.39	6.14	5.42
Monthly																
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
Oct 06	5.25	4.97	5.05	5.12	5.33	5.20	4.81	4.66	4.80	4.95	2.49	2.43	6.42	4.78	6.36	5.55
Nov 06	5.25	5.22	5.07	5.15	5.32	5.21	4.74	4.54	4.66	4.79	2.39	2.30	6.20	4.59	6.24	5.51
Dec 06	5.24	4.86	4.98	5.07	5.32	5.23	4.68	4.50	4.63	4.79	2.27	2.27	6.22	4.54	6.14	5.45
Jan 07	5.25	4.92	5.11	5.15	5.32	5.22	4.88	4.72	4.83	4.96	2.45	2.45	6.34	4.55	6.22	5.47
Feb 07	5.26	5.18	5.16	5.16	5.31	5.22	4.85	4.68	4.80	4.94	2.33	2.38	6.28	4.53	6.29	5.51
Weekly																
Jan 12 07	5.24	4.92	5.09	5.14	5.32	5.24	4.84	4.66	4.77	4.89	2.44	2.46	6.29	4.55	6.21	5.44
Jan 19 07	5.24	4.97	5.12	5.16	5.32	5.20	4.90	4.73	4.84	4.96	2.51	2.49	6.35	4.55	6.23	5.51
Jan 26 07	5.26	4.97	5.13	5.18	5.32	5.21	4.95	4.79	4.89	5.03	2.47	2.46	6.39	4.59	6.25	5.49
Feb 2 07	5.27	4.98	5.13	5.17	5.32	5.19	4.96	4.82	4.92	5.06	2.43	2.45	6.42	4.59	6.34	5.54
Feb 9 07	5.24	5.13	5.15	5.16	5.32	5.24	4.90	4.73	4.84	4.98	2.38	2.42	6.32	4.53	6.28	5.49
Feb 16 07	5.26	5.22	5.17	5.16	5.31	5.23	4.88	4.71	4.83	4.97	2.40	2.43	6.30	4.51	6.30	5.52
Feb 23 07	5.25	5.26	5.19	5.17	5.32	5.21	4.84	4.65	4.78	4.92	2.31	2.35	6.24	4.48	6.22	5.49
Mar 2 07	5.29	5.24	5.15	5.12	5.30	5.21	4.65	4.48	4.64	4.79	2.10	2.20	6.15	4.41	6.18	5.49
Mar 9 07	5.24	5.24	5.11	5.10	5.29	5.23	4.61	4.45	4.62	4.77	2.08	2.21	6.19	4.39	6.14	5.47
Mar 16 07	--	5.24	5.07	5.11	5.30	5.23	4.60	4.43	4.62	4.79	2.05	2.21	--	--	6.14	5.42
Daily																
Feb 27 07	5.27	5.22	5.14	5.10	5.31	5.20	4.61	4.43	4.58	4.74	2.07	2.17	6.09	--	--	--
Feb 28 07	5.41	5.24	5.16	5.12	5.30	5.21	4.66	4.49	4.64	4.79	2.10	2.21	6.16	--	--	--
Mar 1 07	5.31	5.26	5.15	5.11	5.30	5.20	4.64	4.48	4.64	4.80	2.09	2.20	6.18	--	--	--
Mar 2 07	5.23	5.24	5.12	5.07	5.29	5.21	4.58	4.44	4.61	4.77	2.04	2.17	6.16	--	--	--
Mar 5 07	5.27	5.24	5.10	5.08	5.28	5.24	4.57	4.44	4.60	4.76	2.07	2.19	6.19	--	--	--
Mar 6 07	5.22	5.24	5.14	5.10	5.29	5.21	4.62	4.46	4.62	4.77	2.08	2.20	6.19	--	--	--
Mar 7 07	5.24	5.25	5.12	5.09	5.29	5.24	4.58	4.42	4.59	4.75	2.06	2.19	6.16	--	--	--
Mar 8 07	5.24	5.25	5.10	5.09	5.29	5.23	4.59	4.43	4.60	4.76	2.06	2.20	6.18	--	--	--
Mar 9 07	5.24	5.23	5.10	5.14	5.29	5.22	4.70	4.52	4.67	4.83	2.14	2.27	6.24	--	--	--
Mar 12 07	5.25	5.24	5.09	5.13	5.30	5.25	4.66	4.47	4.64	4.80	2.11	2.24	6.21	--	--	--
Mar 13 07	5.25	5.23	5.09	5.10	5.30	5.23	4.56	4.40	4.59	4.76	2.01	2.18	6.20	--	--	--
Mar 14 07	5.27	5.25	5.06	5.10	5.30	5.21	4.58	4.42	4.62	4.80	2.02	2.19	6.25	--	--	--
Mar 15 07	5.27 ^p	5.23	5.05	5.12	5.30	--	4.61	4.43	4.62	4.80	2.05	2.19	--	--	--	--

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>			
2004	5.4	5.4	5.3
2005	0.3	4.1	5.1
2006	-0.5	5.0	6.4
<u>Quarterly (average)</u>			
2006-Q1	1.3	5.4	6.4
Q2	0.5	3.3	4.0
Q3	-3.5	4.2	6.2
Q4	-0.1	6.8	8.5
<u>Monthly</u>			
2006-Feb.	-3.2	4.2	6.1
Mar.	7.5	3.3	2.3
Apr.	-3.2	3.4	5.1
May	6.3	1.9	0.8
June	-10.1	4.5	8.3
July	-3.9	4.3	6.4
Aug.	0.4	4.8	6.0
Sep.	-6.6	4.0	6.7
Oct.	4.6	8.7	9.7
Nov.	1.2	7.0	8.5
Dec.	-4.3	7.6	10.4
2007-Jan.	5.1	10.3	11.5
Feb. p	-10.4	5.3	9.0
<u>Levels (\$billions):</u>			
<u>Monthly</u>			
2006-Oct.	1369.1	6936.3	5567.1
Nov.	1370.5	6977.0	5606.6
Dec.	1365.6	7021.0	5655.4
2007-Jan.	1371.4	7081.0	5709.6
Feb. p	1359.5	7112.1	5752.6
<u>Weekly</u>			
2007-Feb. 5	1390.3	7092.4	5702.1
12	1361.5	7097.9	5736.4
19	1351.0	7110.1	5759.1
26p	1347.6	7144.3	5796.7
Mar. 5p	1379.2	7127.5	5748.3

p preliminary

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

March 15, 2007

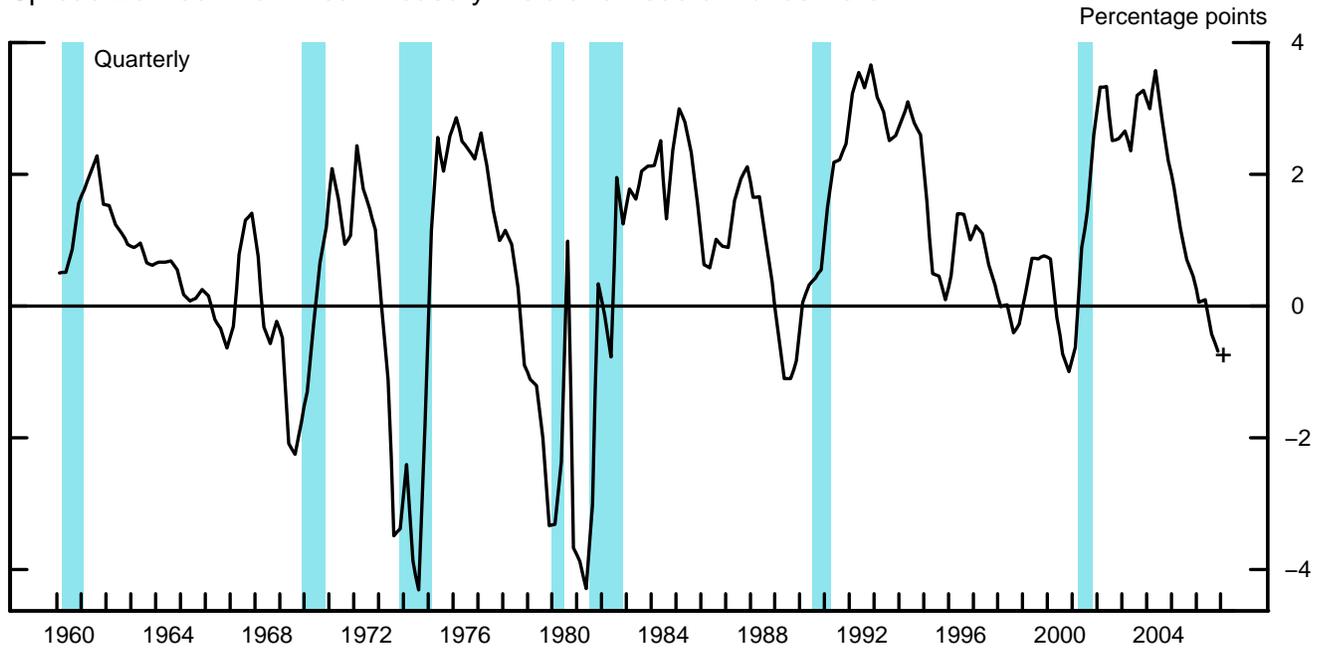
	Treasury Bills			Treasury Coupons						Federal Agency Redemptions (-)	Net change total outright holdings ⁴	Net RPs ⁵		
	Net Purchases ²	Redemptions (-)	Net Change	Net Purchases ³				Redemptions (-)	Net Change			Short-Term ⁶	Long-Term ⁷	Net Change
				< 1	1-5	5-10	Over 10							
2004	18,138	---	18,138	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
2005 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
QIV	---	---	---	1,977	9,525	889	1,852	4,084	10,159	---	10,159	-2,379	4,848	2,469
2006 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
Oct	---	---	---	1,757	1,395	33	---	3,749	-564	---	-564	-2,037	1,195	-842
Nov	---	---	---	220	3,151	411	780	335	4,227	---	4,227	-1,370	7,639	6,268
Dec	---	---	---	---	4,979	445	1,072	---	6,496	---	6,496	2,851	-155	2,696
2007 Jan	---	---	---	---	---	---	---	---	---	---	---	-428	-3,806	-4,234
Feb	---	---	---	817	1,061	---	---	---	1,878	---	1,878	-6,853	3,911	-2,941
2006 Dec 20	---	---	---	---	1,329	---	748	---	2,077	---	2,077	8,005	-3,000	5,005
Dec 27	---	---	---	---	1,342	---	---	---	1,342	---	1,342	-6,860	10,000	3,140
2007 Jan 3	---	---	---	---	---	---	---	---	---	---	---	6,785	2,000	8,785
Jan 10	---	---	---	---	---	---	---	---	---	---	---	-5,400	-9,000	-14,400
Jan 17	---	---	---	---	---	---	---	---	---	---	---	1,101	-1,000	101
Jan 24	---	---	---	---	---	---	---	---	---	---	---	-4,817	-3,000	-7,817
Jan 31	---	---	---	---	---	---	---	---	---	---	---	4,597	---	4,597
Feb 7	---	---	---	---	---	---	---	---	---	---	---	-8,890	2,000	-6,890
Feb 14	---	---	---	---	---	---	---	---	---	---	---	1,718	2,000	3,718
Feb 21	---	---	---	---	---	---	---	---	---	---	---	2,841	4,000	6,841
Feb 28	---	---	---	817	1,061	---	---	---	1,878	---	1,878	-4,889	5,000	111
Mar 7	---	---	---	---	---	---	---	---	---	---	---	-845	-2,000	-2,845
Mar 14	---	---	---	---	---	---	---	---	---	---	---	2,719	-2,000	719
2007 Mar 15	---	---	---	---	---	---	---	---	---	---	---	726	-3,000	-2,274
Intermeeting Period	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Jan 31-Mar 15	---	---	---	817	1,061	---	---	---	1,878	---	1,878	3,729	6,000	9,729
Memo: LEVEL (bil. \$)	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mar 15	---	---	277.0	130.2	224.6	66.5	82.5	---	503.8	---	730.8	-20.0	21.0	1.0

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.

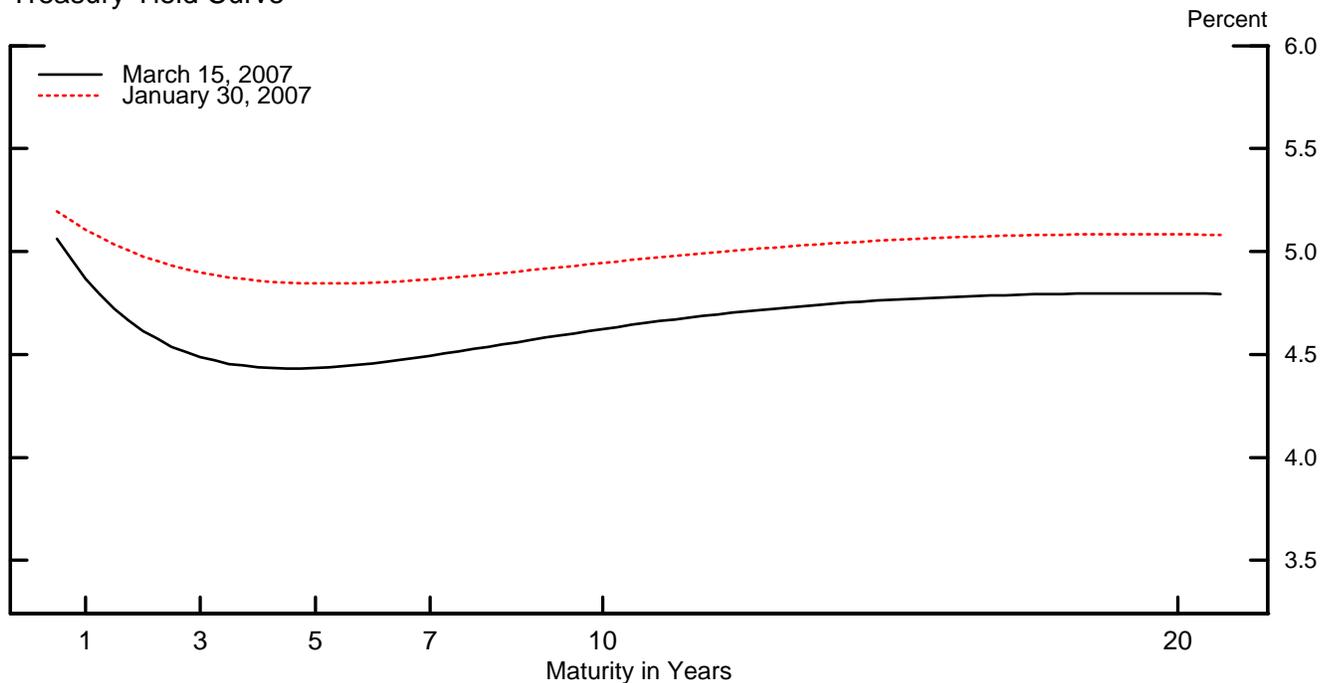
Treasury Yield Curve

Spread Between Ten-Year Treasury Yield and Federal Funds Rate



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

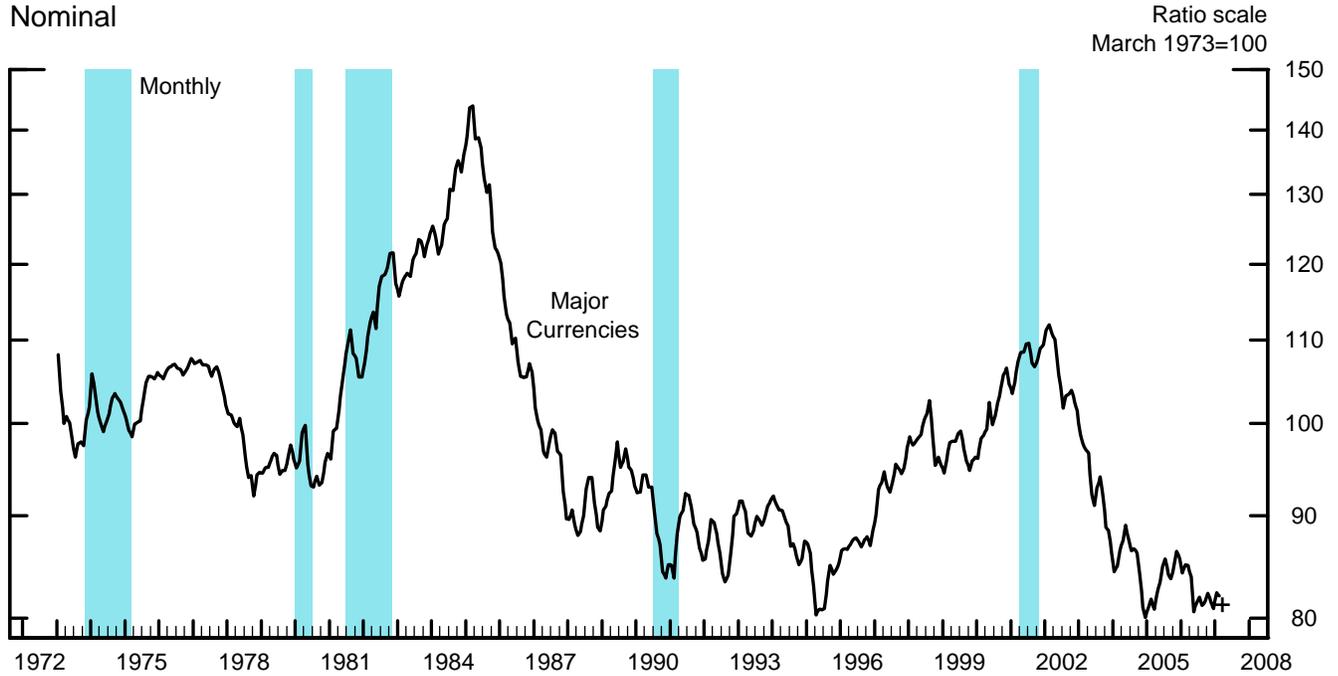
Treasury Yield Curve*



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

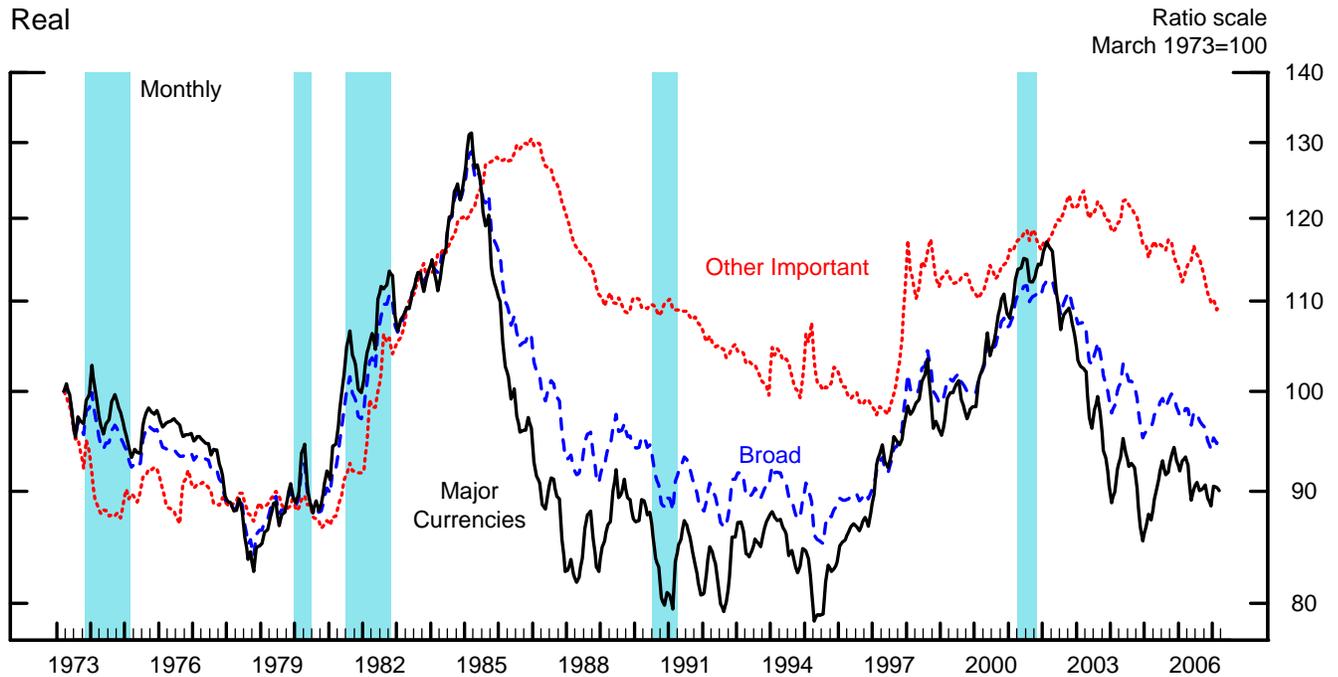
Dollar Exchange Rate Indexes

Nominal



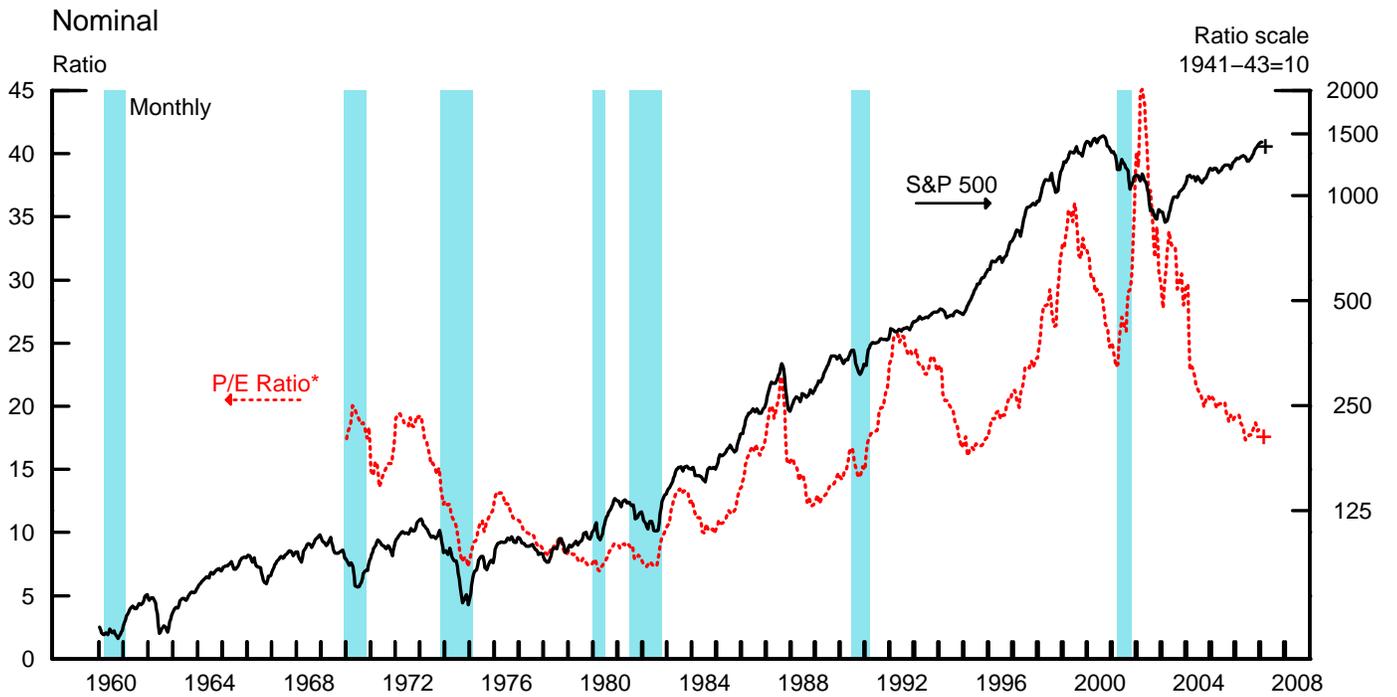
+ Denotes most recent weekly value.

Real

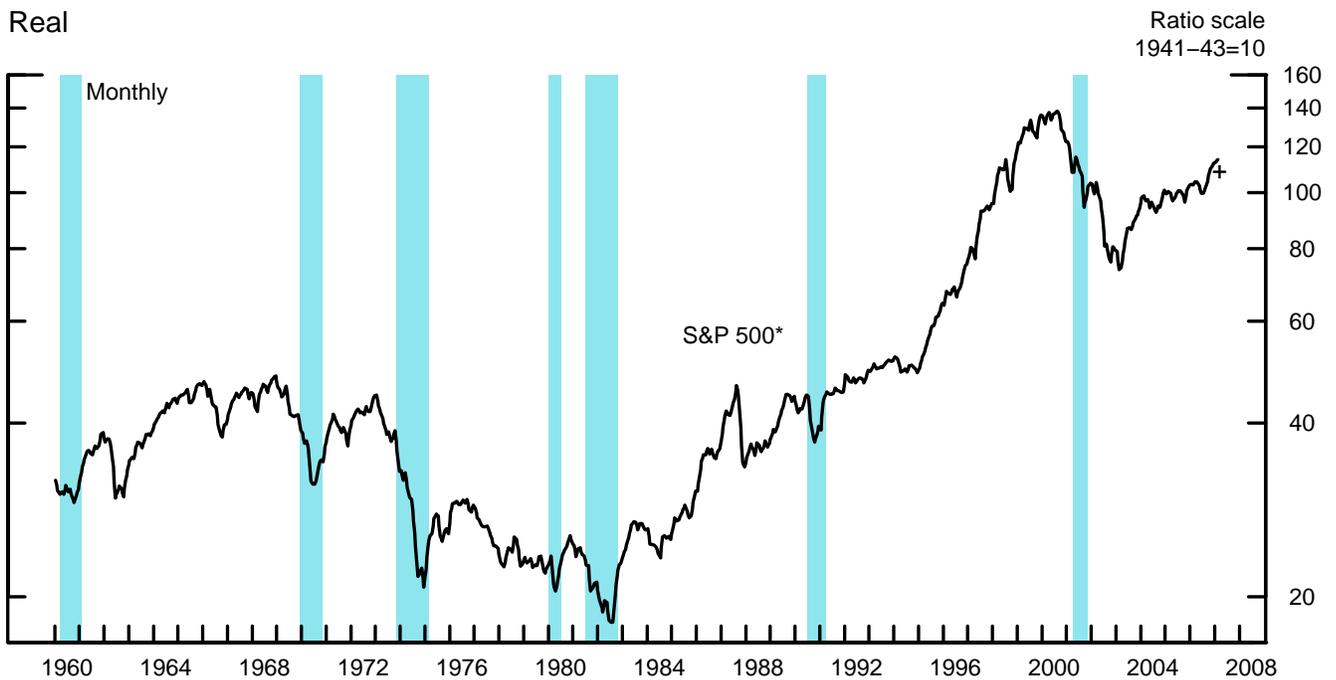


Note. The major currencies index is the trade-weighted average of currencies of the euro area, Canada, Japan, the U.K., Switzerland, Australia, and Sweden. The other important trading partners index is the trade-weighted average of currencies of 19 other important trading partners. The Broad index is 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. The most recent monthly observations are based on staff forecasts of CPI inflation for those countries where actual data are not yet available.

Stock Indexes



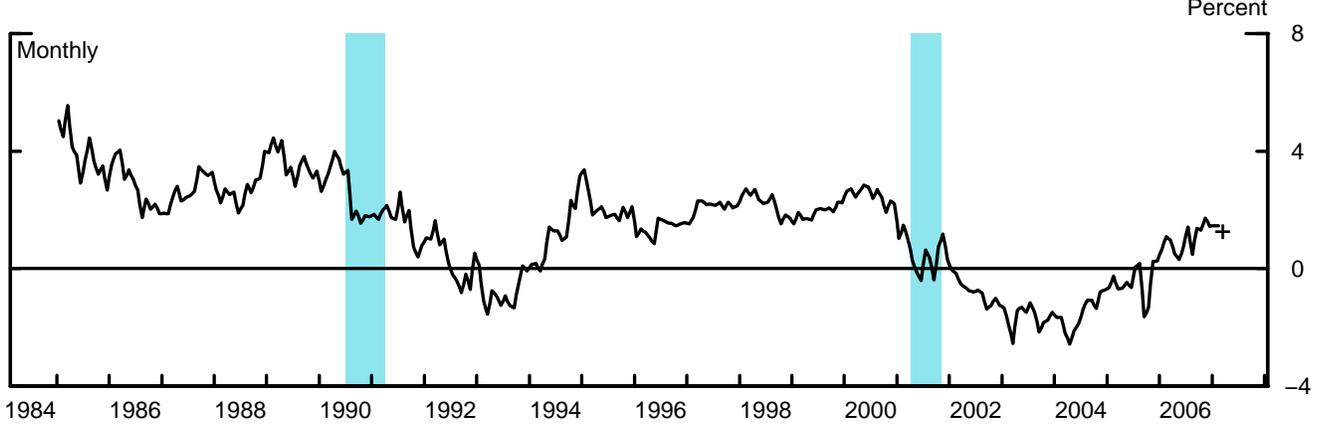
* Based on trailing four-quarter earnings.
+ Denotes most recent weekly value.



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

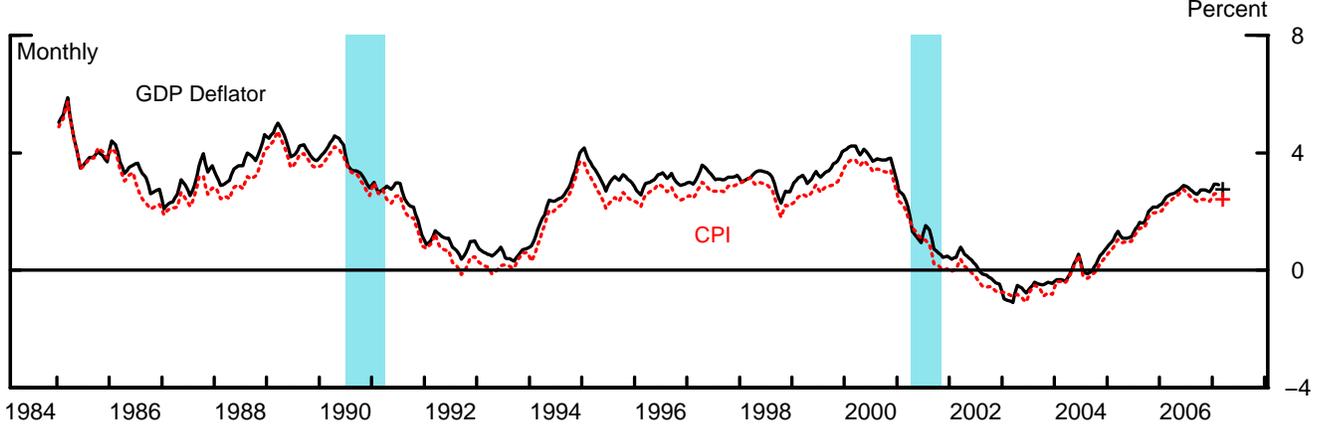
One-Year Real Interest Rates

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



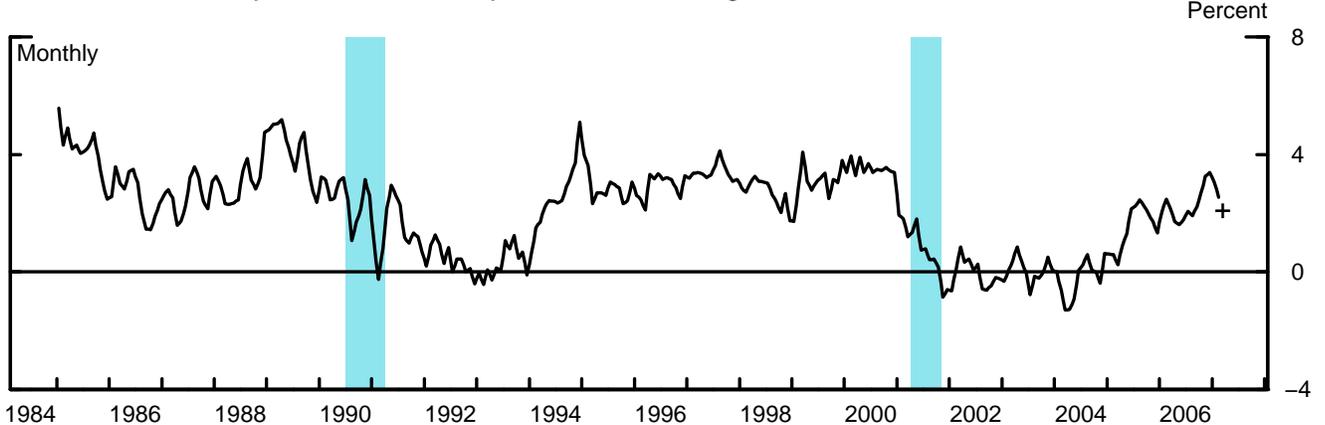
* Mean value of respondents.

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.

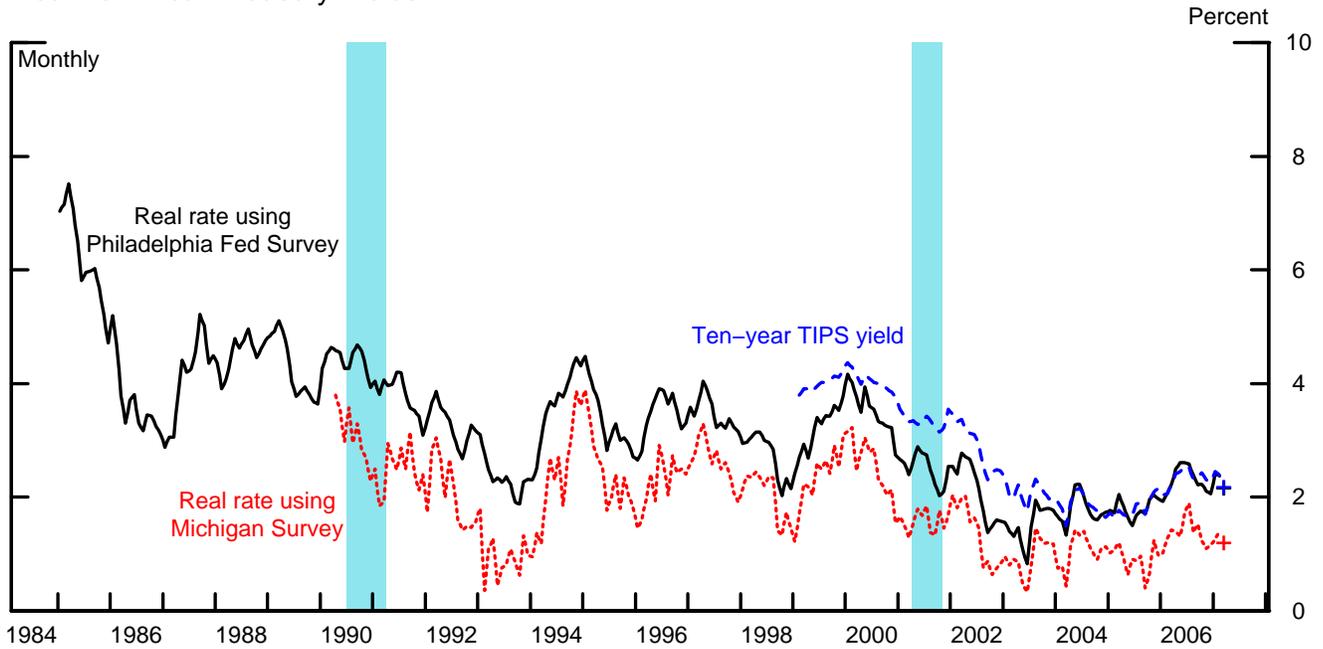
One-Year Treasury Constant Maturity Yield Less Change in the Core CPI from Three Months Prior



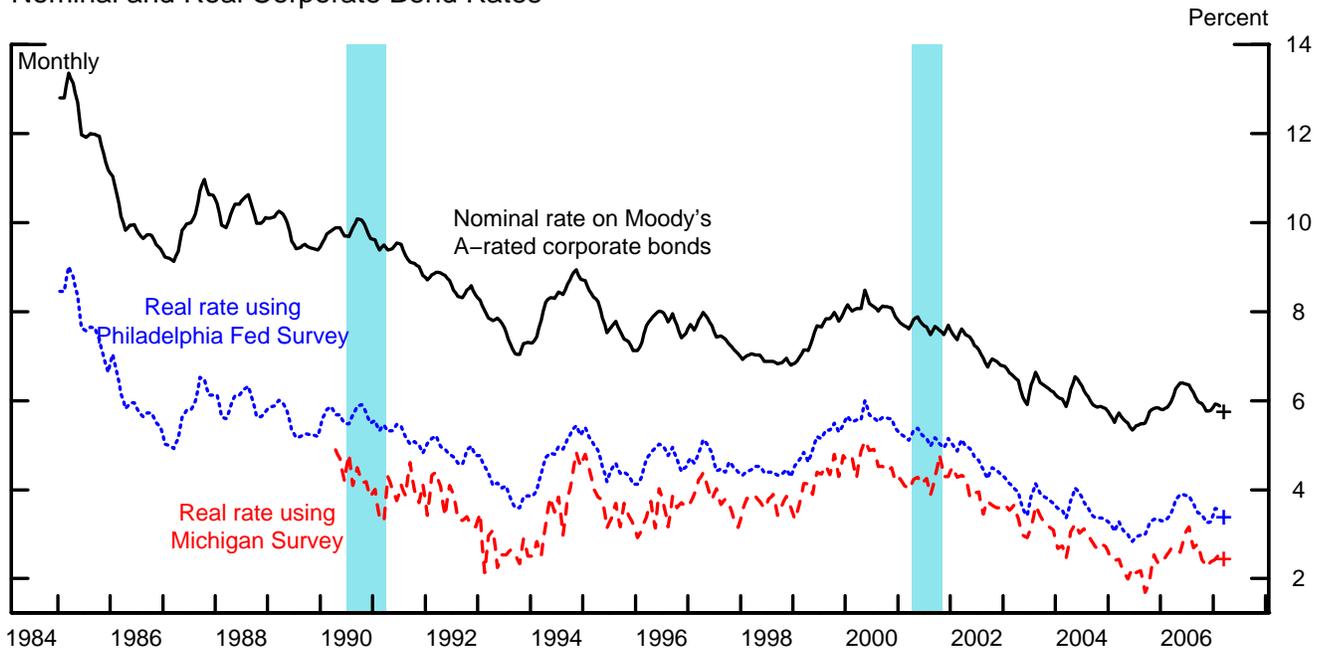
+ Denotes most recent weekly Treasury constant maturity yield less most recent inflation expectation.
Note. Blue shaded regions denote NBER-dated recessions.

Long-Term Real Interest Rates*

Real Ten-Year Treasury Yields



Nominal and Real Corporate Bond Rates



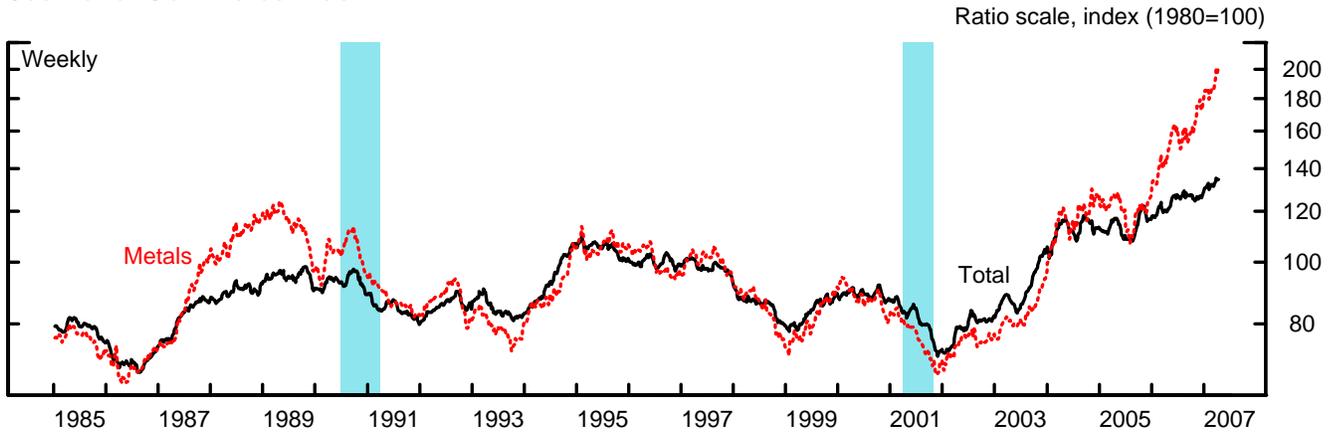
* For real rates, measures using the Philadelphia Fed Survey employ the ten-year inflation expectations from the Blue Chip Survey until April 1991 and the Philadelphia Federal Reserve Bank Survey of Professional Forecasters thereafter (median value of respondents). Measures using the Michigan Survey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

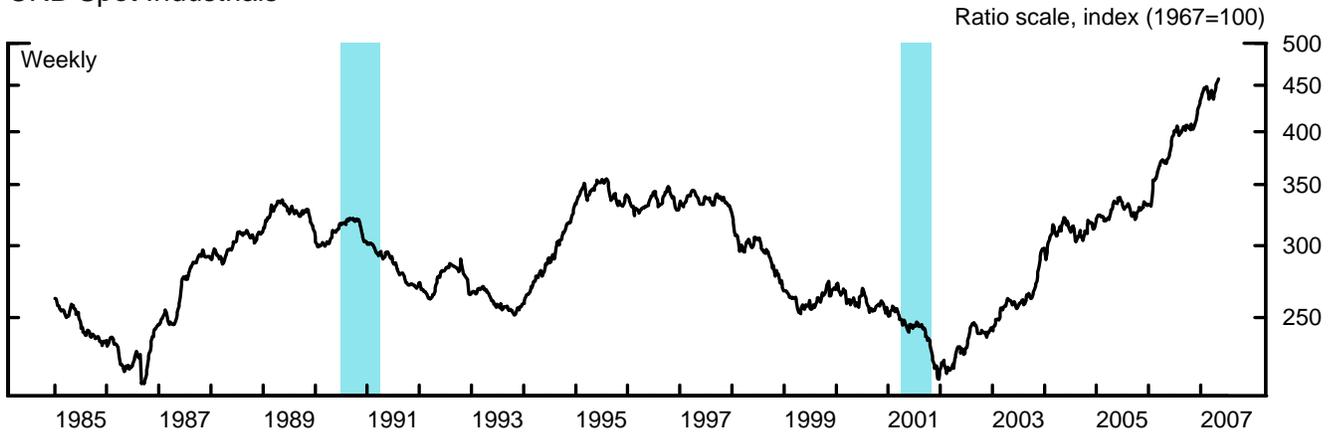
Note. Blue shaded regions denote NBER-dated recessions.

Commodity Price Measures

Journal of Commerce Index



CRB Spot Industrials



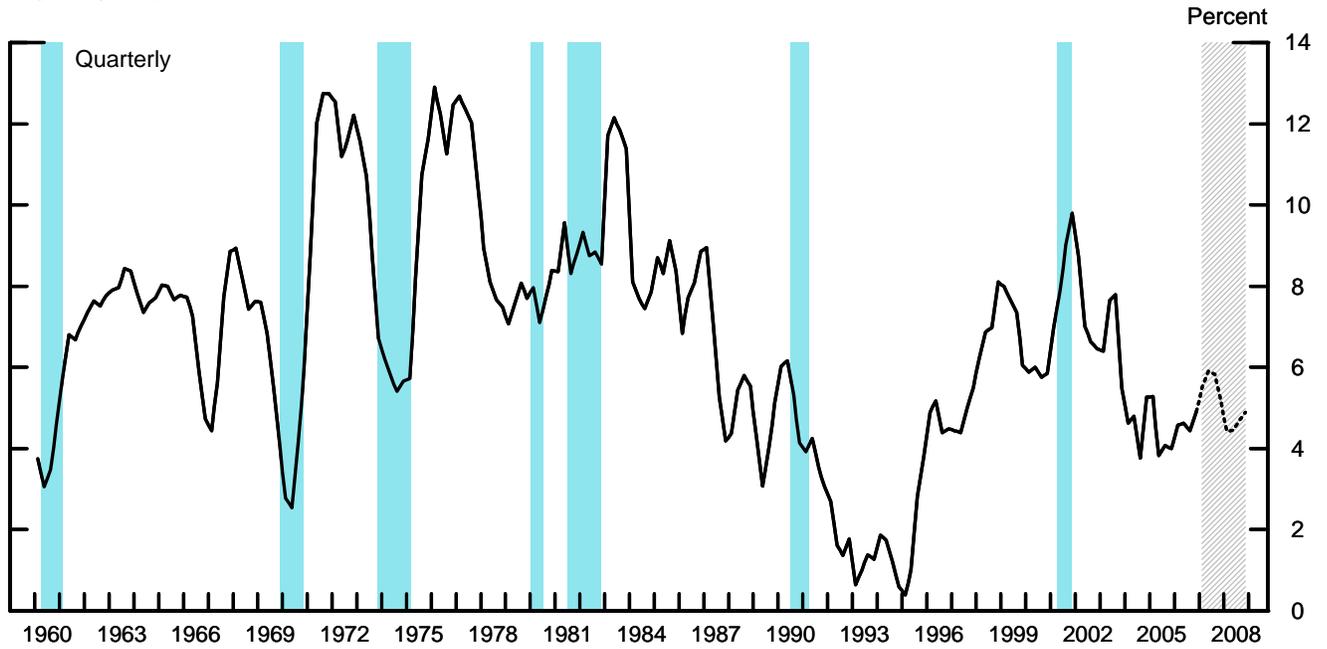
CRB Futures



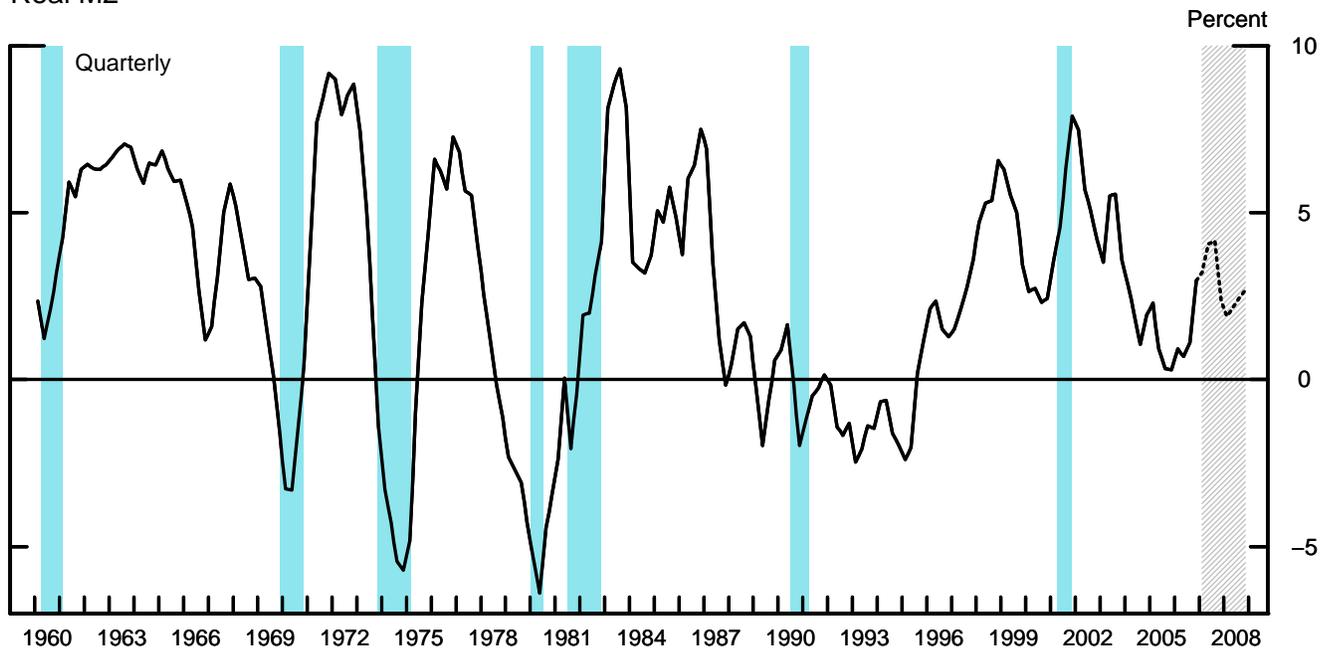
Note. Blue shaded regions denote NBER-dated recessions.

Growth of M2

Nominal M2

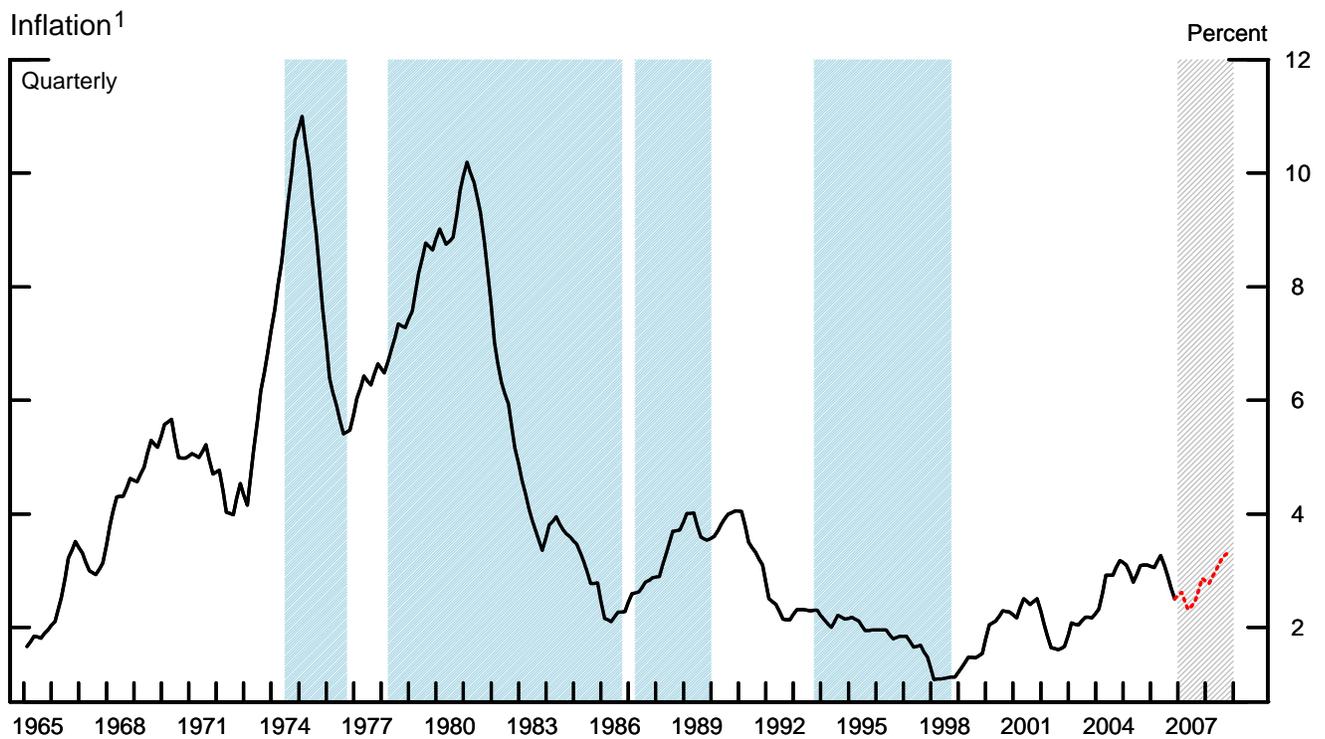
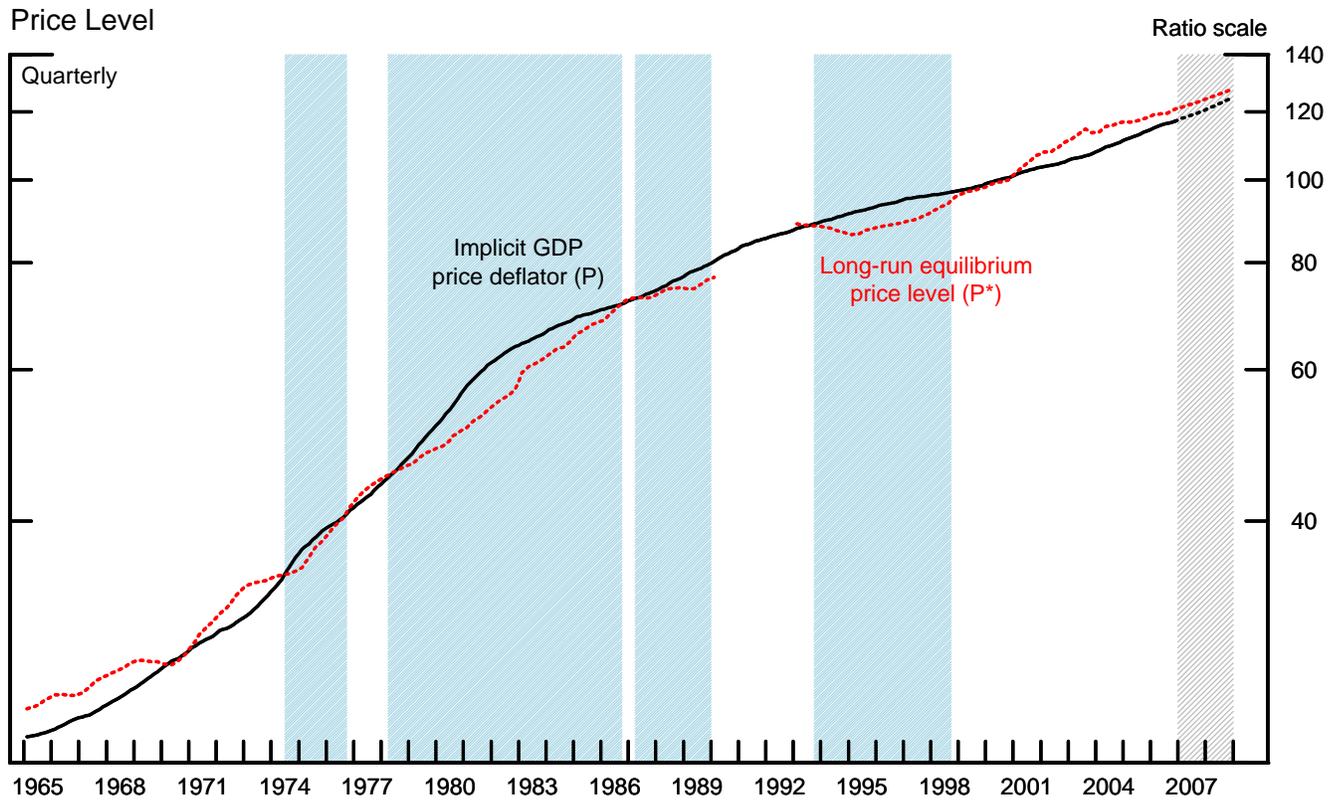


Real M2



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.