

Prefatory Note

The attached document represents the most complete and accurate version available based on original files from the FOMC Secretariat at the Board of Governors of the Federal Reserve System.

Please note that some material may have been redacted from this document if that material was received on a confidential basis. Redacted material is indicated by occasional gaps in the text or by gray boxes around non-text content. All redacted passages are exempt from disclosure under applicable provisions of the Freedom of Information Act.

STRICTLY CONFIDENTIAL (FR) CLASS I FOMC

JANUARY 27, 2005

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 Committee's decision at its December meeting to increase the target federal funds rate 25 basis points to 2¼ percent, to assess the risks to both sustainable economic growth and price stability as balanced, and to retain the "measured pace" language had been widely anticipated. Nonetheless, the expected path of policy shifted down a little following the announcement as investors had apparently put some odds on a firmer tone to the statement. That decline was more than reversed over the intermeeting period, however, following economic data releases that were read as confirming that the expansion remains on track and the publication of the minutes of the December FOMC meeting (see box), on the new, expedited schedule.¹ As to the minutes, market participants reportedly focused on the concerns about inflation expressed by some at the December meeting as well as comments about possible excessive risk-taking in asset markets. Judging from federal funds futures quotes and the Desk's most recent survey of primary dealers, investors are virtually certain of a 25 basis point increase in the target federal funds rate at the upcoming meeting and apparently place high odds on similar hikes at the two subsequent meetings (Chart 1). Currently, futures quotes suggest an expected federal funds rate

¹ The effective federal funds rate averaged close to 2¼ percent over the intermeeting period. The Desk expanded the System's outright holdings of securities by about \$200 million through purchases of Treasury bills from customer accounts. The Desk made no purchases of Treasury bills or coupon securities in the market. The volume of outstanding long-term RPs decreased \$4 billion, to \$16 billion, as seasonal demand for currency ebbed. In recent days, reserve demands have once again been shifted forward in the maintenance period given near-universal expectations of an increase in the target funds rate. This shift has been associated with some upward pressure on the federal funds rate.

of about 3¼ percent at the end of 2005, but primary dealers reported an average expectation about ¼ percentage point higher.

Expedited Release of the December FOMC Minutes

The minutes of the December 2004 FOMC meeting were published on January 4, the first release of minutes on the new expedited schedule. Market participants were reportedly a bit surprised by the extent of the discussion of upside risks to inflation and, in response, marked up the expected pace of policy tightening somewhat. The discussion of “excessive risk-taking” also garnered some attention from market participants. Two-year yields rose about 6 basis points in a narrow window around the release of the minutes, while inflation compensation measured from TIPS fell a touch.

The figure below shows the change in two-year yields around the release of minutes over the last eight years. The December minutes had an effect that was among the larger reactions to minutes releases over the last eight years, but it is hard to know if this is because they provided more information than usual, because they were more timely, or because the press and the public paid particularly close attention given the novelty of the expedited release. The effect of the December minutes was in any case well within the range of responses to previous FOMC minutes releases. Going forward, the expedited schedule may, to some extent, speed up the dissemination of information about the FOMC’s outlook that was previously provided incrementally. If so, market responses to speeches delivered after the minutes release, and even to the statement at the subsequent FOMC meeting may become more muted.

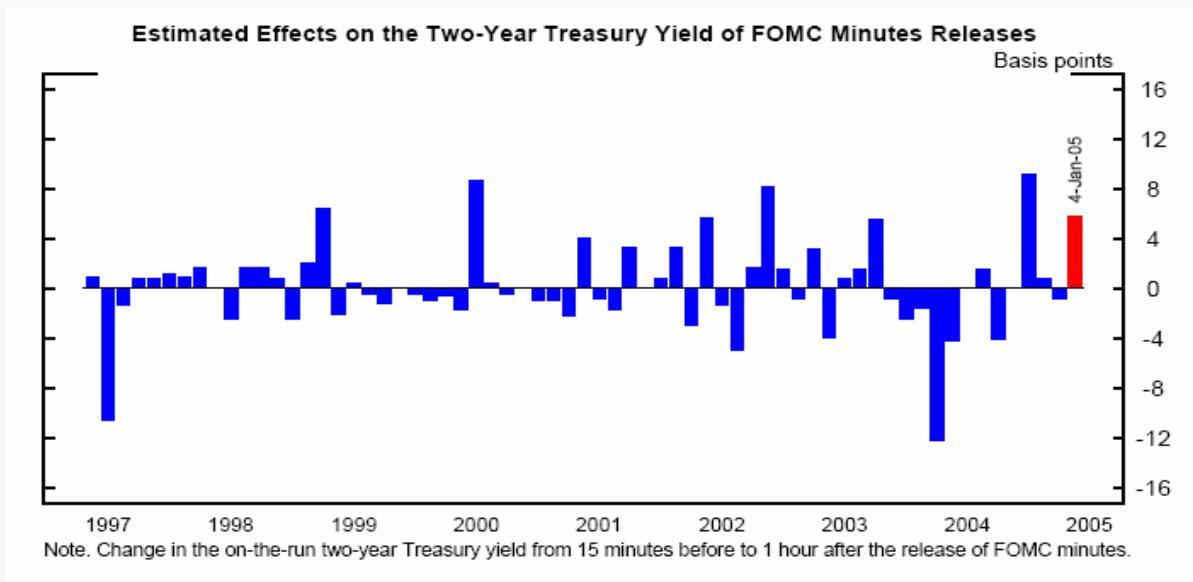
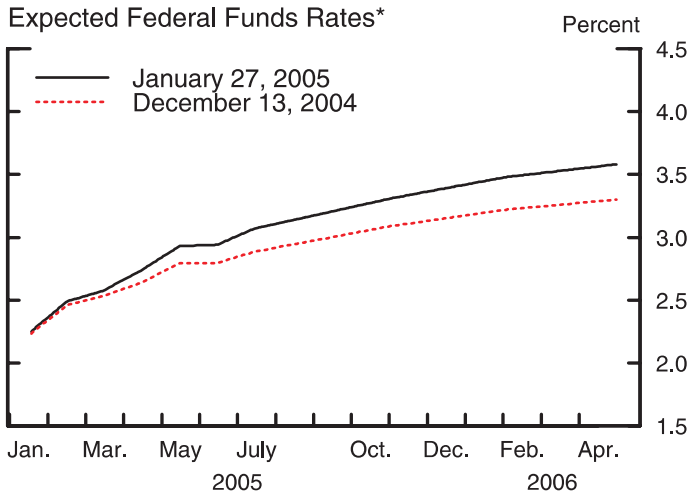
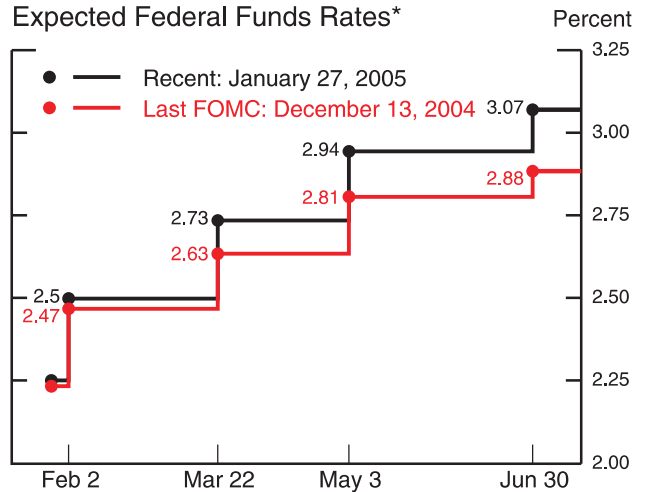


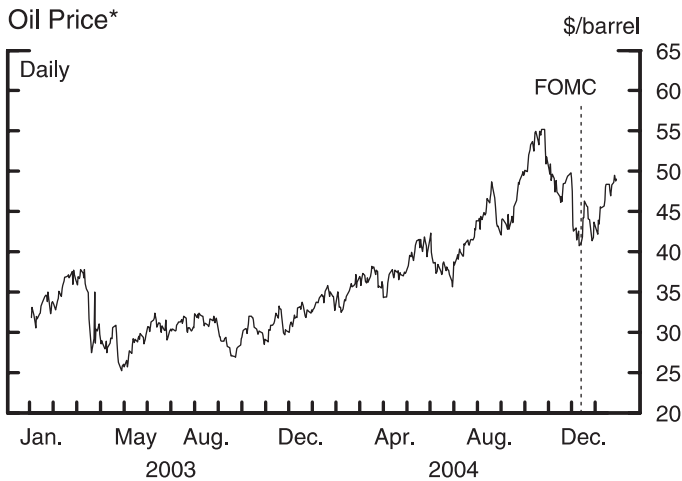
Chart 1 Interest Rate Developments



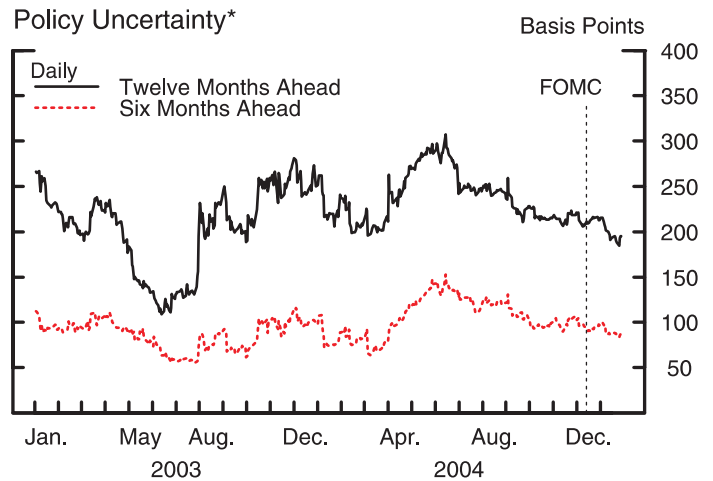
*Estimates from federal funds and eurodollar futures, with an allowance for term premia and other adjustments.



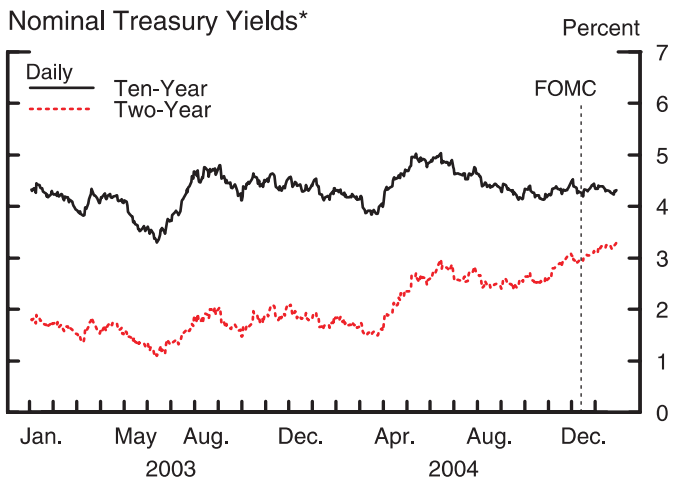
*Estimates from federal funds futures with an allowance for term premia and other adjustments.



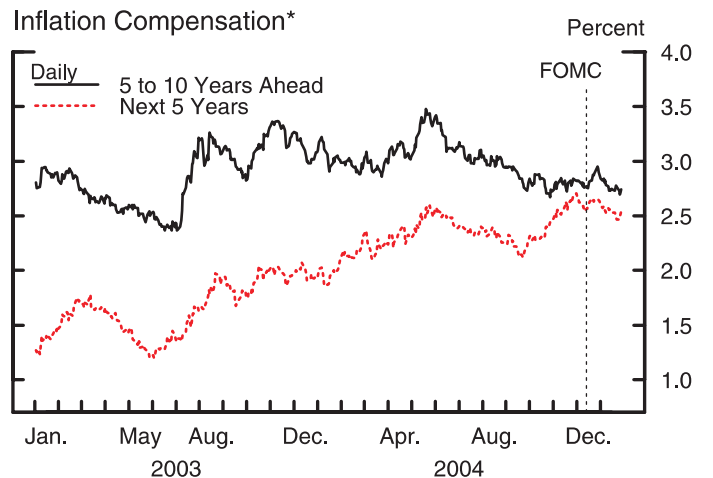
*Spot WTI price.



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



*Par yields from an estimated off-the-run Treasury yield curve.



*Based on a comparison of an estimated TIPS yield curve to an estimated nominal off-the-run Treasury yield curve.

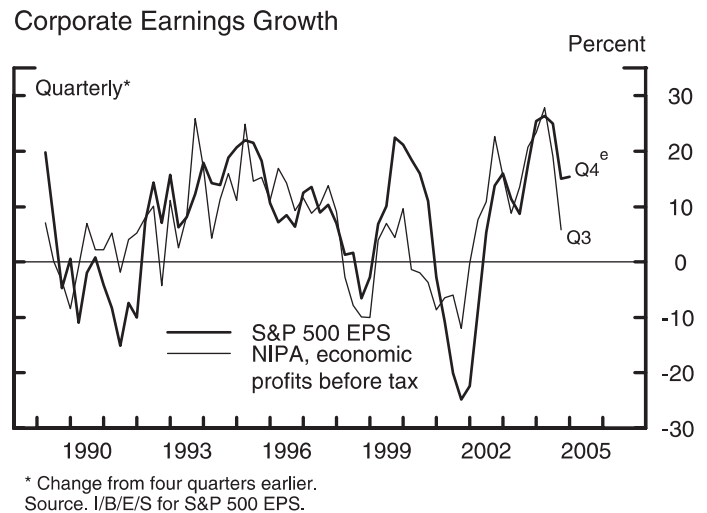
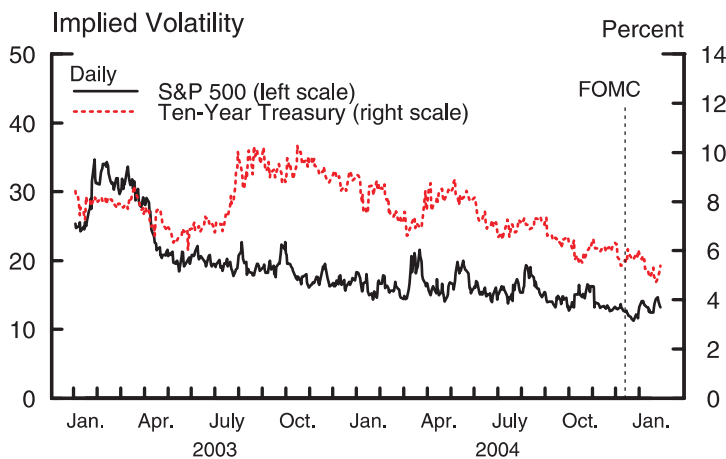
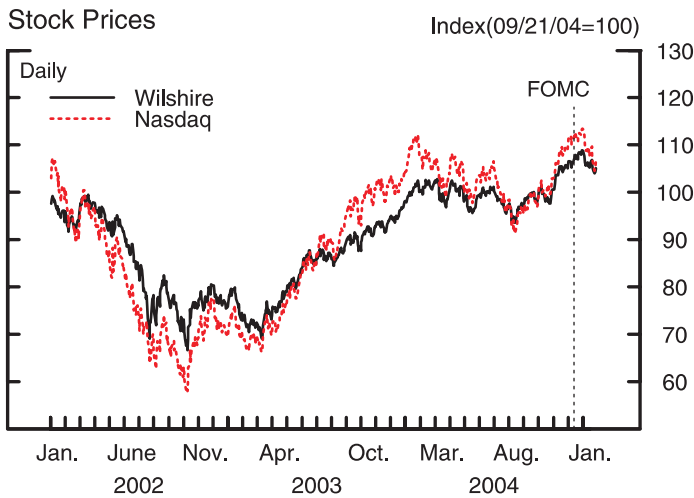
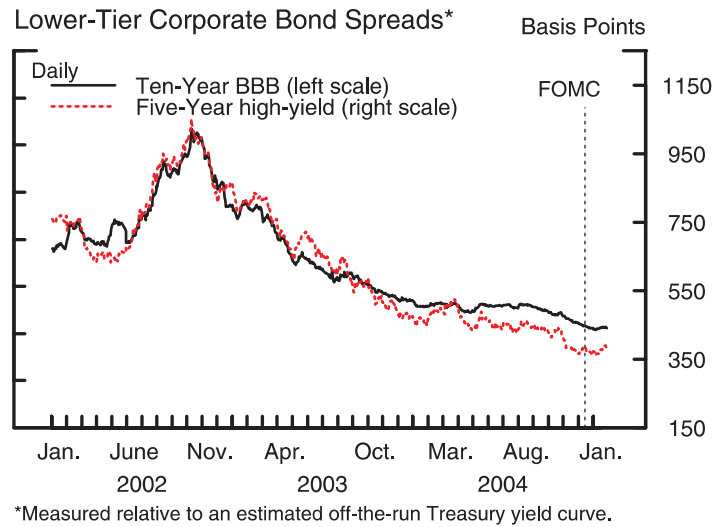
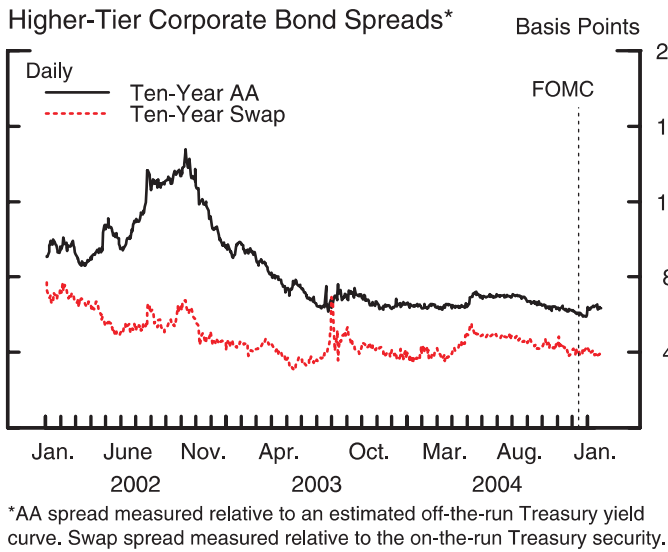
Note: Vertical lines indicate December 13, 2004. Last daily observations are for January 27, 2005.

(2) The upward revision to the anticipated path of monetary policy contributed to a rise in yields on short- and intermediate-term Treasury notes. In contrast, the ten-year Treasury yield was little changed, on net, implying that longer-horizon forward rates declined notably. Much of the drop in these forward rates appears to be attributable to declines in real rates, judging from TIPS yields and flat survey measures of long-term inflation expectations. The reasons for the decline in far-ahead nominal forward rates are not entirely evident. Higher oil prices may have led investors to trim their assessment of the cumulative amount of monetary policy restraint required to foster sustainable economic growth. Moreover, actual and implied volatility of interest rates declined further, possibly contributing to a narrowing of term premiums embedded in longer-term rates.

(3) Yields on investment- and speculative-grade corporate bonds generally followed those on Treasuries, and as a result, risk spreads on such securities barely budged (Chart 2). Spreads in both sectors remain thin by historical standards, no doubt in part because default rates are quite subdued and corporate balance sheets are generally healthy. Broad equity indexes, weighed down by higher oil prices and lackluster earnings announcements and guidance, ended the period down about 2 percent.

(4) The value of the dollar against a broad index of currencies moved over a wide range, but ended the intermeeting period about unchanged (Chart 3). Ongoing concern about the U.S. current account deficit pushed the dollar toward record lows in December, but the dollar subsequently rolled back those losses as focus shifted to the continuing strength of the U.S. economic expansion and a firmer outlook for monetary policy in the United States. Markets were volatile at times following a variety of comments by officials that were interpreted as offering differing views on

Chart 2 Capital Market Developments

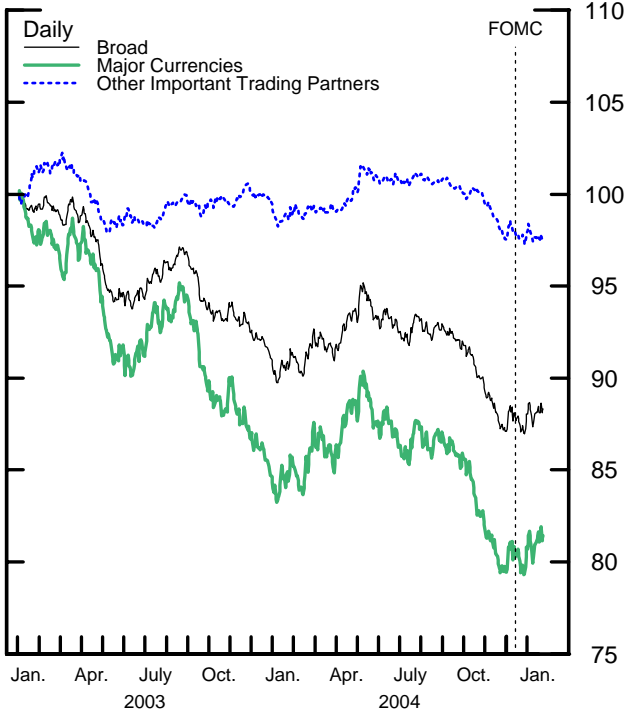


Note: Vertical lines indicate December 13, 2004. Last daily observations are for January 27, 2005.

International Financial Indicators

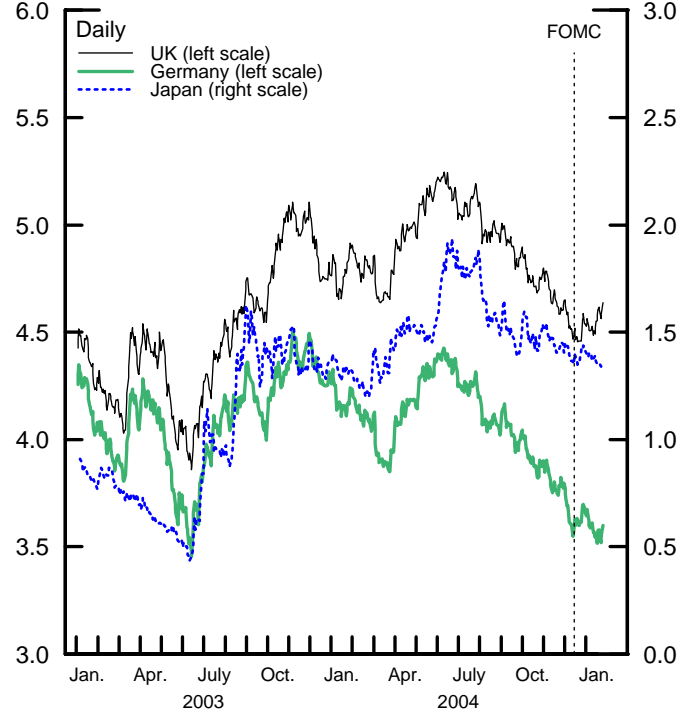
Nominal Trade-Weighted Dollar Indexes

Index(12/31/02=100)



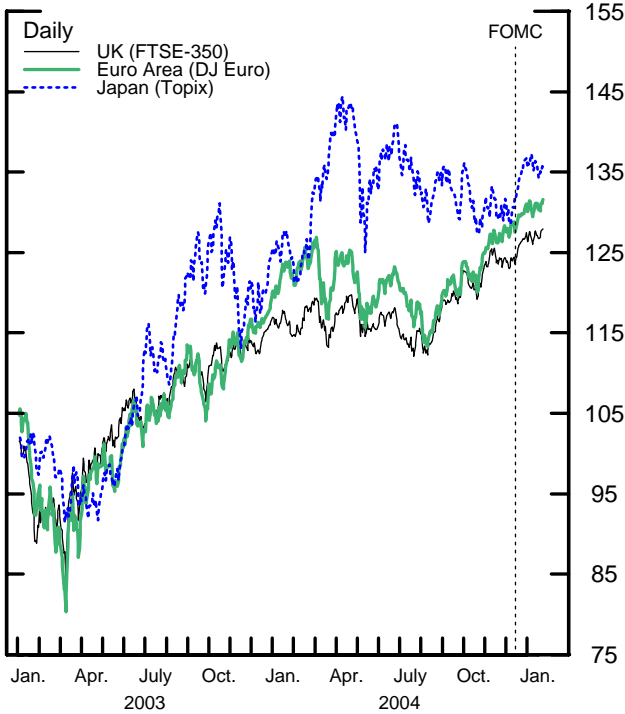
Ten-Year Government Bond Yields

Percent



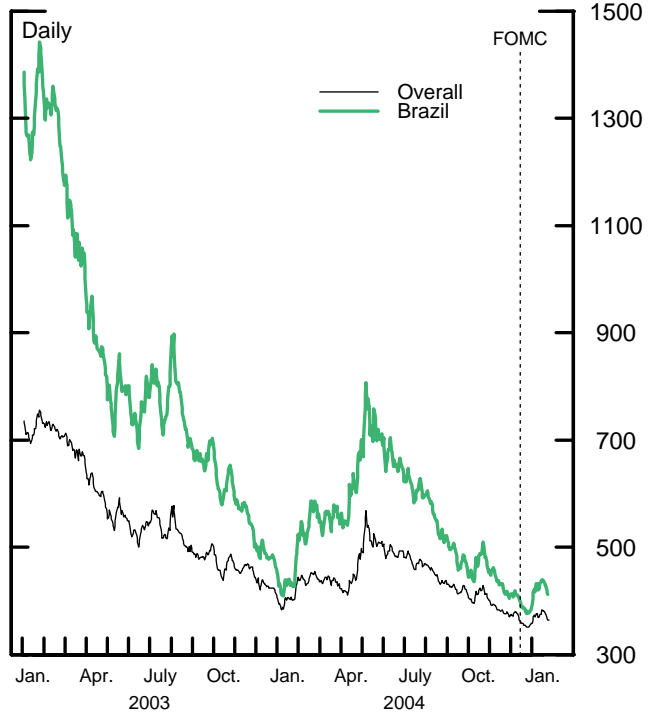
Stock Price Indexes

Index(12/31/02=100)



EMBI+ Index

Basis Points



the inclinations of foreign officials to intervene to stabilize currency values.² Against individual major foreign currencies, the dollar fell 2¼ percent versus the Japanese yen and very slightly against the Canadian dollar. However, the dollar firmed almost 2 percent against the euro and sterling over the period. Yields on longer-term government bonds generally were little changed during the intermeeting period, while foreign stock prices rose between 1 and 4 percent.

(5) Against several other Asian currencies, the dollar fell about 2 percent, and monetary authorities in Korea and Taiwan were said to be intervening heavily in foreign exchange markets to stem upward pressure on their currencies.³ Rates on forward contracts on the Chinese renminbi fluctuated amid conflicting comments by Chinese officials about future changes in China's currency peg and on speculation that the Chinese currency regime would be a topic at the G-8 meeting in early February. In Brazil, the central bank increased its policy rate 50 basis points in late December and another 50 basis points in mid-January in response to inflationary pressures; the *real* appreciated almost 4 percent against the dollar, but Brazilian stocks lost about 5 percent over the intermeeting period.

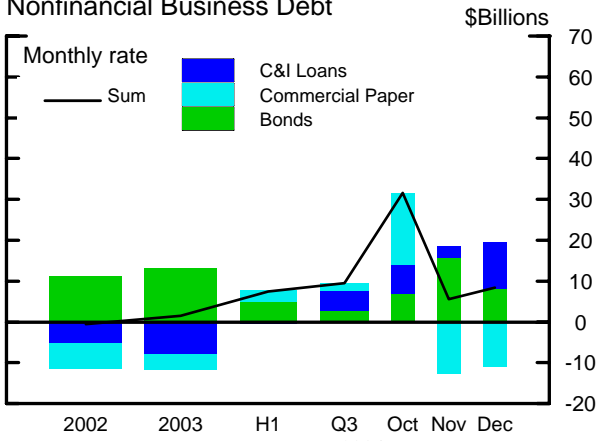
(6) Domestic nonfinancial business sector debt is estimated to have risen at a 6¼ percent rate in the fourth quarter, up somewhat from its third-quarter pace, supported by a pickup in net bond issuance and a sizable increase in C&I loans (Chart 4). According to the latest Senior Loan Officer Opinion Survey, commercial banks again eased terms and standards for lending to businesses in recent months, and loan demand from households weakened slightly. Nevertheless, household debt appears to have continued to grow briskly in the fourth quarter. Federal debt accelerated to a 7¼ percent annual rate in the final quarter of 2004, and total domestic nonfinancial debt also expanded at a 7¼ percent pace.

2

³ Neither Korea nor Taiwan reports its foreign exchange interventions to the Desk.

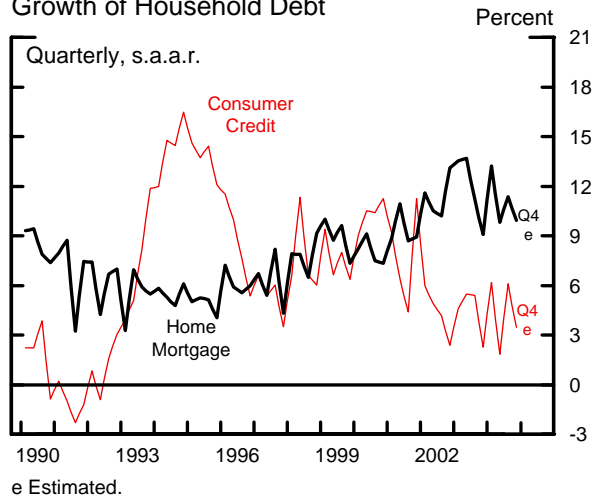
Chart 4 Debt and Money

Changes in Selected Components of Nonfinancial Business Debt

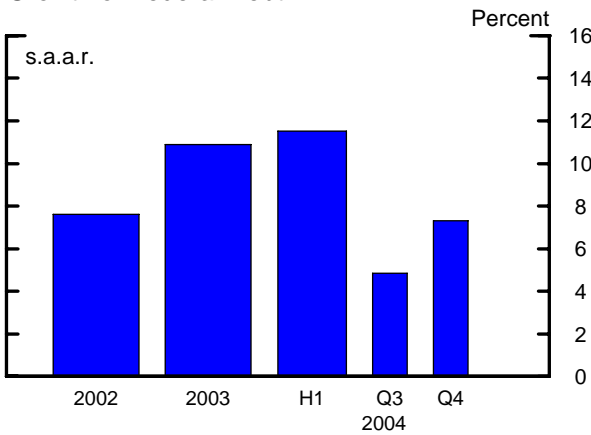


Note. Commercial paper and C&I loans are seasonally adjusted, bonds are not.

Growth of Household Debt



Growth of Federal Debt



Note. Treasury debt held by the public at period-end.

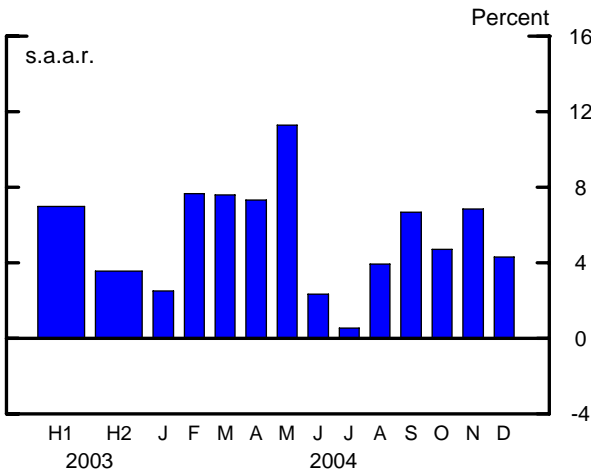
Growth of Nonfinancial Debt

Percent, s.a.a.r.

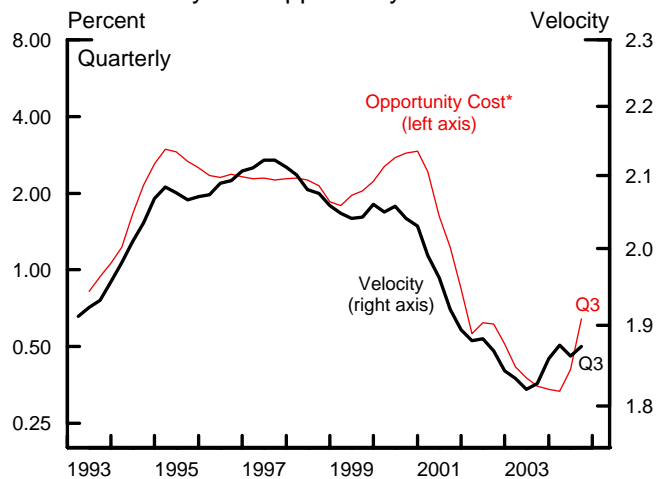
		Total	Nonfederal
2003		8.1	7.5
2004	Q1	9.2	8.6
	Q2	6.9	6.1
	Q3	7.1	7.6
	Q4 ^e	7.2	7.2

e Estimated.

Growth of M2



M2 Velocity and Opportunity Cost



*Two-quarter moving average.

(7) M2 increased at about a 4 $\frac{1}{4}$ percent annual rate in December and appears to be accelerating to about a 5 $\frac{3}{4}$ percent pace in January.⁴ Within this aggregate, growth in small time deposits—returns on which tend to track market rates closely—was particularly brisk, although apparently at the expense of liquid deposits—whose return tends to lag market interest rates. Smoothing through monthly fluctuations, M2 appears to be growing a bit below the pace of nominal income, a pattern consistent with its rising opportunity cost as monetary policy tightens.

⁴ These data incorporate the effects of the annual seasonal factor review and are confidential until their release, which is planned for February 3.

Economic Outlook

(8) The basic contours of the staff forecast have changed little since the December Greenbook, with real GDP growth again expected to average around $3\frac{3}{4}$ percent this year and next. The staff has taken on board the upward revision to market expectations of policy action observed over the intermeeting period and now envisions that the federal funds rate will reach $3\frac{1}{2}$ percent by the end of 2006, a quarter-point higher than in the December Greenbook. Long-term yields are anticipated to remain fairly steady this year and next, as the effects of rising short-term rates are offset over time by reductions in market participants' expectations for future inflation and the path of policy. As in previous forecasts, the stock market is assumed to generate risk-adjusted returns similar to those on fixed-income investments, although prices launch off a slightly lower base, reflecting the recent sell-off in shares. The foreign exchange value of the dollar is assumed to depreciate this year and next at about the same gradual pace as in the December Greenbook. Oil prices are now higher than the staff had expected and, in line with futures prices, are projected to come down a little more steeply. On net, financial conditions still seem quite supportive of growth, and aggregate demand is seen as expanding at a rate a bit above that of potential output, putting the unemployment rate on a shallow downward trajectory that by the end of 2006 nearly reaches 5 percent—the staff's estimate of the natural rate of unemployment. Core PCE inflation is expected to remain near $1\frac{1}{2}$ percent this year and next, with the waning influence of resource slack about offset by the diminished pass-through from oil prices and the dollar.

Longer-Run Strategy

(9) To analyze strategies and risks for monetary policy, several sets of simulations were conducted using a version of the FRB/US model with the following

properties: policymakers have perfect foresight about the entire economy; financial markets have perfect foresight regarding the future path of the federal funds rate, thereby ensuring that the policy path is not associated with systematic forecast errors by investors; and households and firms form their expectations using more limited information, as in the standard version of the model. One set of simulations was oriented toward evaluating the implications of alternative values of a long-run inflation objective for the core PCE price index, while other simulations were used to investigate different assumptions about productivity growth and the personal saving rate. Each of the latter scenarios was simulated under the assumption of a 1½ percent long-run inflation goal. For each simulation, an “optimal” path of the funds rate was computed by assuming that policymakers have an equal distaste for deviations of unemployment from its natural rate, deviations of inflation from a long-run goal, and changes in the federal funds rate.⁵

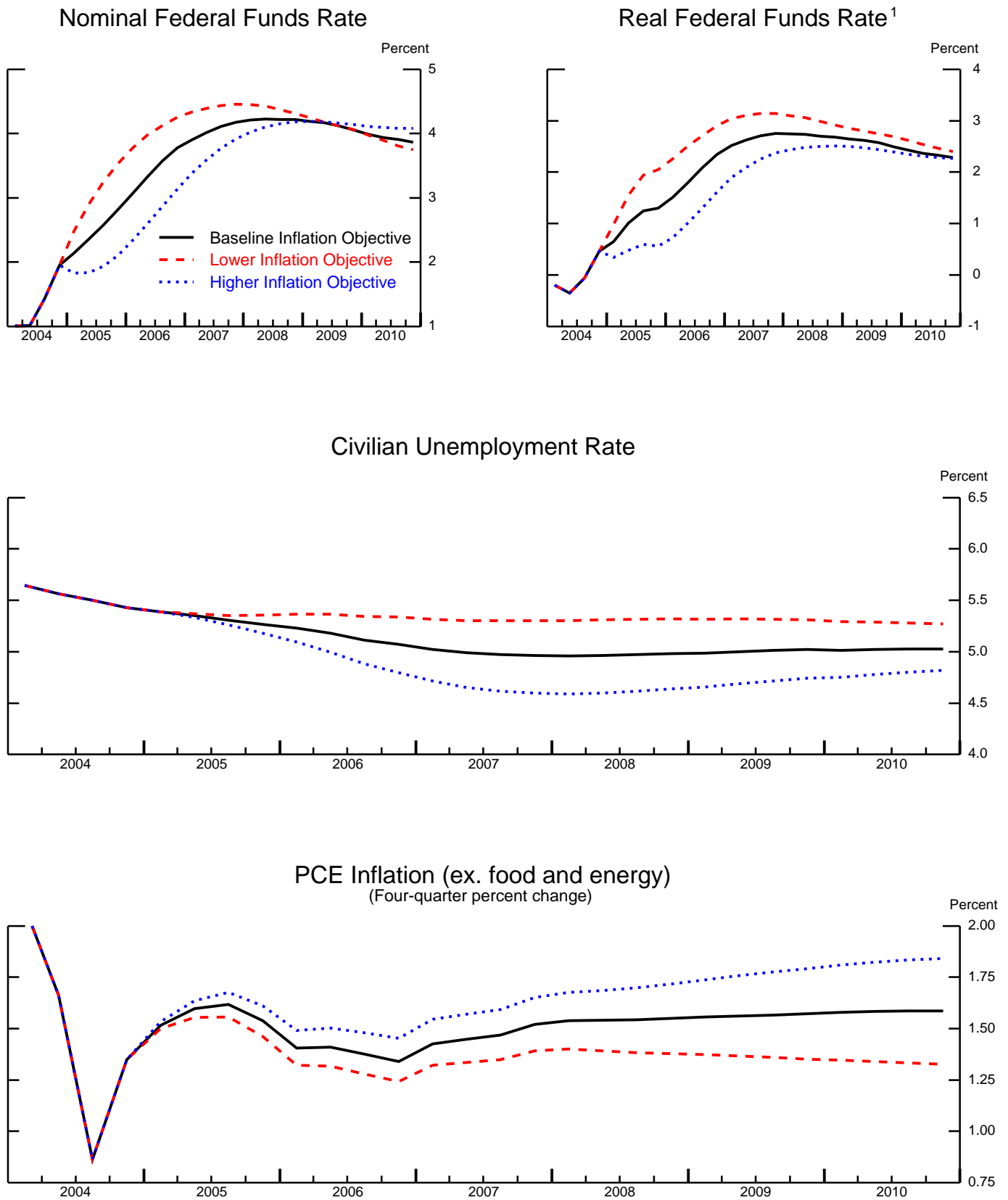
(10) The baseline for these simulations was prepared using the FRB/US model (with judgmental adjustments) to extend the staff forecast through the end of the decade. On the supply side, structural labor productivity growth is assumed to moderate toward historical norms, declining from 3 percent last year to 2¾ percent during 2005 and about 2½ percent by 2010. Adjusting for trend movements in the labor force and other factors, these productivity gains are sufficient to keep potential output growing at a fairly steady pace of about 3¼ percent per year during the rest of the decade, while the NAIRU is assumed to remain at 5 percent. As for aggregate demand, the personal saving rate is expected to rise gradually back toward its historical average, while the unified federal budget deficit stays at around 2½ percent of nominal GDP during the remainder of the decade. Although the foreign exchange

⁵ More precisely, the federal funds rate path is chosen to minimize the equally weighted sum of three components: the squared deviations of unemployment from its natural rate; the squared deviations of core PCE inflation from target; and squared changes in the funds rate. The last term helps ensure that the optimal funds rate path in the simulation exhibits the smooth adjustment observed in the historical record.

value of the dollar is assumed to depreciate at an average annual rate of about 3 percent after 2006, the current account deficit is projected to widen to almost 7½ percent of nominal GDP. Monetary policy is assumed to adjust to keep core PCE inflation close to 1½ percent throughout the decade while facilitating the return of unemployment to its natural rate. In particular, the nominal federal funds rate rises to 4 percent as the real federal funds rate settles in at about 2½ percent.

(11) The first set of simulations analyzes the implications of alternative specifications of the long-run objective for core PCE inflation. The solid line in each panel of Chart 5 denotes the scenario in which policymakers desire that the core PCE inflation rate eventually settle at 1½ percent. The optimal path of monetary policy in this case is not much above that assumed in the Greenbook: The funds rate, shown in the upper-left panel, rises steadily over the next three years, peaking at about 4 percent. With that financial backdrop, the unemployment rate and core PCE inflation rate—shown in the lower two panels—also follow trajectories similar to those in the Greenbook extension. The dashed line in each panel corresponds to a long-run inflation objective of 1 percent. The optimal policy aims to achieve this outcome by tightening only a bit more rapidly than under the 1½ percent inflation objective and then holding the real funds rate at a somewhat elevated level over an extended period (upper-right panel). Given the tighter path of policy, the unemployment rate stays around 5¼ percent through the remainder of the decade, while inflation declines gradually toward the long-run objective. In contrast, a higher inflation objective of 2 percent (dotted line) allows policymakers to pause on the road to further tightening until the end of this year, and the real funds rate remains a bit below its value in the benchmark scenario through 2010. This policy fosters a gradual pickup in inflation, while unemployment declines somewhat more quickly than in the benchmark case and then remains below the NAIRU throughout the remainder of the decade.

Chart 5 Optimal Policy with Alternative Inflation Objectives



1. The real federal funds rate is calculated as the quarterly average nominal funds rate minus the four-quarter lagged core PCE inflation rate as a proxy for inflation expectations.

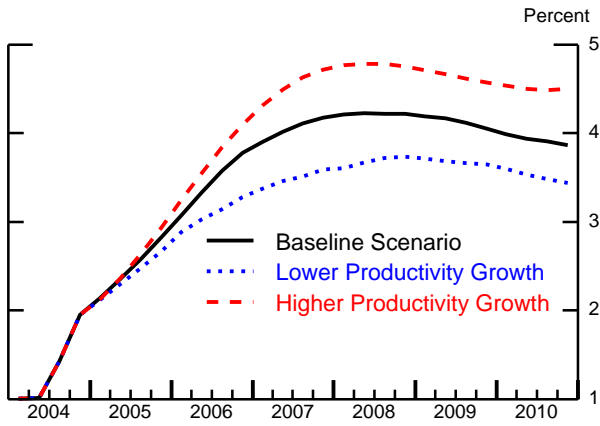
(12) The second set of simulations highlights the implications of different assumptions about aggregate supply, under the maintained assumption that the inflation objective is 1½ percent.⁶ The solid lines in Chart 6 are identical to those in the previous chart, depicting the benchmark scenario (as in the extended Greenbook baseline) in which structural productivity growth gradually moderates toward historical norms. The dashed lines in this chart depict an alternative scenario in which structural productivity continues to grow at a pace close to that experienced in recent years (similar to the scenario in the Greenbook “Faster Productivity Growth”). In this case, the real funds rate settles to a value that, because of higher levels of wealth and permanent income, is about 60 basis points higher than in the benchmark scenario. Given the benchmark inflation objective of 1½ percent and in light of the substantial response of aggregate demand to the faster productivity growth, the assumed policy preference function is maximized with a steeper path for the nominal funds rate, which peaks at nearly 5 percent in mid-2007 and then declines a bit in subsequent years. Core PCE inflation remains stable at a rate slightly below 1½ percent, while unemployment falls to just over 4½ percent by 2007 and stays below the NAIRU for several years thereafter. In contrast, under the assumption that productivity growth runs along a lower track than the benchmark (dotted lines), the real funds rate stabilizes at a level that is about 50 basis points lower than in the benchmark scenario. In this case, the optimal policy prescribes a somewhat flatter path for the nominal funds rate, which reaches about 3½ percent by mid-2007.

⁶ An important aspect of an examination of a change in the rate of growth of productivity is the specification of when the public and policymakers learn of the shift. A change in productivity growth leaves its imprint on aggregate supply (by tilting the path of potential output over time), on aggregate demand (by altering wealth and permanent income when households come to recognize the shift), and on monetary policy (by affecting the central bank’s view of resource slack and the equilibrium real rate). If monetary policymakers, for instance, catch on to a step-up in structural productivity growth relatively slowly, they will act on a mistaken notion that the output gap is narrower than actual for a time. In these perfect-foresight simulations, policymakers do not make such mistakes.

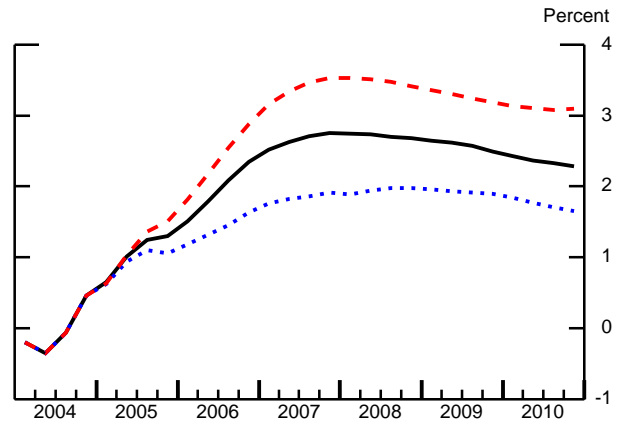
Chart 6

Optimal Policy under Alternative Productivity Growth Scenarios

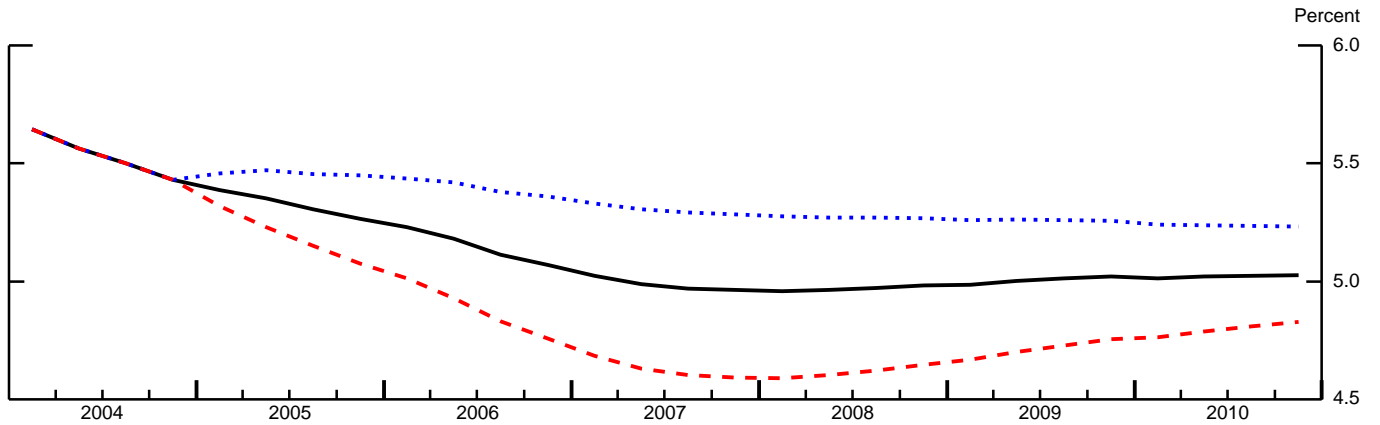
Nominal Federal Funds Rate



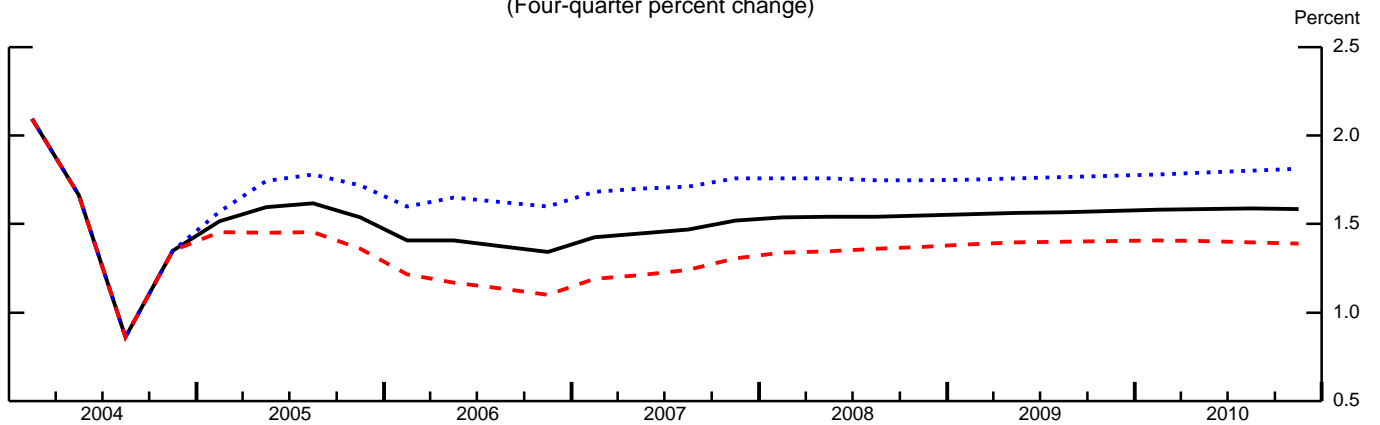
Real Federal Funds Rate¹



Civilian Unemployment Rate



PCE Inflation (ex. food and energy)
(Four-quarter percent change)



1. The real federal funds rate is calculated as the quarterly average nominal funds rate minus the four-quarter lagged core PCE inflation rate as a proxy for inflation expectations.

Nevertheless, the unemployment rate remains about $\frac{1}{4}$ percentage point above the NAIRU, and core PCE inflation around $\frac{1}{4}$ percentage point above the inflation objective, through the rest of the decade.

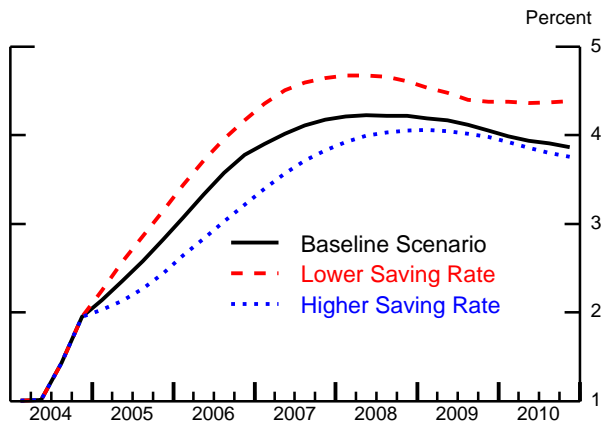
(13) The third set of simulations illustrates the policy implications of alternative assumptions about aggregate demand, again assuming a $1\frac{1}{2}$ percent inflation objective. The solid lines in Chart 7 are identical to those in the previous two charts, depicting the benchmark scenario in which the personal saving rate gradually rises toward its long-run historical average. In contrast, the dashed lines depict an alternative scenario in which the saving rate remains at a relatively low level (similar to the simulation referred to in the Greenbook as the “Stronger Consumption” scenario). In this case, the long-run equilibrium value of the real funds rate is about 50 basis points higher than in the benchmark scenario. With a $1\frac{1}{2}$ percent inflation objective, the optimal policy essentially matches this increase in the equilibrium rate by prescribing a steeper funds rate path that reaches near $4\frac{1}{2}$ percent by late 2007. This policy response largely offsets the shift in aggregate demand, so that the trajectories of unemployment and inflation are essentially the same as in the benchmark scenario. The dotted lines in this chart depict the alternative scenario in which the personal saving rate rises even faster than in the benchmark scenario. In this case, the optimal policy prescribes a somewhat lower path for the real funds rate and thereby prevents the negative aggregate demand shock from having a noticeable impact on unemployment or inflation.

Short-Run Policy Alternatives

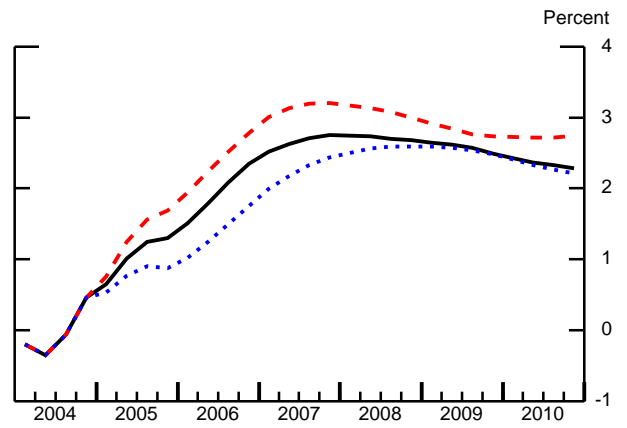
(14) The universal expectation of a quarter-point policy firming at the upcoming meeting makes it more challenging than usual to write down plausible policy alternatives that could help to inform the Committee’s deliberations. Alternative B, as presented in Table 1, squarely represents the conventional wisdom, in that it envisions

Chart 7 Optimal Policy under Alternative Consumption Scenarios

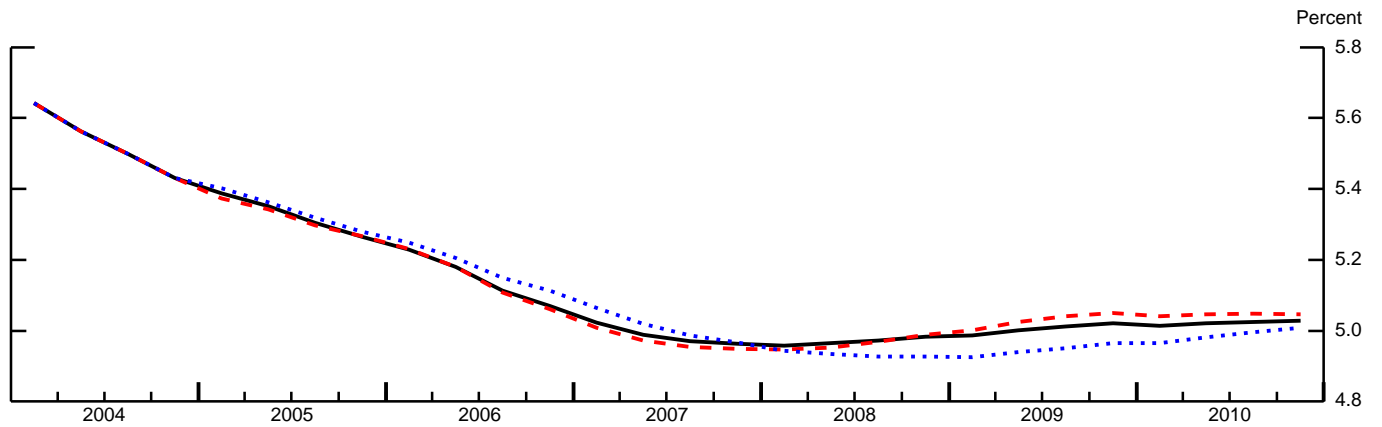
Nominal Federal Funds Rate



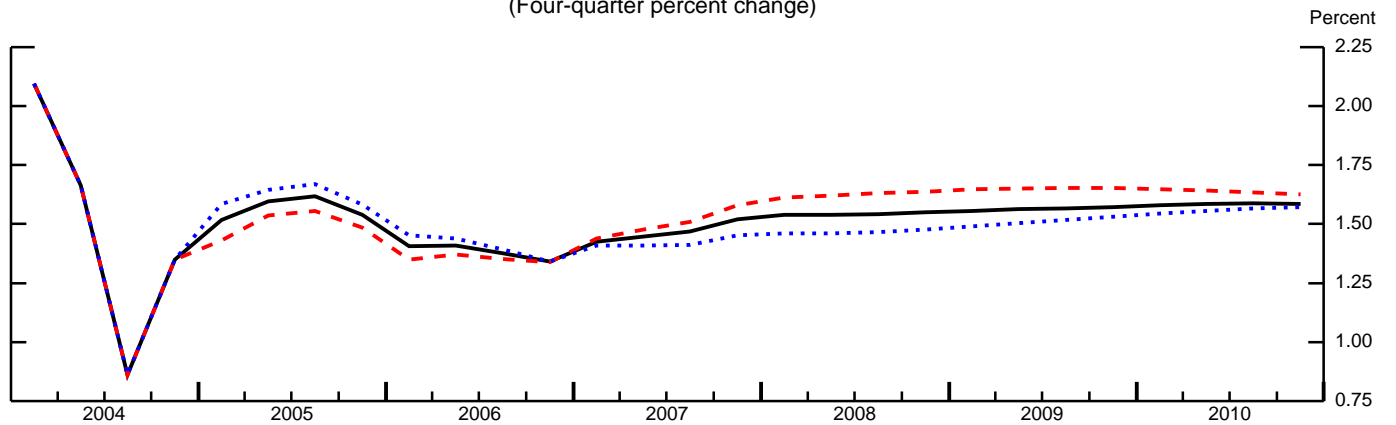
Real Federal Funds Rate¹



Civilian Unemployment Rate



PCE Inflation (ex. food and energy) (Four-quarter percent change)



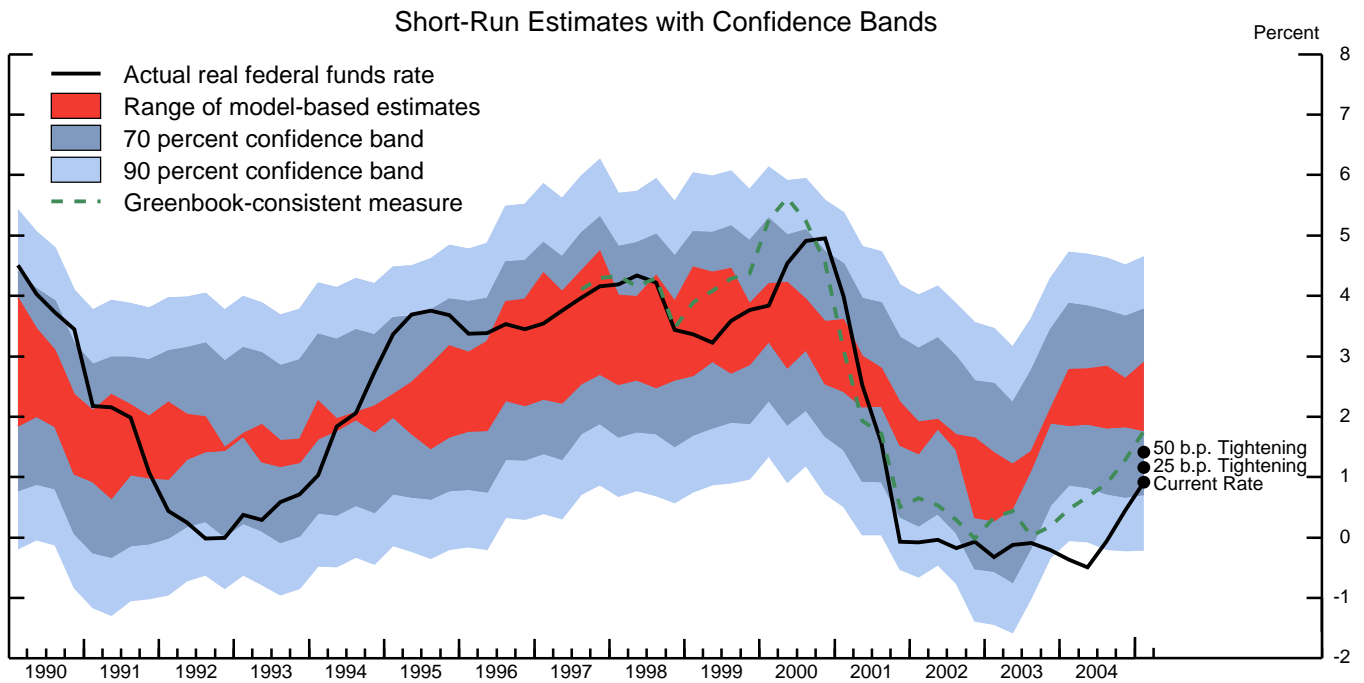
1. The real federal funds rate is calculated as the quarterly average nominal funds rate minus the four-quarter lagged core PCE inflation rate as a proxy for inflation expectations.

Table 1: Alternative Language for the January FOMC Announcement				
	December FOMC	Alternative A	Alternative B	Alternative C
Policy Decision	1. The Federal Open Market Committee decided today to raise its target for the federal funds rate by 25 basis points to 2¼ percent.	The Federal Open Market Committee decided today to keep its target for the federal funds rate at 2¼ percent. The Committee's policy actions since mid-2004 have materially reduced the degree of monetary policy accommodation.	The Federal Open Market Committee decided today to raise its target for the federal funds rate by 25 basis points to 2½ percent.	The Federal Open Market Committee decided today to raise its target for the federal funds rate by 50 basis points to 2¾ percent.
Rationale	2. The Committee believes that, even after this action, the stance of monetary policy remains accommodative and, coupled with robust underlying growth in productivity, is providing ongoing support to economic activity.	The Committee believes that the stance of monetary policy remains somewhat accommodative and, coupled with robust underlying growth in productivity, is providing ongoing support to economic activity.	[Unchanged from December statement]	The Committee believes that the stance of monetary policy remains accommodative and, coupled with robust the underlying growth in productivity, is providing ongoing support to economic activity.
	3. Output appears to be growing at a moderate pace despite the earlier rise in energy prices, and labor market conditions continue to improve gradually.	Output appears to be growing at a moderate pace despite the earlier rise in energy prices, and labor market conditions seem to be improving gradually.	Output appears to be growing at a moderate pace despite the earlier rise in energy prices, and labor market conditions continue to improve gradually.	Output appears to be growing at a moderate pace despite the earlier rise in energy prices, and labor market conditions continue to improve gradually.
	4. Inflation and longer-term inflation expectations remain well contained.	[Unchanged from December statement]	[Unchanged from December statement]	Inflation and longer-term inflation expectations remain well contained, but rising business costs have the potential to put upward pressure on prices.
Assessment of Risk	5. The Committee perceives the upside and downside risks to the attainment of both sustainable growth and price stability for the next few quarters to be roughly equal.	[Unchanged from December statement]	[Unchanged from December statement]	[Unchanged from December statement]
	6. With underlying inflation expected to be relatively low, the Committee believes that policy accommodation can be removed at a pace that is likely to be measured. Nonetheless, the Committee will respond to changes in economic prospects as needed to fulfill its obligation to maintain price stability.	With underlying inflation expected to be relatively low, the Committee believes that policy accommodation can be removed at a pace that is likely to be measured. Nonetheless, the Committee will respond to changes in economic prospects as needed to fulfill its obligation to promote price stability and sustainable growth.	[Unchanged from December statement]	[None]

raising the federal funds rate target to 2½ percent at this meeting and the release of a statement little changed from that in December. Alternative A presents a stance of policy that is easier in multiple dimensions, in that the federal funds rate is held at its current level, the assessment of the current degree of accommodation is softened, and language that could be associated with a pause is offered. In stark contrast, Alternative C envisions a half-point rate hike accompanied by a darker assessment of inflation risks and the removal of the “measured pace” language. No doubt, the extremes are extreme, but they contain elements of statement language that the Committee might find more appealing than the wording of Alternative B. In addition, these alternatives may be helpful in informing potential changes in the policy announcement over the next few meetings. All the alternatives suggest stating that “Output appears to be growing at a moderate pace despite the rise in energy prices,” which differs from the December announcement only by dropping the word “earlier” in recognition of recent increases in oil prices.

(15) If the Committee believes that continued policy firming will likely prove sufficient to check inflationary pressures while allowing economic slack to be worked down in an acceptable manner, it might be inclined to raise the target funds rate another 25 basis points at this meeting, as in **Alternative B**. Such an increase would further unwind the unusual degree of policy accommodation prevailing over the past several years, seen in Chart 8 as the movement of the real funds rate closer to estimates of its equilibrium, which themselves moved back to a more typical range in the last year or so. It would also be consistent with the long-run scenario of maintaining a 1½ percent objective for core PCE inflation, as discussed above, and with several policy rules based on that objective (Chart 9). While the Committee may be concerned that financial markets will remain accommodative even after this move, perhaps encouraging excessive risk-taking, it might also believe that a larger action at

Chart 8 Equilibrium Real Federal Funds Rate



Notes: The real federal funds rate is constructed as the difference between the quarterly average of the actual nominal funds rate and the log difference of the core PCE price index over the previous four quarters. For the current quarter, the nominal funds rate used is the target federal funds rate as of the close of the Bluebook.

Short-Run and Medium-Run Measures for 2005:Q1

	Current Estimate	<i>Previous Bluebook</i>
Short-Run Measures		
Greenbook-consistent measure	1.8	1.7
Single-equation model	1.8	1.8
Small structural model	2.9	2.7
Large model (FRB/US)	2.1	2.3
Confidence intervals for three model-based estimates		
70 percent confidence interval	0.7 - 3.8	
90 percent confidence interval	-0.2 - 4.6	
Medium-Run Measures		
TIPS-consistent measure	1.6	1.7
Single-equation model	2.2	2.2
Small structural model	2.8	2.8
Confidence intervals for two model-based estimates		
70 percent confidence interval	1.5 - 3.4	
90 percent confidence interval	0.7 - 3.9	

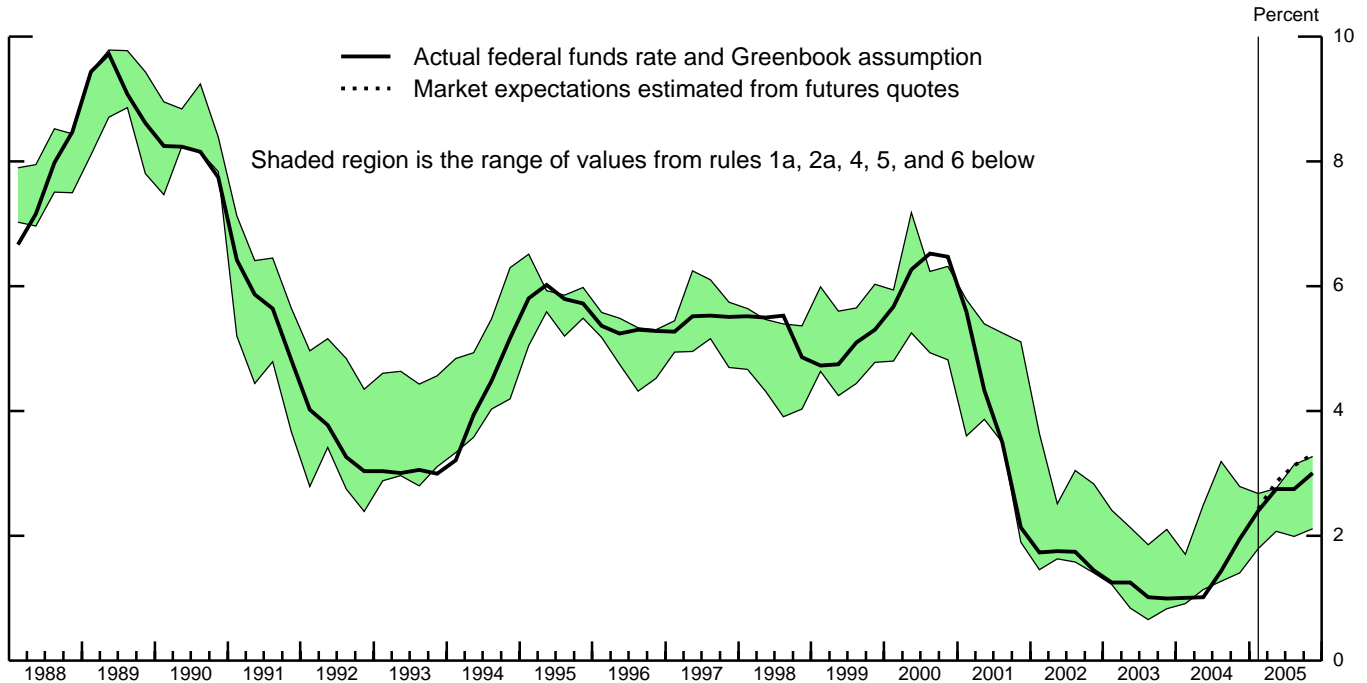
Notes: The figures in the "Previous Bluebook" column indicate the estimates for the current quarter as of the previous Bluebook. Confidence intervals and bands reflect uncertainties about model specification, coefficients, and the level of potential output.

Equilibrium Real Rate Chart: Explanatory Notes

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 a model’s projection of the economy, and the medium-run concept is the value of the real 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 keep them equal thereafter. With the exception of the TIPS-consistent measure, the real federal funds rates employ the log difference of the core PCE price index over the previous four quarters as a proxy for expected inflation, with the staff projection used for the current quarter. TIPS indexation is based on the total CPI.

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. In light of this model’s simple structure, the short-run measure of the equilibrium real rate depends only on the recent position of output relative to potential, and the medium-run measure is virtually constant.
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. Unlike the estimates from the single-equation model, values of the equilibrium real rate also depend directly on conditions associated with output growth, fiscal policy, and capital markets.
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. These projections make use of several simple forecasting rules which are appropriate for the three-year horizon relevant for the short-run concept but are less sensible over longer horizons. Thus, we report only the short-run measure for the FRB/US model.
Greenbook-consistent	Measures of the equilibrium real rate cannot be directly obtained from the Greenbook forecast, because the Greenbook is not based on a formal model. Rather, we use the FRB/US model 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. The medium-run concept of the equilibrium real rate is not computed because it requires a relatively long extension of the Greenbook forecast.
TIPS-consistent	Yields on TIPS (Treasury Inflation-Protected Securities) incorporate investors’ expectations of the future path of real interest rates. The seven-year instantaneous real forward rate derived from TIPS yields reflects the short-term real interest rate expected to prevail in seven years as well as any applicable term premium. The term premium is assumed to be 70 basis points.

Chart 9
Actual and Assumed Federal Funds Rate and
Range of Values from Policy Rules and Futures Markets



Note: In previous Bluebooks, the shaded region reflected Taylor rules with a 2 percent inflation objective, rather than 1.5 percent as here.

Values of the Federal Funds Rate from Policy Rules and Futures Markets

	2004		2005		
	Q4	Q1	Q2	Q3	Q4
Rules with Imposed Coefficients					
1. Baseline Taylor Rule: a) $\pi^*=1.5$	2.79	2.68	2.76	3.14	3.27
b) $\pi^*=2$	2.54	2.43	2.51	2.89	3.02
2. Aggressive Taylor Rule: a) $\pi^*=1.5$	2.08	2.10	2.27	2.74	2.94
b) $\pi^*=2$	1.83	1.85	2.02	2.49	2.69
3. First-difference Rule: a) $\pi^*=1.5$	1.60	2.31	2.66	2.94	3.14
b) $\pi^*=2$	1.35	2.06	2.16	2.19	2.14
Rules with Estimated Coefficients					
4. Outcome-based Rule	1.71	2.07	2.18	2.42	2.64
5. Greenbook Forecast-based Rule	1.58	2.22	2.36	2.44	2.48
6. FOMC Forecast-based Rule	1.40	1.79	2.07	1.98	2.12
7. TIPS-based Rule	1.87	2.38			
Memo					
Expected federal funds rate derived from futures		2.44	2.86	3.13	3.30
Actual federal funds rate and Greenbook assumption	1.95	2.40	2.75	2.75	3.00

Note: Rule prescriptions for current and future periods are calculated using Greenbook projections for inflation and the output gap (or unemployment gap). For rules that contain the lagged funds rate, the rule's previous prescription for the funds rate is used to compute prescriptions for subsequent periods. It is assumed that there is no feedback from the rule prescriptions to the Greenbook projections over the time period shown here. The FOMC forecast-based rule is estimated using the semiannual central tendency of FOMC forecasts made up until July 2004. The TIPS-based rule is computed using average TIPS and nominal Treasury yields to date.

Policy Rules Chart: Explanatory Notes

In all of the rules below, i_t denotes the federal funds rate, π_t the staff estimate at date t of trailing four-quarter core PCE inflation, $(y_t - y_t^*)$ the staff estimate (at date t) of the output gap, π^* policymakers' long-run objective for inflation, i_{t-1} the lagged federal funds rate, ϵ_{t-1} the residual from the rule's prescription the previous quarter, $(y_{t+3|t} - y_{t+3|t}^*)$ the staff's three-quarter-ahead forecast of the output gap, $(\Delta y_{t+3|t} - \Delta y_{t+3|t}^*)$ the staff's forecast of output growth less potential output growth three quarters ahead, $\pi_{t+3|t}$ a three-quarter-ahead forecast of inflation, and $(u_{t+3|t} - u_{t+3|t}^*)$ a three-quarter-ahead forecast of the unemployment gap. Data are quarterly averages taken from the Greenbook and staff memoranda closest to the middle of each quarter, unless otherwise noted.

Rule	Specification	Root-mean-square error	
		1988:1-2004:4	2001:1-2004:4
Rules with Imposed Coefficients			
1. Baseline Taylor Rule	$i_t = 2 + \pi_t + 0.5(y_t - y_t^*) + 0.5(\pi_t - \pi^*)$	.98 ^a	1.11 ^a
2. Aggressive Taylor Rule	$i_t = 2 + \pi_t + (y_t - y_t^*) + 0.5(\pi_t - \pi^*)$	.68 ^a	.65 ^a
3. First-difference Rule	$i_t = i_{t-1} + 0.5(\Delta y_{t+3|t} - \Delta y_{t+3|t}^*) + 0.5(\pi_{t+3|t} - \pi^*)$	.98 ^a	.44 ^a
Rules with Estimated Coefficients			
4. Estimated Outcome-based Rule Rule includes both lagged interest rate and serial correlation in residual.	$i_t = .52i_{t-1} + 0.48 [1.14 + 0.96(y_t - y_t^*) + 1.49\pi_t] + 0.49\epsilon_{t-1}$	.23	.24
5. Estimated Greenbook Forecast-based Rule Rule includes both lagged interest rate and serial correlation in residual.	$i_t = .71i_{t-1} + 0.29 [0.59 + 1.06(y_{t+3|t} - y_{t+3|t}^*) + 1.62\pi_{t+3|t}] + 0.33\epsilon_{t-1}$	.25	.27
6. Estimated FOMC Forecast-based Rule Unemployment and inflation forecasts are from semiannual "central tendency" of FOMC forecasts, interpolated if necessary to yield 3-qr-ahead values; u_t^* forecast is from staff memoranda. Inflation forecasts are adjusted to core PCE deflator basis. Rule is estimated at semiannual frequency, and projected forward using Greenbook forecasts.	$i_t = 0.49i_{t-2} + 0.51 [0.27 - 2.10(u_{t+3|t} - u_{t+3|t}^*) + 1.60\pi_{t+3|t}]$	.45	.61
7. Estimated TIPS-based Rule $\pi_{comp5|t}$ denotes the time- t difference between 5-yr nominal Treasury yields and TIPS. Sample begins in 1999 due to TIPS volatility in 1997-8.	$i_t = 0.97i_{t-1} + [-1.24 + 0.68\pi_{comp5|t}]$	.42 ^b	.44

^a RMSE for rules with imposed coefficients is calculated setting $\pi^*=1.5$.

^b RMSE for TIPS-based rule is calculated for 1999:1-2004:4.

this time would sow confusion about its assessment of the economy or its objectives, and perhaps roil financial markets.

(16) The draft statement offered in Alternative B is quite similar to that released following the December meeting in its evaluation of recent economic conditions, assessment of balanced risks to the goals of stable prices and sustainable growth, and retention of the familiar “measured pace” language. Futures market quotes suggest that investors are confident of quarter-point policy steps at this meeting and the next, and primary dealers responding to the Desk’s survey were unanimous in expecting no change in the Committee’s assessment of the balance of risks at this meeting. The minutes of the December meeting, however, may have led analysts to expect a sign of heightened worries about the inflation outlook, which is missing from the draft statement provided in Table 1, and its release probably would be accompanied by an edging lower of yields, a bit of a rally in equity markets, and a small decline in the exchange value of the dollar.

(17) If the Committee believes that a more rapid return to a neutral policy stance is needed to prevent output overshooting its potential and putting upward pressures on inflation down the road, it may choose one or all of the components included in the statement under **Alternative C**. A 50 basis point increase in the target funds rate at this meeting might be selected if members believe that a more gradual tightening, along the lines of the Greenbook assumption or the expectations of market participants, could promote excessive risk-taking, unsustainable spending, and an increase in inflation. Private forecasters continue to anticipate a higher rate of inflation than the staff, and the Committee may share such a forecast under the policy paths implied by market prices or assumed in the Greenbook. Members may place high odds on aggregate demand being stronger than in the staff forecast because they believe that the saving rate will stay persistently low or that investment spending will not slip with the end of the partial expensing tax provisions. Similarly, a less

optimistic outlook for aggregate supply and the attendant consequences for inflation might incline the Committee to pick up the pace of policy firming.⁷

(18) Even if the Committee prefers a 25 basis point tightening at this meeting, it may wish to couple such a move with some of the changes in the announcement listed under Alternative C in Table 1. For instance, to suggest greater uncertainty about the pace of structural productivity growth, the announcement could simply speak of “the underlying growth in productivity” as helping to support economic activity, without characterizing productivity growth as “robust.” To signal a relatively greater concern about the inflation outlook, the Committee could note in the rationale paragraph that labor market conditions “continue to improve,” without indicating that the improvement was gradual, and also mention that “rising business costs have the potential to put upward pressure on prices.” The Committee could also drop the “measured pace” language, although, in the absence of other changes in the balance-of-risks framework, that would place a greater burden on the rationale paragraph to guide market participants’ expectations for policy, at least until release of the minutes three weeks later. If the Committee did choose to firm 50 basis points at this meeting, the draft language in Table 1 would serve to clarify that the larger move was not intended to presage a pause.

(19) A 50 basis point policy firming and an announcement like that indicated under Alternative C would lead to a sharp rise in short-term interest rates and a decline in bond and stock prices. Market participants would likely mark up the amount of cumulative tightening expected over the next year or so. At the same time, uncertainty about future policy moves might increase substantially, and market prices probably would respond more forcefully to data releases and especially to news on inflation. The direction of the market moves would be the same, but the amounts

⁷ Referring back to the discussion of a productivity shock in paragraph 12, the implicit concern presumably would be that the Committee is late in appreciating that structural productivity growth had ratcheted down some time ago so that the true output gap is smaller than suspected.

attenuated, if the Committee married a quarter-point rate firming with some of the drafting language of Alternative C.

(20) If the Committee wanted to pause in the process of removing policy accommodation at this meeting, it might adopt **Alternative A**. The Committee may believe that more of the increases in productivity in recent years have been structural than assumed by the staff, leaving the economy with more resource slack currently and raising the odds of a lower inflation rate prospectively under the Greenbook policy path. In addition, members may foresee a continuation of labor market slack, rather than the gradual elimination forecasted by the staff, because of continued business caution, a faster return to the trend rate of labor force participation, or a lower NAIRU. The Committee may also harbor some suspicions about the resilience of aggregate demand, perhaps on the thought that the saving rate could rise more rapidly or the drag from net exports intensify more substantially than in the staff forecast.

(21) Even if concerns about the vigor of the expansion or confidence in the prospects for aggregate supply were not, on balance, significant enough to dissuade the Committee from tightening at this meeting, it might wish to signal in its announcement that such a possibility may come soon. This could be accomplished, for instance, by adding after the first sentence of the announcement, “The Committee’s policy actions since mid-2004 have materially reduced the degree of monetary policy accommodation.” The Committee could emphasize the extent to which policy has firmed since June by stating that “the stance of policy remains somewhat accommodative” rather than simply “accommodative.” It might also include a note of uncertainty about improvements in the labor market by commenting that “labor market conditions seem to be improving gradually.” Finally, it could allude to both its policy objectives by mentioning “sustainable growth” along with price stability in the last sentence of the announcement.

(22) Adoption of all aspects of Alternative A—that is, keeping the funds rate unchanged and softening the cast of the statement language—would come as a considerable surprise to market participants, especially after the release of the minutes of the December meeting. If the Committee chose a more limited number of the changes in that column of Table 1, investors would probably mark down their expectations for the path of policy, causing a decline in short- and longer-term interest rates, a stock market rally, and a drop in the foreign exchange value of the dollar. The decline in longer-term interest rates would be larger and the rise in stock prices would be smaller to the degree that investors responded to the surprising FOMC statement by marking down their outlook for economic activity.

Money and Debt Forecasts

(23) Under the staff forecast, M2 is expected to expand about 4 percent this year, 1½ percentage points slower than nominal GDP growth, owing to the lagged response of money demand to increases in short-term interest rates and associated opportunity costs. Under the financial assumptions in the Greenbook, potential substitutability of M2 assets with capital market instruments could have offsetting effects: Households may shift out of deposits if they gain confidence in higher returns on stocks, but the flattening of the yield curve could increase the attractiveness of the short-term instruments in M2 relative to bonds. With fewer policy tightenings in 2006, M2 is expected to expand 4½ percent, only ¾ percentage point slower than nominal spending. The growth of domestic nonfinancial sector debt is expected to fall from the 7¾ percent pace of 2004 to around 7¼ percent this year and 6½ percent in 2006, reflecting a moderation of government and household borrowing. Rising interest rates and less rapid home price increases finally temper the accumulation of mortgage debt by households. Business debt growth is projected to

Alternative Growth Rates for M2
(percent, annual rate)

		No change	Raise 25 bp*	Raise 50 bp**	Greenbook***
Monthly Growth Rates					
	Nov-04	6.9	6.9	6.9	6.9
	Dec-04	4.3	4.3	4.3	4.3
	Jan-05	5.7	5.7	5.7	5.7
	Feb-05	5.3	5.0	4.7	5.0
	Mar-05	4.9	4.2	3.5	4.2
	Apr-05	4.2	3.4	2.6	3.0
	May-05	5.6	4.9	4.2	4.1
	Jun-05	5.9	5.4	4.8	4.6
Quarterly Growth Rates					
	2004 Q1	3.4	3.4	3.4	3.4
	2004 Q2	7.8	7.8	7.8	7.8
	2004 Q3	3.6	3.6	3.6	3.6
	2004 Q4	5.5	5.5	5.5	5.5
	2005 Q1	5.4	5.2	5.1	5.2
	2005 Q2	5.0	4.3	3.6	3.9
Annual Growth Rates					
	2003	5.3	5.3	5.3	5.3
	2004	5.2	5.2	5.2	5.2
	2005				4.0
	2006				4.5
From	To				
Dec-04	Mar-05	5.3	5.0	4.6	5.0
Dec-04	Jun-05	5.3	4.8	4.3	4.5
Jan-05	Jun-05	5.2	4.6	4.0	4.2

* Increase of 25 basis points in the target federal funds rate at this meeting and no change thereafter.

** Increase of 50 basis points in the target federal funds rate at this meeting and no change thereafter.

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

pick up a little, however, from the sluggish pace of recent years with capital spending eventually notably exceeding the generation of internal funds.

Directive and Balance-of-Risks Statement

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

(1) 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 _____ ~~2~~¹/₄ percent.

(2) Risk Assessments

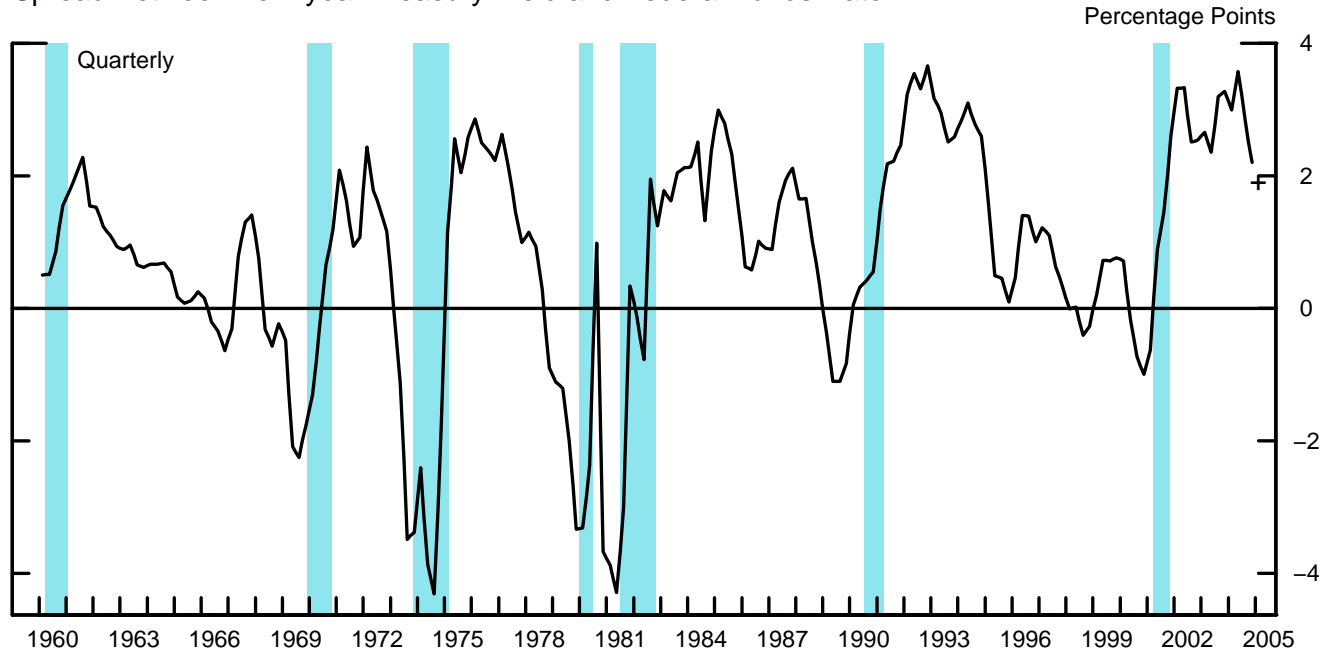
- A. The Committee perceives the upside and downside risks to the attainment of both sustainable growth and price stability for the next few quarters to be roughly equal. With underlying inflation expected to be relatively low, the Committee believes that policy accommodation can be removed at a pace that is likely to be measured. Nonetheless, the Committee will respond to changes in economic prospects as needed to fulfill its obligation to promote price stability and sustainable growth.
- B. The Committee perceives the upside and downside risks to the attainment of both sustainable growth and price stability for the next few quarters to be roughly equal. With underlying inflation expected to be relatively low, the Committee believes that policy accommodation can be removed at a pace that is likely to be measured. Nonetheless, the

Committee will respond to changes in economic prospects as needed to fulfill its obligation to maintain price stability.

- C. The Committee perceives the upside and downside risks to the attainment of both sustainable growth and price stability for the next few quarters to be roughly equal.

Treasury Yield Curve

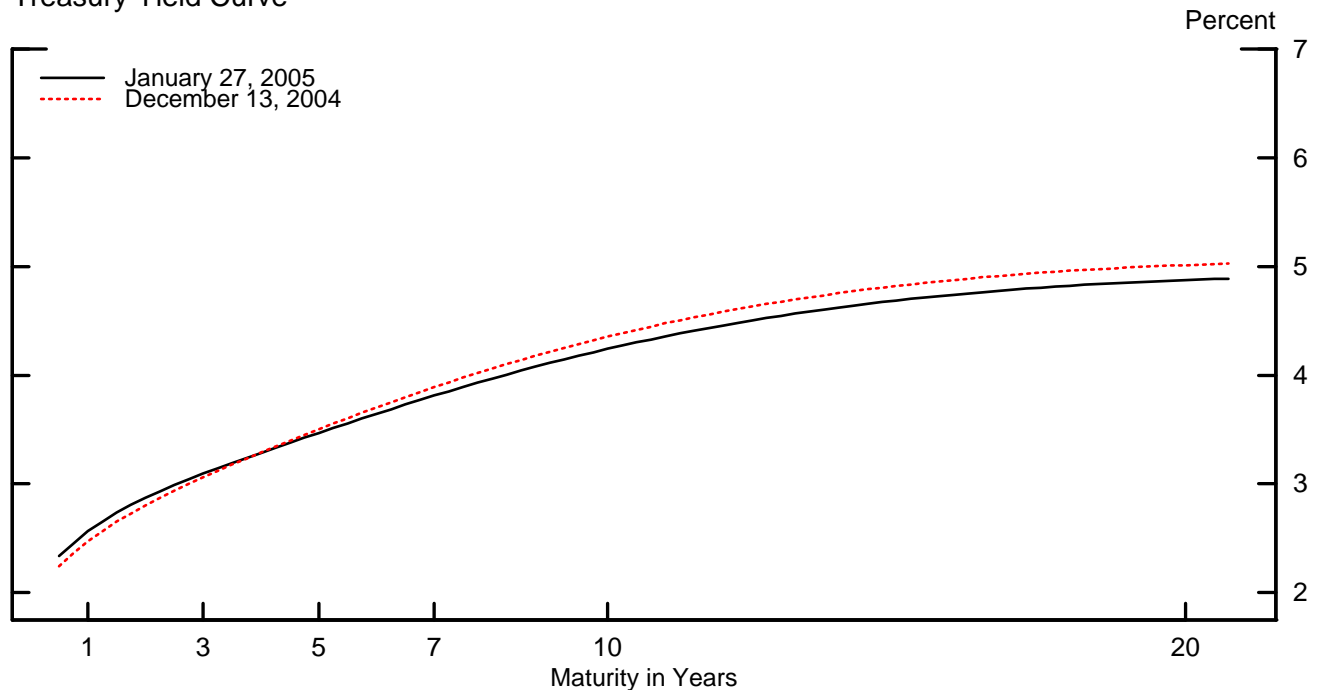
Spread Between Ten-year Treasury Yield and Federal Funds Rate



+ Denotes most recent weekly value.

Note. Blue shaded regions denote NBER-dated recessions.

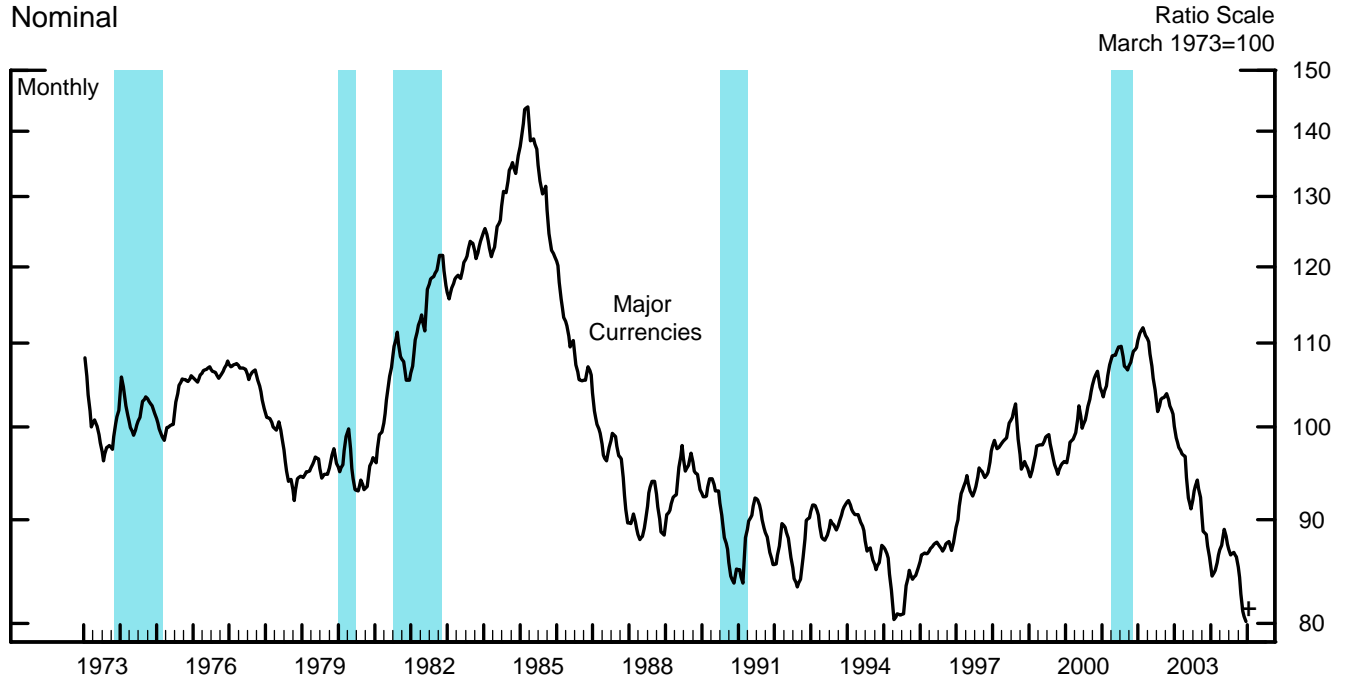
Treasury Yield Curve*



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

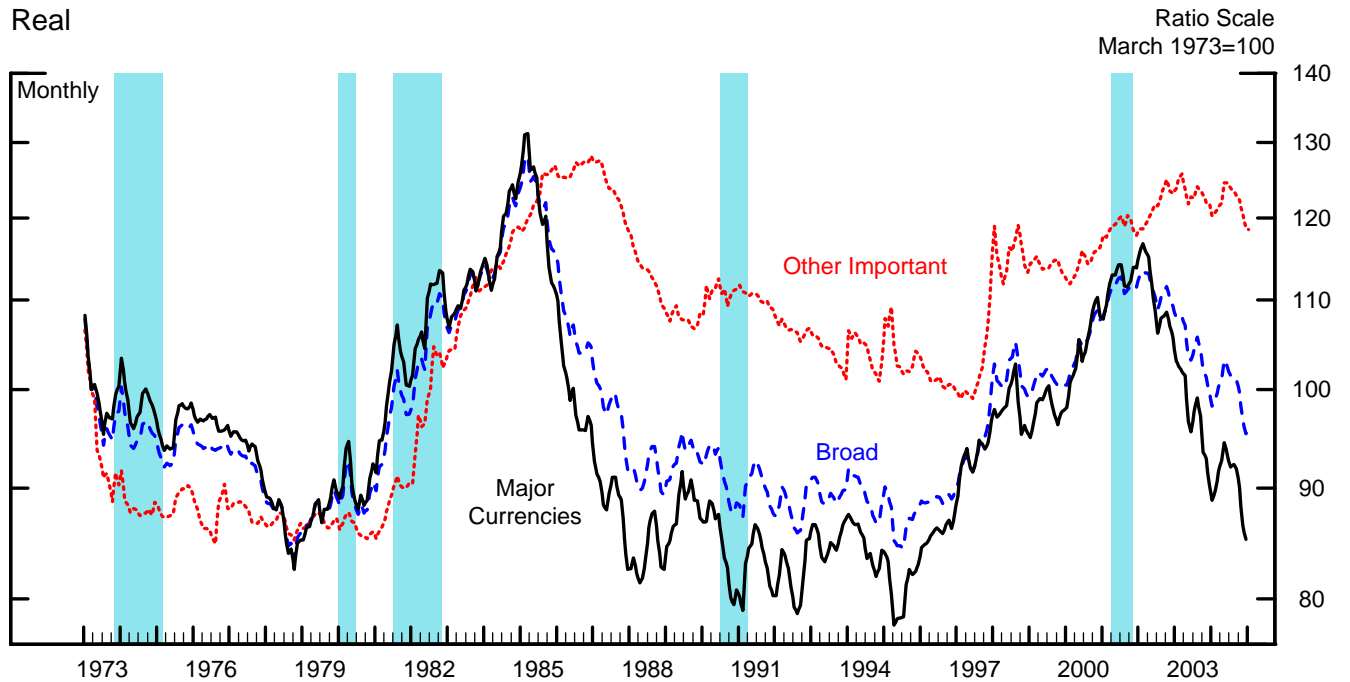
Dollar Exchange Rate Indexes

Nominal



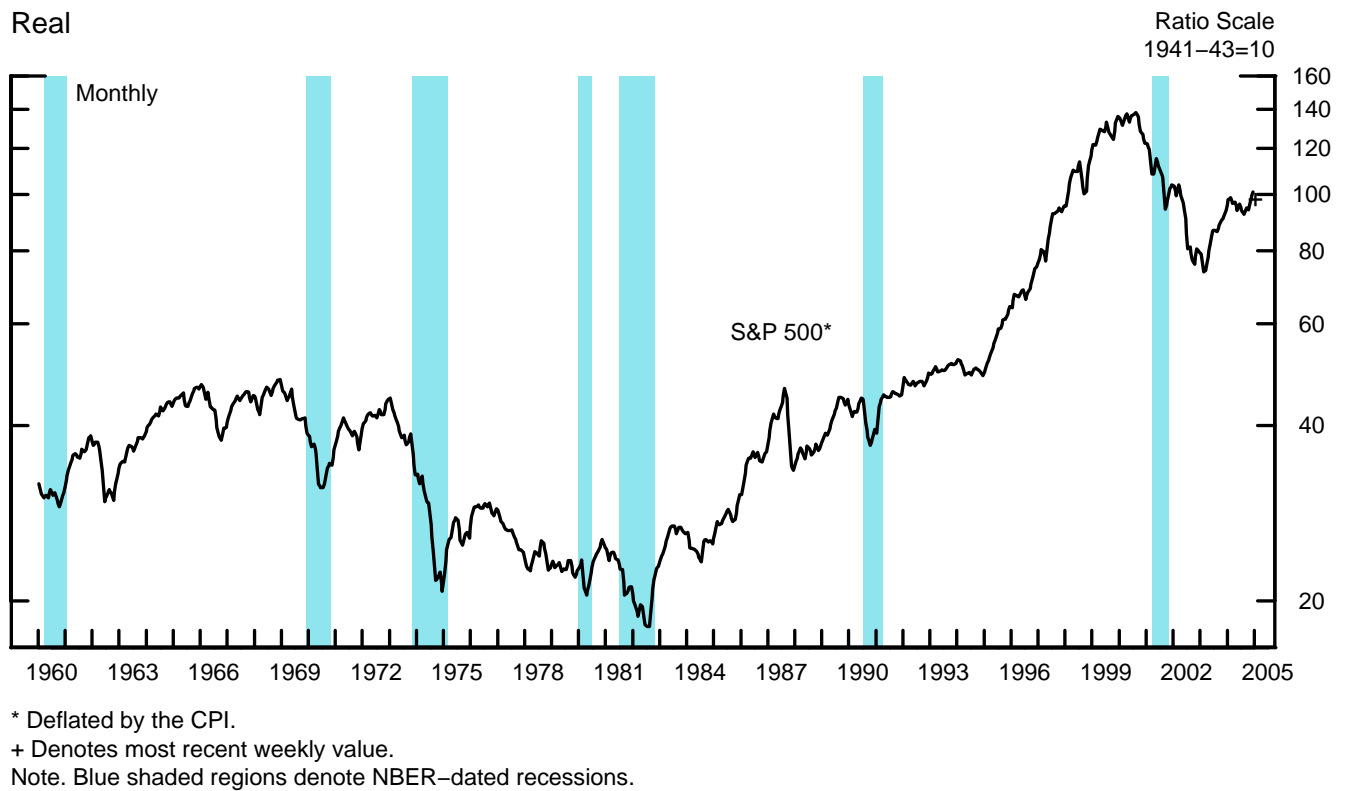
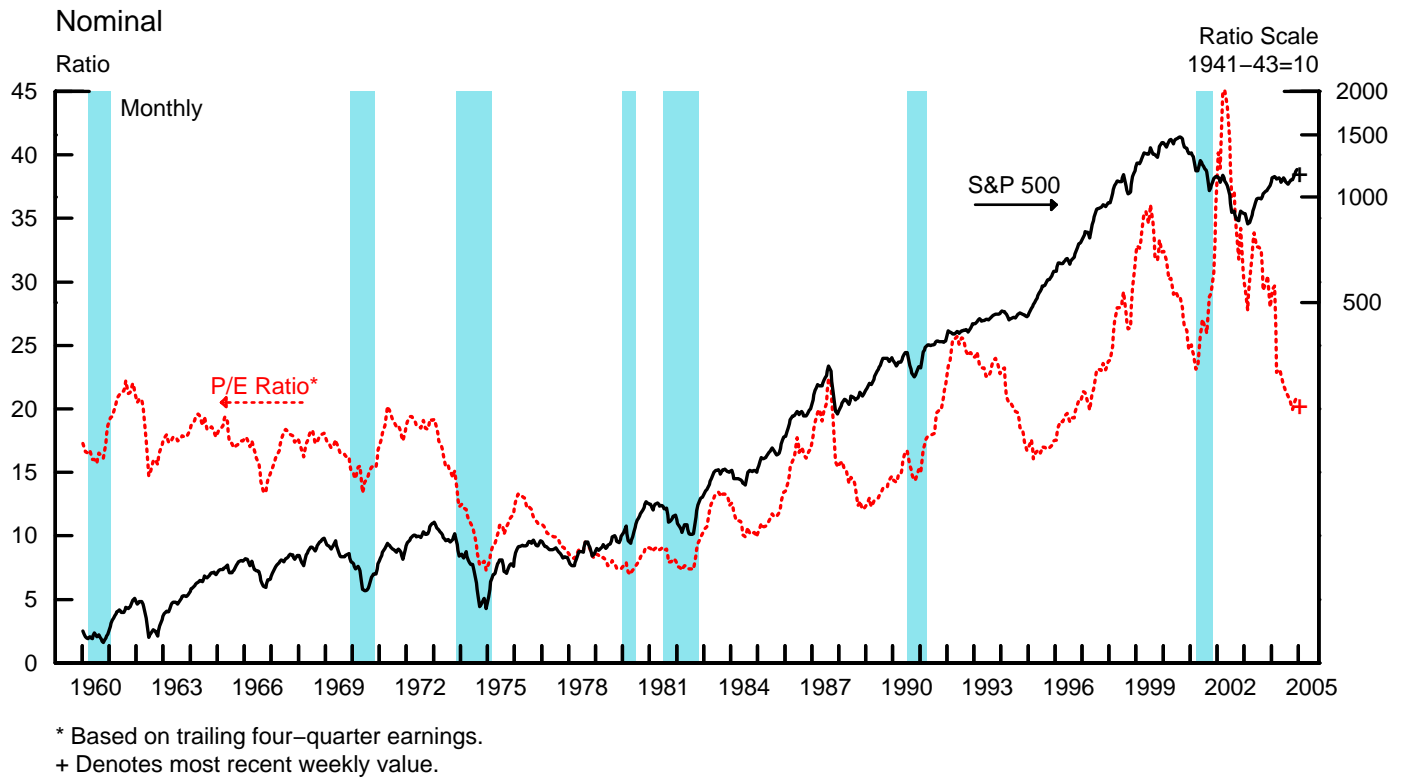
+ Denotes most recent weekly value.

Real



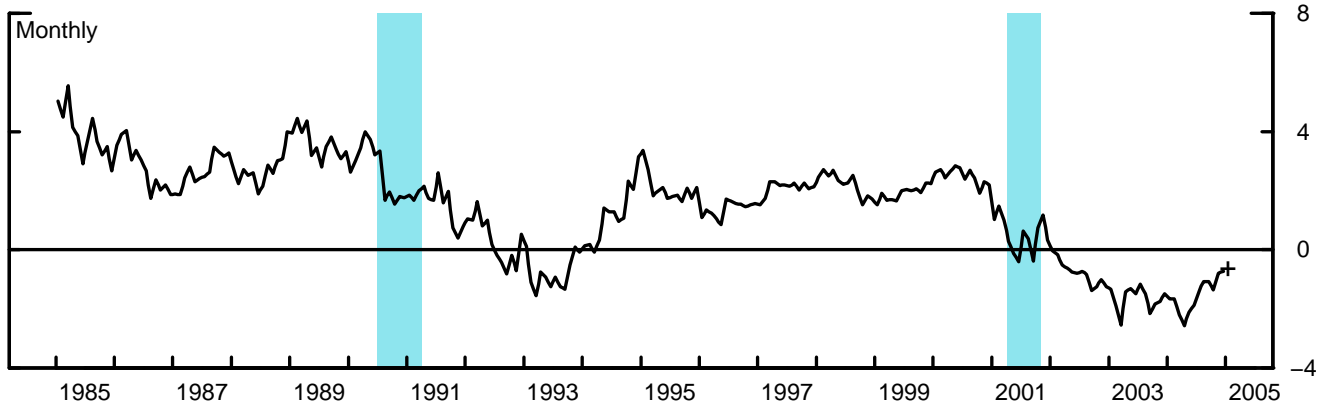
Note. The major currencies index is the trade-weighted average of currencies of the Euro area, Canada, Japan, the U.K., Switzerland, Australia, and Sweden. The other important trading partners index is the trade-weighted average of currencies of 19 other important trading partners. The Broad index is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



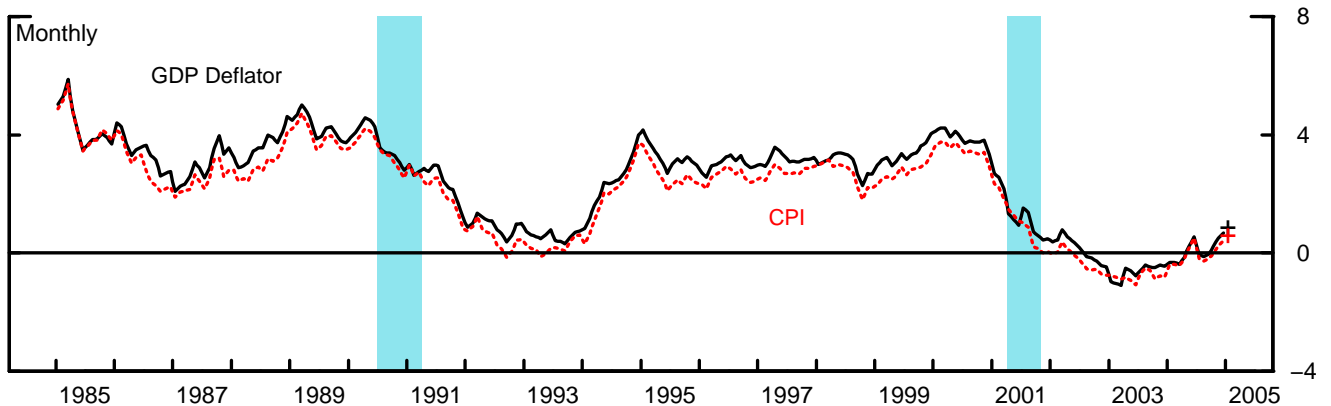
One-Year Real Interest Rates

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



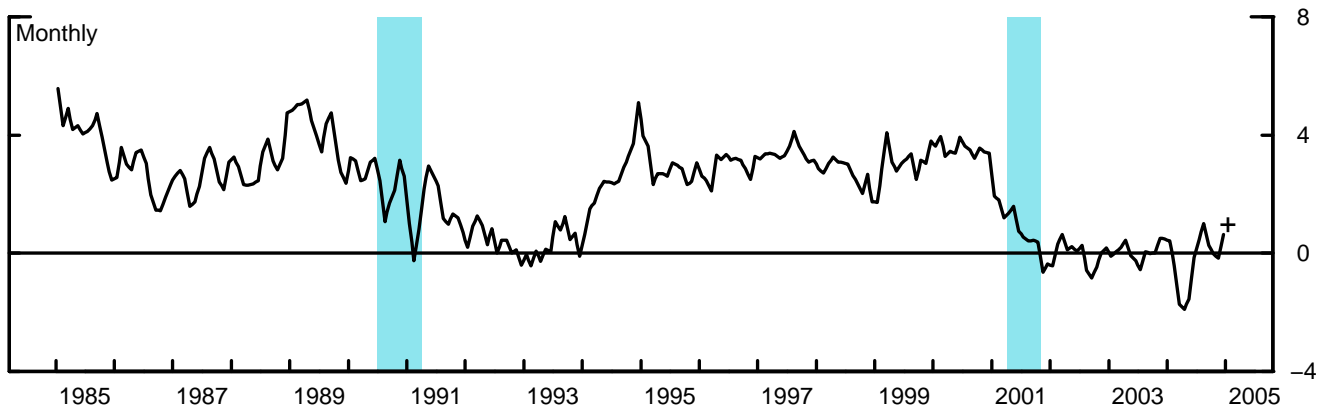
* Mean value of respondents.

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.

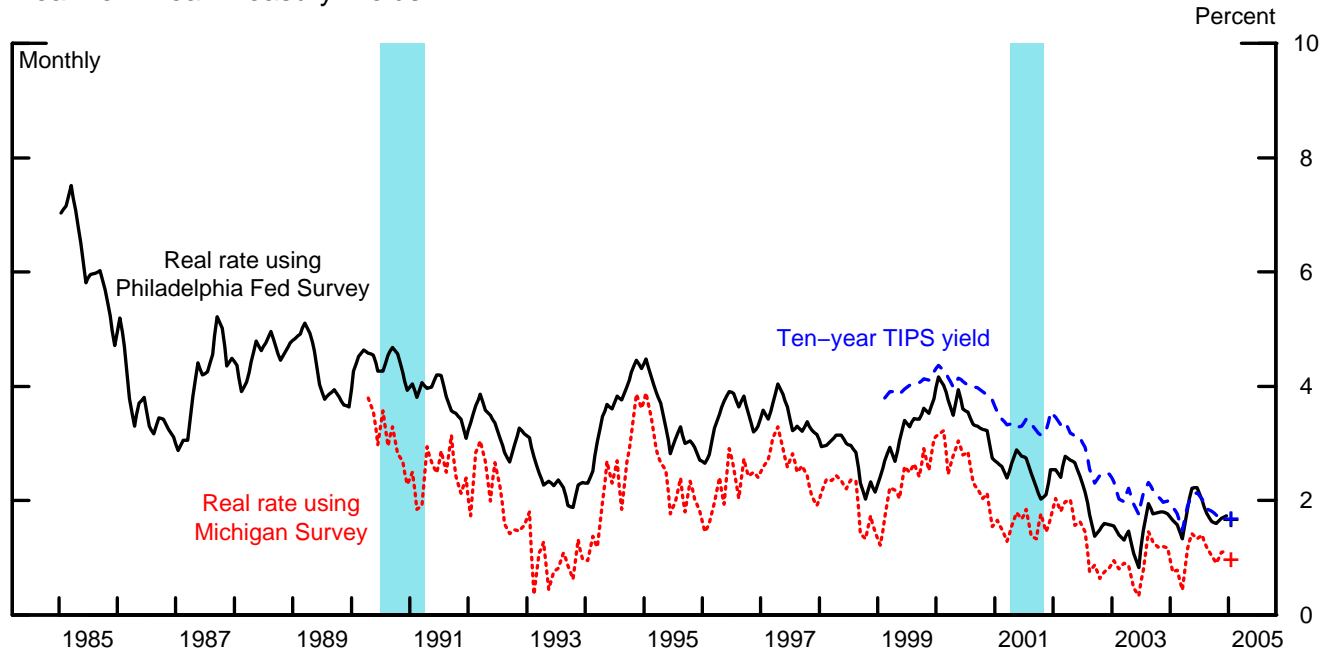
One-Year Treasury Constant Maturity Yield Less Change in the Core CPI from Three Months Prior



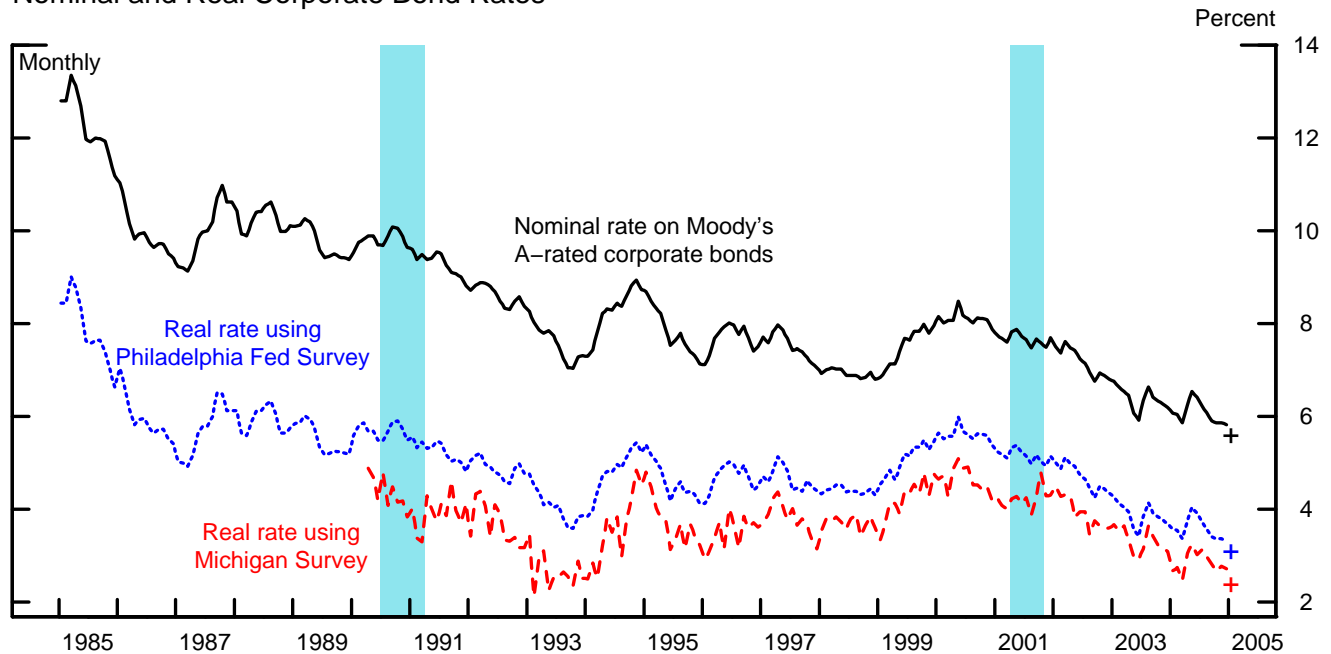
+ Denotes most recent weekly Treasury constant maturity yield less most recent inflation expectation.
Note. Blue shaded regions denote NBER-dated recessions.

Long-Term Real Interest Rates*

Real Ten-Year Treasury Yields



Nominal and Real Corporate Bond Rates



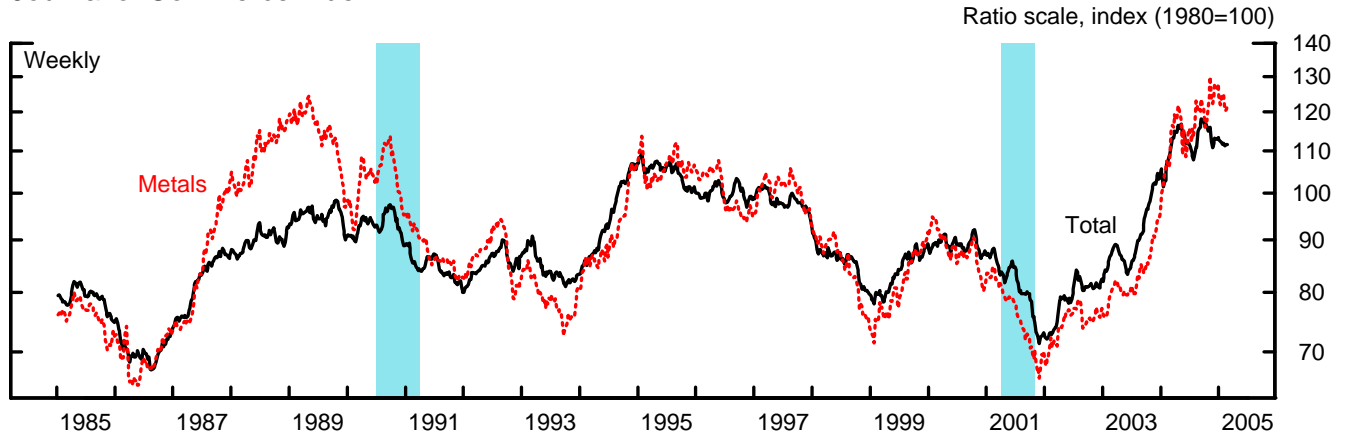
* For real rates, measures using the Philadelphia Fed Survey employ the ten-year inflation expectations from the Blue Chip Survey until April 1991 and the Philadelphia Federal Reserve Bank Survey of Professional Forecasters thereafter (median value of respondents). Measures using the Michigan Survey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

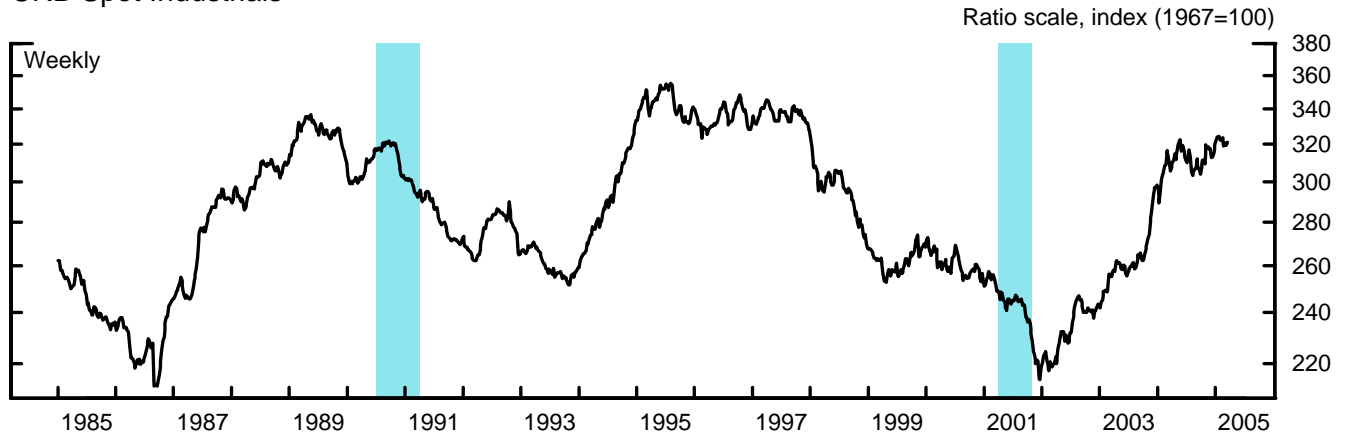
Note. Blue shaded regions denote NBER-dated recessions.

Commodity Price Measures

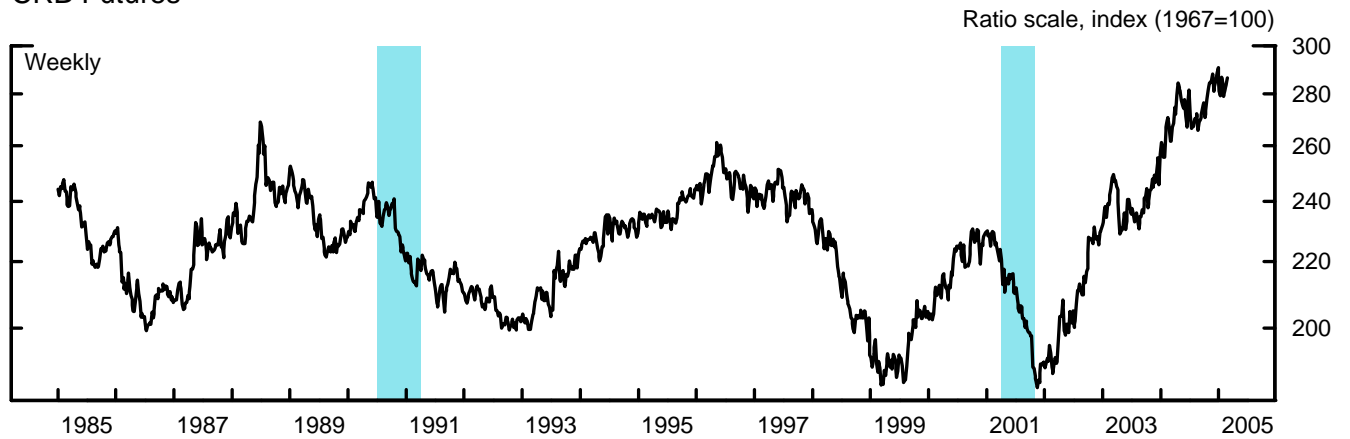
Journal of Commerce Index



CRB Spot Industrials



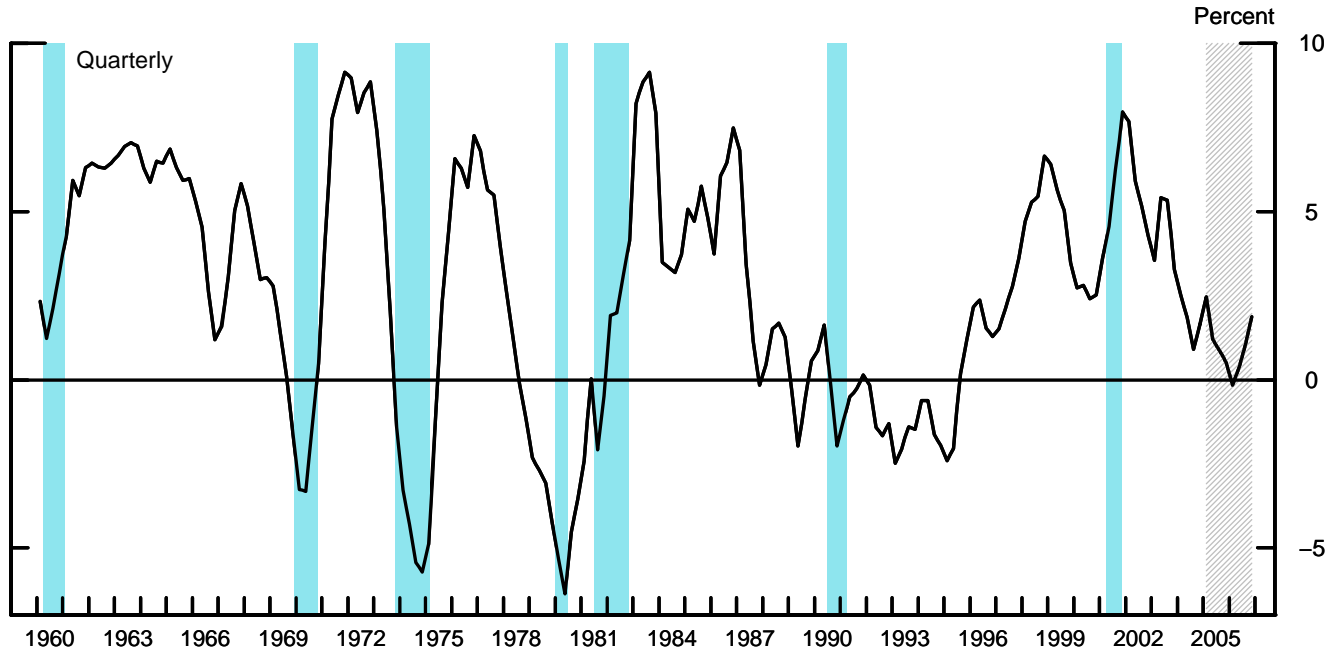
CRB Futures



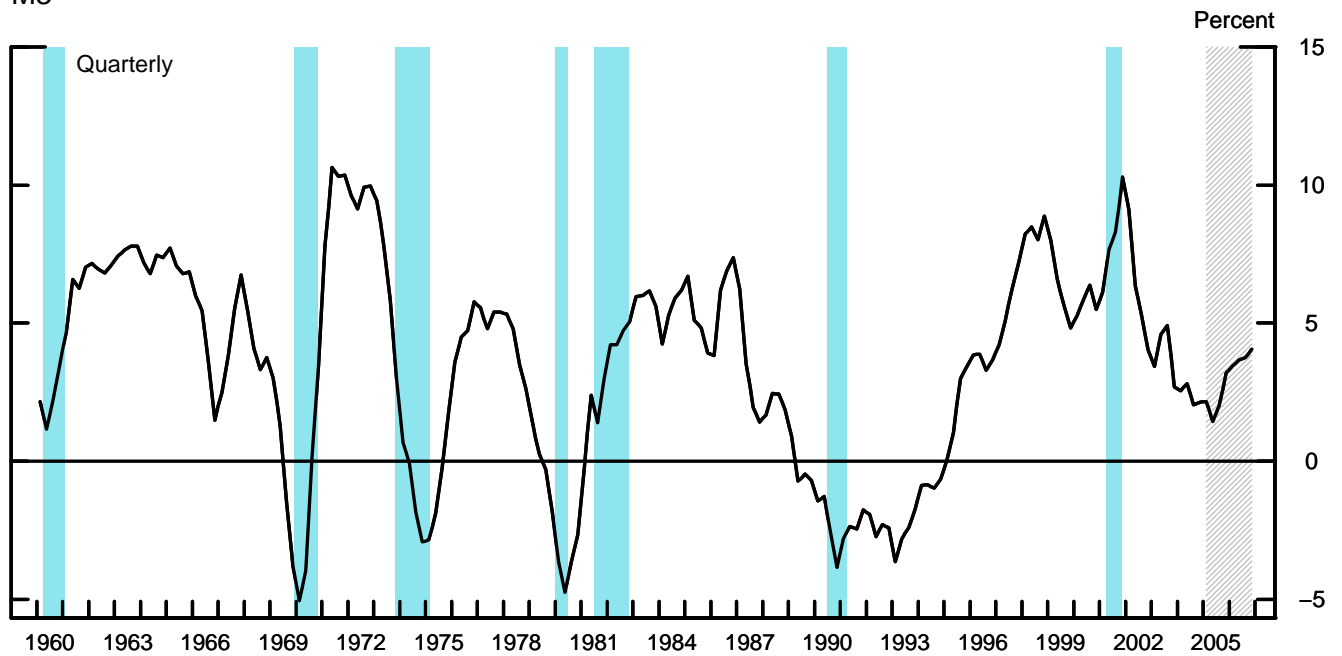
Note. Blue shaded regions denote NBER-dated recessions.

Growth of Real M2 and M3

M2

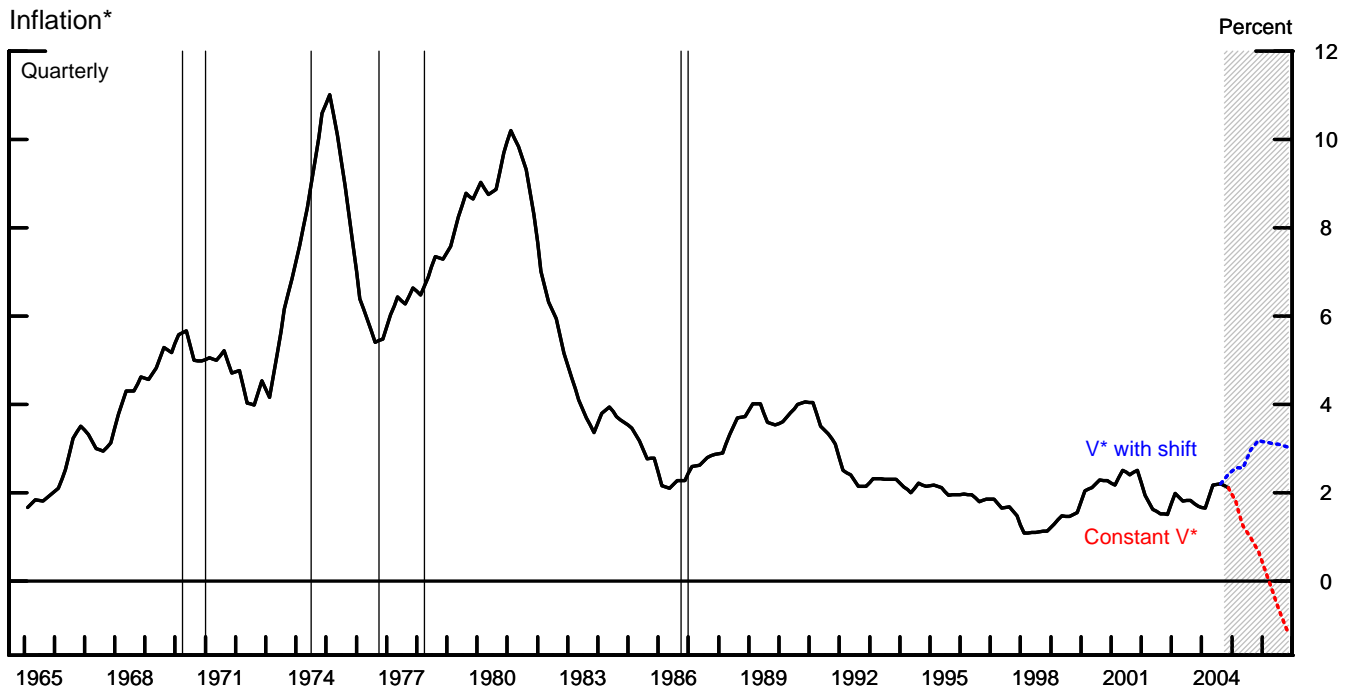
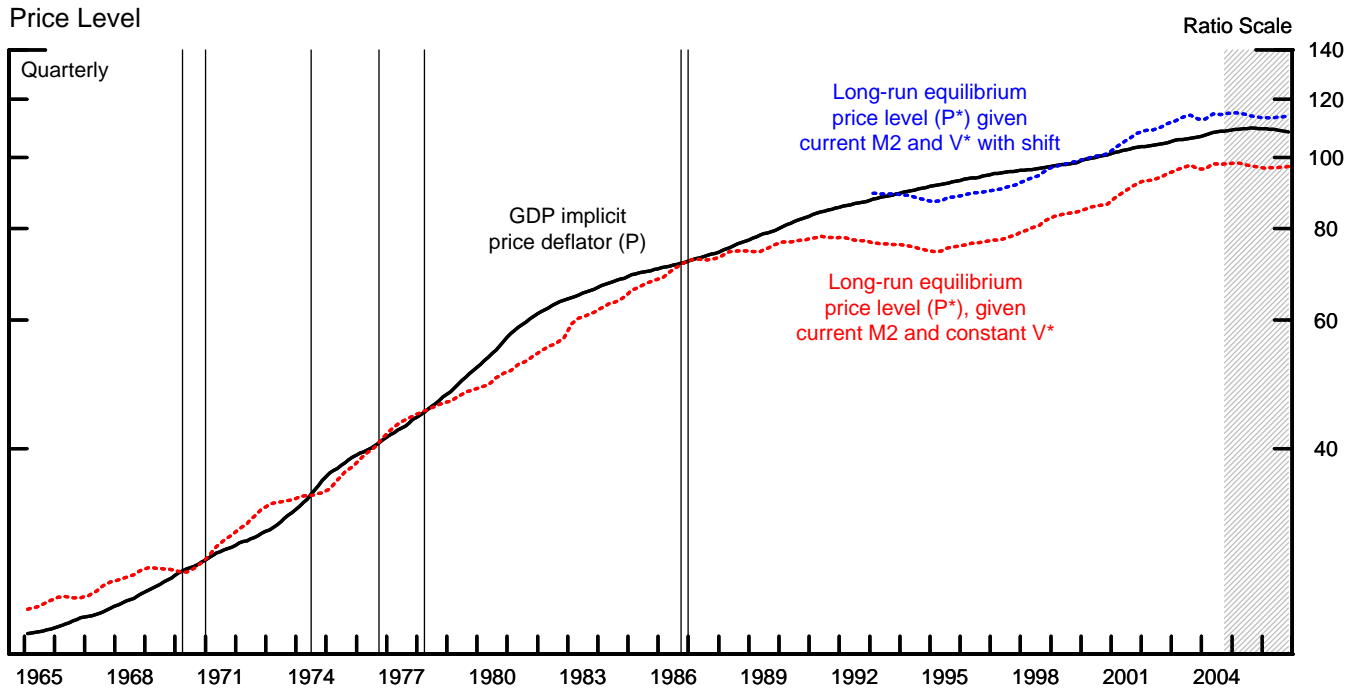


M3



Note. Four-quarter moving average deflated by the CPI. Blue shaded regions denote NBER-dated recessions. Dashed areas denote projection period.

Inflation Indicator Based on M2 and Two Estimates of V*



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

Note. P* is defined to equal M2 times V* divided by potential GDP. Long-run velocity (V*) is estimated from 1959:Q1 to 1989:Q4. V* after 1992 is estimated from 1993:Q1 to present. For the forecast period, P* is based on staff M2 forecast and P is simulated using a short-run dynamic model relating P to P*. Vertical lines mark crossing of P and P*. Dashed areas denote projection period.

Appendix 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
03 -- High	1.45	1.26	1.22	1.28	1.32	1.28	2.11	3.60	4.80	5.58	1.84	2.48	7.48	5.50	6.44	4.06
03 -- Low	0.86	0.75	0.81	0.82	0.93	0.91	1.09	2.06	3.29	4.21	0.77	1.56	6.01	4.78	5.21	3.45
04 -- High	2.34	2.08	2.28	2.63	2.51	2.29	3.13	4.10	5.03	5.64	1.57	2.25	6.90	5.45	6.34	4.27
04 -- Low	0.92	0.73	0.87	0.96	1.04	0.97	1.49	2.65	3.84	4.68	0.42	1.35	6.00	4.73	5.38	3.36
Monthly																
Jan 04	1.00	0.84	0.90	0.99	1.06	0.99	1.75	3.10	4.28	5.06	1.11	1.88	6.44	4.99	5.71	3.63
Feb 04	1.01	0.92	0.95	1.01	1.05	0.99	1.73	3.05	4.22	4.99	0.88	1.77	6.27	4.86	5.64	3.55
Mar 04	1.00	0.96	0.95	1.01	1.05	0.99	1.57	2.78	3.96	4.78	0.55	1.48	6.11	4.78	5.45	3.41
Apr 04	1.00	0.90	0.96	1.11	1.08	1.00	2.09	3.38	4.50	5.22	1.05	1.90	6.46	5.13	5.83	3.65
May 04	1.00	0.90	1.04	1.33	1.20	1.00	2.56	3.86	4.88	5.51	1.37	2.09	6.75	5.39	6.27	3.88
Jun 04	1.03	1.04	1.29	1.64	1.46	1.13	2.78	3.93	4.88	5.49	1.43	2.14	6.78	5.40	6.29	4.10
Jul 04	1.26	1.18	1.35	1.69	1.57	1.29	2.64	3.70	4.64	5.29	1.32	2.02	6.62	5.29	6.06	4.11
Aug 04	1.43	1.37	1.51	1.76	1.68	1.48	2.50	3.49	4.43	5.12	1.15	1.86	6.46	5.18	5.87	4.06
Sep 04	1.61	1.54	1.68	1.91	1.86	1.67	2.51	3.35	4.26	4.96	1.12	1.81	6.27	5.04	5.75	3.99
Oct 04	1.76	1.62	1.79	2.05	2.04	1.79	2.57	3.35	4.24	4.92	1.00	1.74	6.21	4.99	5.72	4.02
Nov 04	1.93	1.91	2.11	2.33	2.26	2.01	2.86	3.52	4.32	4.95	0.93	1.69	6.20	5.06	5.73	4.15
Dec 04	2.16	1.95	2.23	2.50	2.45	2.22	3.02	3.59	4.34	4.94	0.96	1.67	6.15	5.03	5.75	4.18
Weekly																
Nov 26 04	2.01	1.98	2.19	2.41	2.34	2.07	3.01	3.59	4.32	4.92	0.94	1.65	6.16	5.07	5.72	4.27
Dec 3 04	2.01	2.04	2.23	2.42	2.38	2.11	3.04	3.70	4.47	5.07	1.01	1.77	6.30	5.15	5.81	4.19
Dec 10 04	2.02	2.07	2.25	2.43	2.41	2.20	2.94	3.55	4.31	4.92	0.95	1.67	6.14	4.99	5.71	4.15
Dec 17 04	2.20	1.97	2.22	2.48	2.46	2.25	2.99	3.53	4.27	4.86	0.93	1.63	6.08	4.95	5.68	4.18
Dec 24 04	2.26	1.88	2.21	2.55	2.48	2.26	3.05	3.58	4.31	4.90	0.92	1.62	6.12	5.00	5.75	4.17
Dec 31 04	2.21	1.79	2.24	2.61	2.50	2.24	3.10	3.66	4.40	4.98	1.01	1.68	6.18	5.04	5.81	4.19
Jan 7 05	2.18	2.01	2.33	2.63	2.54	2.24	3.18	3.71	4.38	4.93	1.14	1.75	6.12	4.98	5.77	4.10
Jan 14 05	2.26	2.02	2.36	2.66	2.59	2.29	3.23	3.72	4.34	4.85	1.15	1.73	6.05	4.92	5.74	4.10
Jan 21 05	2.27	1.94	2.38	2.68	2.64	2.35	3.23	3.69	4.27	4.75	1.18	1.69	5.97	4.89	5.67	4.11
Jan 28 05	--	2.10	2.42	2.71	2.67	2.41	3.26	3.70	4.28	4.75	1.18	1.71	--	--	5.66	4.18
Daily																
Jan 11 05	2.24	2.02	2.36	2.67	2.58	2.29	3.23	3.73	4.35	4.87	1.17	1.75	6.07	--	--	--
Jan 12 05	2.25	2.00	2.35	2.64	2.60	2.29	3.22	3.72	4.34	4.85	1.15	1.73	6.06	--	--	--
Jan 13 05	2.29	2.04	2.36	2.65	2.61	2.30	3.20	3.67	4.29	4.80	1.11	1.69	6.00	--	--	--
Jan 14 05	2.29	2.03	2.37	2.68	2.61	2.33	3.25	3.72	4.32	4.81	1.17	1.72	6.02	--	--	--
Jan 17 05	2.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jan 18 05	2.31	1.99	2.41	2.71	2.62	2.33	3.26	3.72	4.29	4.77	1.18	1.70	5.98	--	--	--
Jan 19 05	2.19	1.93	2.38	2.69	2.64	2.35	3.26	3.73	4.29	4.76	1.20	1.69	5.96	--	--	--
Jan 20 05	2.25	1.86	2.36	2.67	2.65	2.36	3.22	3.68	4.27	4.74	1.18	1.68	5.97	--	--	--
Jan 21 05	2.26	1.99	2.36	2.66	2.65	2.37	3.17	3.65	4.25	4.73	1.17	1.68	5.95	--	--	--
Jan 24 05	2.26	2.00	2.39	2.69	2.65	2.40	3.21	3.64	4.22	4.70	1.16	1.67	5.91	--	--	--
Jan 25 05	2.29	2.12	2.41	2.70	2.66	2.39	3.24	3.70	4.30	4.77	1.19	1.74	5.98	--	--	--
Jan 26 05	2.33	2.15	2.42	2.71	2.67	2.43	3.28	3.71	4.30	4.76	1.18	1.71	5.97	--	--	--
Jan 27 05	2.35 ^p	2.14	2.45	2.72	2.69	--	3.29	3.74	4.31	4.77	1.19	1.71	--	--	--	--

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 Table 2
Money Aggregates
 Seasonally Adjusted

Period	M1	M2	nontransactions components		M3
			in M2	in M3 only	
	1	2	3	4	5
Annual growth rates (%):					
Annually (Q4 to Q4)					
2002	3.3	6.7	7.7	6.0	6.5
2003	6.6	5.3	5.0	3.5	4.7
2004	5.5	5.2	5.1	7.0	5.7
Quarterly (average)					
2004-Q1	5.9	3.4	2.8	10.1	5.6
Q2	6.1	7.8	8.2	13.0	9.4
Q3	3.8	3.6	3.5	5.7	4.2
Q4	5.6	5.5	5.5	-1.3	3.3
Monthly					
2004-Jan.	-2.7	2.5	3.9	20.0	8.0
Feb.	16.6	7.6	5.3	10.8	8.6
Mar.	12.1	7.6	6.3	16.1	10.3
Apr.	0.4	7.3	9.2	11.9	8.8
May	3.2	11.3	13.5	12.7	11.7
June	7.1	2.3	1.1	11.5	5.3
July	-6.4	0.5	2.4	0.1	0.4
Aug.	16.2	3.9	0.6	4.8	4.2
Sep.	4.0	6.7	7.4	5.2	6.2
Oct.	-0.1	4.7	6.0	-7.9	0.6
Nov.	13.4	6.9	5.1	-5.2	3.0
Dec.	-0.7	4.3	5.6	7.3	5.3
2005-Jan. e	-6.8	5.7	9.0	10.3	7.2
Levels (\$billions):					
Monthly					
2004-Aug.	1343.4	6298.0	4954.6	3012.3	9310.3
Sep.	1347.9	6333.0	4985.0	3025.4	9358.4
Oct.	1347.8	6357.8	5010.1	3005.5	9363.3
Nov.	1362.8	6394.1	5031.4	2992.4	9386.5
Dec.	1362.0	6417.0	5055.0	3010.6	9427.6
Weekly					
2004-Dec. 6	1348.9	6402.8	5053.8	3012.3	9415.0
13	1352.0	6411.7	5059.7	2998.8	9410.4
20	1360.8	6425.3	5064.6	2991.9	9417.2
27	1378.2	6434.8	5056.6	3018.6	9453.4
2005-Jan. 3	1372.3	6401.8	5029.5	3046.9	9448.6
10p	1322.1	6401.2	5079.1	3033.3	9434.5
17p	1336.6	6436.3	5099.7	3036.4	9472.7

p preliminary
 e estimated

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

January 27, 2005

	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							
2002	21,421	---	21,421	12,720	12,748	5,074	2,280	---	32,822	---	54,242	-5,366	517	-4,850
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
2003 QIV	3,299	---	3,299	2,561	3,188	1,350	20	---	7,118	10	10,407	-561	2,750	2,189
2004 QI	1,707	---	1,707	1,311	2,848	1,251	275	---	5,685	---	7,391	-772	-3,515	-4,286
QII	7,756	---	7,756	1,693	2,543	988	84	---	5,307	---	13,063	1,133	418	1,550
QIII	4,508	---	4,508	1,898	4,406	1,507	434	---	8,244	---	12,753	-1,787	782	-1,005
QIV	4,167	---	4,167	3,092	7,453	2,018	571	---	13,134	---	17,301	-5,956	1,728	-4,227
2004 May	409	---	409	1,693	783	713	84	---	3,272	---	3,681	-637	710	73
Jun	3,831	---	3,831	---	1,760	275	---	---	2,035	---	5,866	-1,738	1,824	86
Jul	952	---	952	1,898	3,078	244	29	---	5,249	---	6,202	1,120	-2,372	-1,252
Aug	83	---	83	---	428	568	---	---	996	---	1,078	-750	-1,323	-2,072
Sep	3,473	---	3,473	---	899	695	405	---	1,999	---	5,473	-3,176	7,895	4,718
Oct	500	---	500	1,593	2,765	1,225	400	---	5,984	---	6,484	-2,121	-4,443	-6,564
Nov	3,155	---	3,155	---	2,284	453	86	---	2,822	---	5,977	-1,416	1,543	127
Dec	512	---	512	1,499	2,404	340	85	---	4,328	---	4,840	-1,492	812	-680
2004 Nov 3	192	---	192	---	1,086	118	---	---	1,204	---	1,396	1,739	-2,000	-261
Nov 10	327	---	327	---	---	335	86	---	421	---	748	805	-1,714	-909
Nov 17	20	---	20	---	1,198	---	---	---	1,198	---	1,217	-203	3,429	3,226
Nov 24	1,451	---	1,451	---	---	---	---	---	---	---	1,451	-3,235	4,429	1,194
Dec 1	1,286	---	1,286	---	---	---	---	---	---	---	1,286	3,748	857	4,605
Dec 8	257	---	257	1,499	2,404	---	---	---	3,903	---	4,160	-3,878	-2,000	-5,878
Dec 15	128	---	128	---	---	340	85	---	425	---	553	-319	-2,000	-2,319
Dec 22	---	---	---	---	---	---	---	---	---	---	---	960	-1,000	-40
Dec 29	109	---	109	---	---	---	---	---	---	---	109	1,621	2,000	3,621
2005 Jan 5	---	---	---	---	---	---	---	---	---	---	---	2,373	---	2,373
Jan 12	---	---	---	---	---	---	---	---	---	---	---	-5,384	-5,000	-10,384
Jan 19	---	---	---	---	---	---	---	---	---	---	---	3,277	1,000	4,277
Jan 26	---	---	---	---	---	---	---	---	---	---	---	-2,766	---	-2,766
2005 Jan 27	---	---	---	---	---	---	---	---	---	---	---	2,654	-1,000	1,654
Intermeeting Period														
Dec 14-Jan 27	163	---	163	---	---	---	---	---	---	---	163	4,204	-4,000	204
Memo: LEVEL (bil. \$)														
Jan 27			263.0	117.6	209.7	51.8	75.8		454.9		717.9	-16.7	16.0	-0.7

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.