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JUNE 21, 2002

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 Developments¹

(1) The FOMC's decision on May 7 to leave the intended federal funds rate at 1-3/4 percent and to retain a neutral balance-of-risks statement came as no surprise to financial markets.² Treasury yields fell a few basis points that afternoon, though, as market participants focused on the language in the accompanying statement indicating that the Committee remained uncertain about the extent and timing of the strengthening in final demand. The mixed bag of subsequent economic data releases—along with heightened geopolitical tensions, warnings of terrorism, and further revelations of questionable corporate accounting practices—led investors to mark down their assessment of the strength of the economic expansion and to withdraw somewhat from taking on risk. As a result, market participants now see monetary policy on hold into the fall, with no change in the balance-of-risks assessment, and have lowered the expected path of the intended funds rate about 1/2 percentage point next year (chart 1). Judged by options on interest rates futures, uncertainty about that path, at least at longer horizons, has increased appreciably.

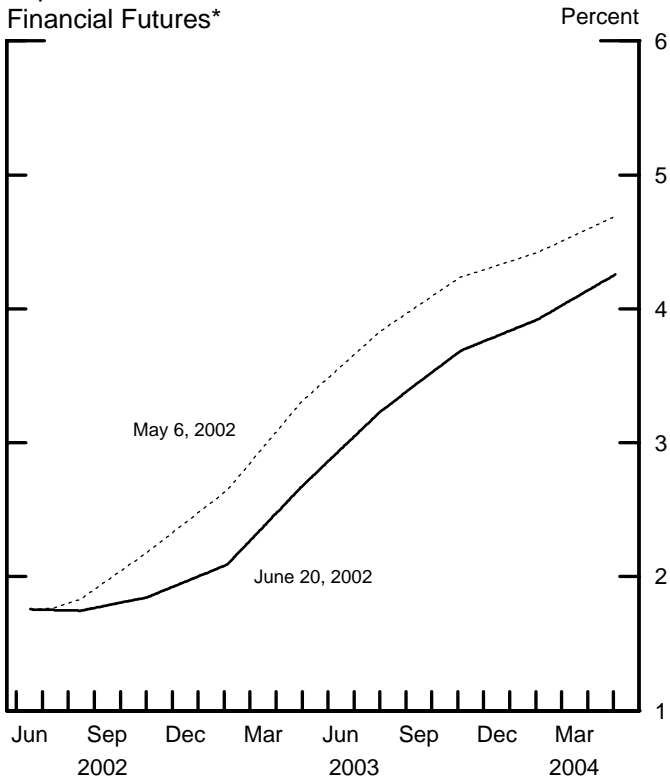
(2) Consistent with the downward revision to policy expectations, yields on short- and intermediate-term Treasury notes have fallen about 25 to 35 basis points since the May FOMC meeting. Given that the yield on ten-year indexed Treasury

¹ Financial market quotes are taken at the close of business Thursday, June 20.

² The federal funds rate has averaged very close to its 1-3/4 percent target over the intermeeting period. The Desk has purchased \$11.8 billion of Treasury securities in outright operations: \$9.9 billion of Treasury coupon securities and bills in the market and \$1.9 billion of bills from foreign official institutions. The outstanding volume of long-term System RPs was decreased \$1 billion to \$18 billion.

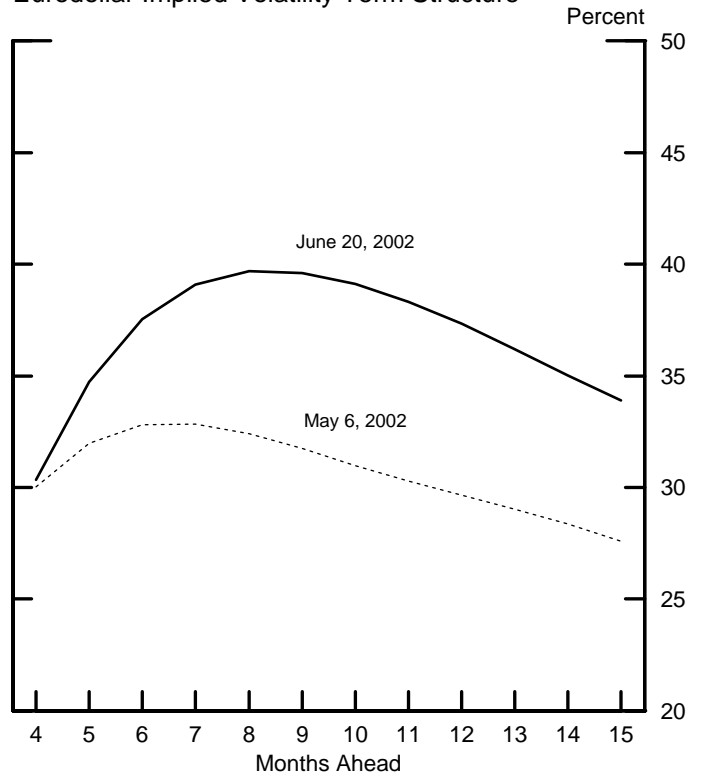
Chart 1 Financial Market Indicators

Expected Federal Funds Rates Estimated from Financial Futures*

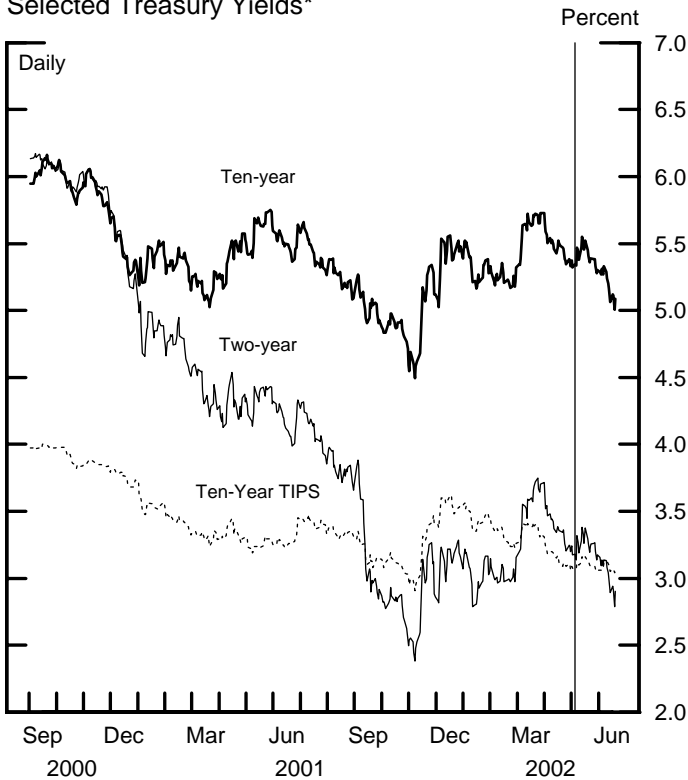


*Estimates from federal funds and eurodollar futures rates with an allowance for term premia and other adjustments.

Eurodollar Implied Volatility Term Structure

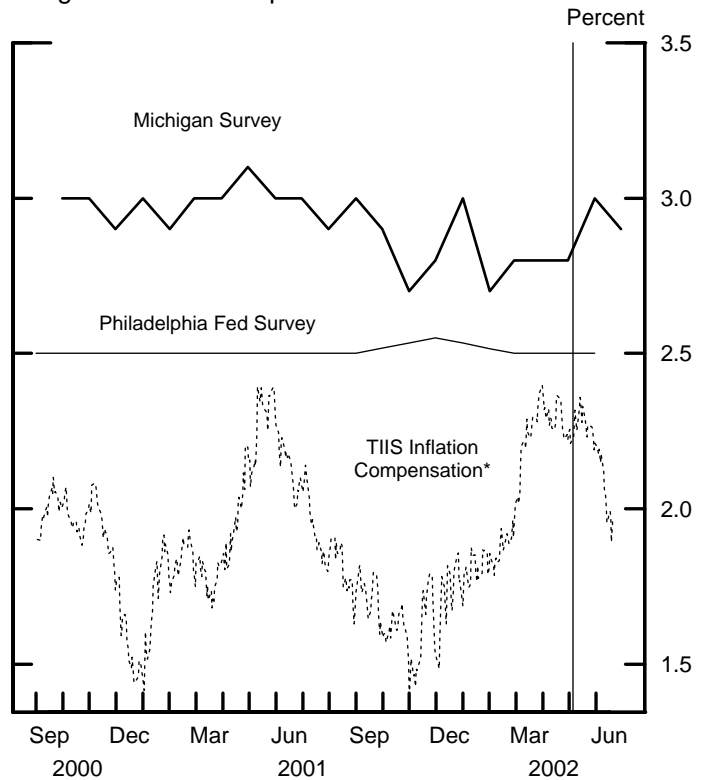


Selected Treasury Yields*



*Nominal Treasury yields are estimated from a smoothed yield curve based on off-the-run securities.

Long-Run Inflation Expectations



*The inflation rate that would equalize the price of the ten-year TIIS and the value of a portfolio of nominal zero-coupon securities with the same payments.

Note: Solid vertical line indicates May 7 FOMC meeting.

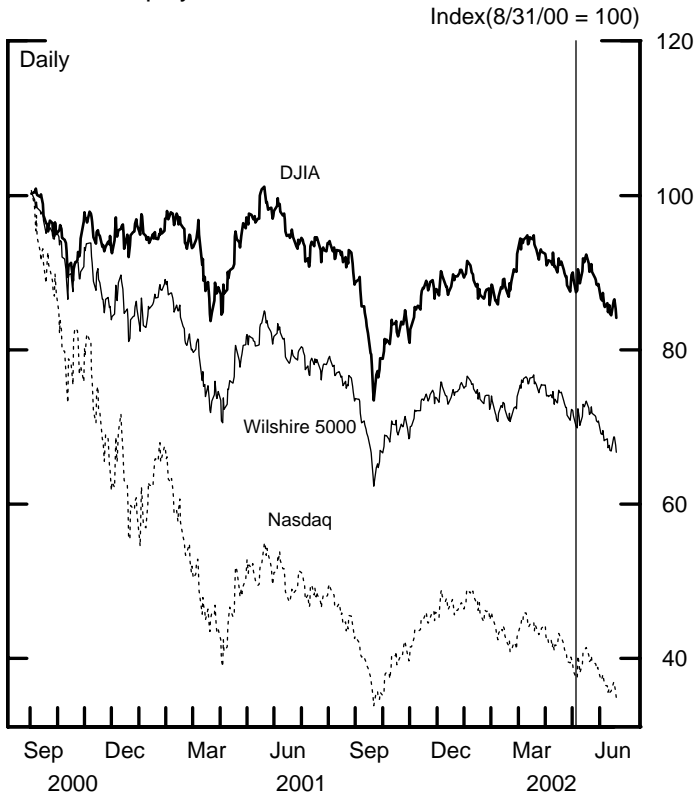
debt has not moved much, the decline in the comparable nominal yield implies that inflation compensation has dropped by the same amount. In contrast, survey measures of expected inflation have held steady. In part, the drop in yields on nominal Treasury securities may have owed to heavier safe-haven flows that were prompted by heightened geopolitical tensions and a downdraft in equity prices.³ While earnings reports for the first quarter mostly matched analysts' expectations, guidance about corporate sales prospects tended to be downbeat, on balance, helping to push major equity indexes 3-3/4 to 7-1/4 percent lower over the intermeeting period (chart 2). In fixed-income markets, spreads over comparable Treasury instruments have fallen somewhat for most investment-grade corporate bonds but have risen substantially for high-yield bonds, consistent with an apparently increased tendency for investors to shy away from riskier securities. Indeed, risk spreads for some highly leveraged firms rose to levels that induced them to postpone issues. Flows into equity and junk bond mutual funds, which had been strong earlier this year, dried up in May and early June, while flows into other types of domestic bond funds picked up.

(3) On balance over the intermeeting period, the trade-weighted value of the dollar against other major currencies has declined about 3-1/2 percent (chart 2). The dollar's slide was broad-based as indications of softer U.S. growth and a scaling back of expectations regarding near-term Federal Reserve tightening apparently lessened the attractiveness of dollar assets and prompted concerns that capital inflows from

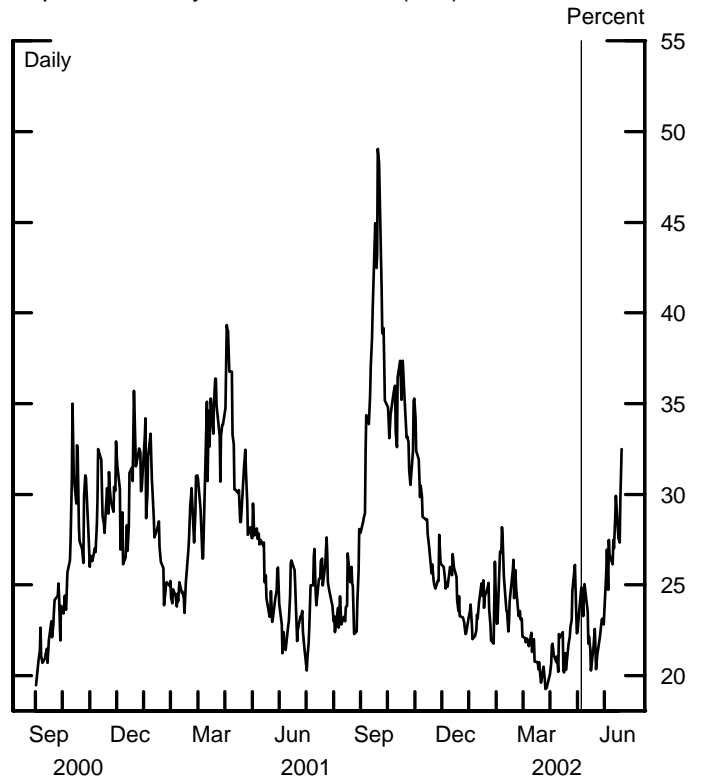
³ Other factors reportedly influencing Treasury yields included purchases by investors of longer-term Treasuries to temper the effects on their portfolios of the shortening durations of mortgage backed securities as interest rates fell. In addition, some states and municipalities purchased Treasuries in the market to defease their securities they have refunded in advance. Normally, those entities would purchase nonmarketable issues from the Treasury, but with the debt ceiling currently binding, the Treasury has suspended such direct sales.

Chart 2 Financial Market Indicators

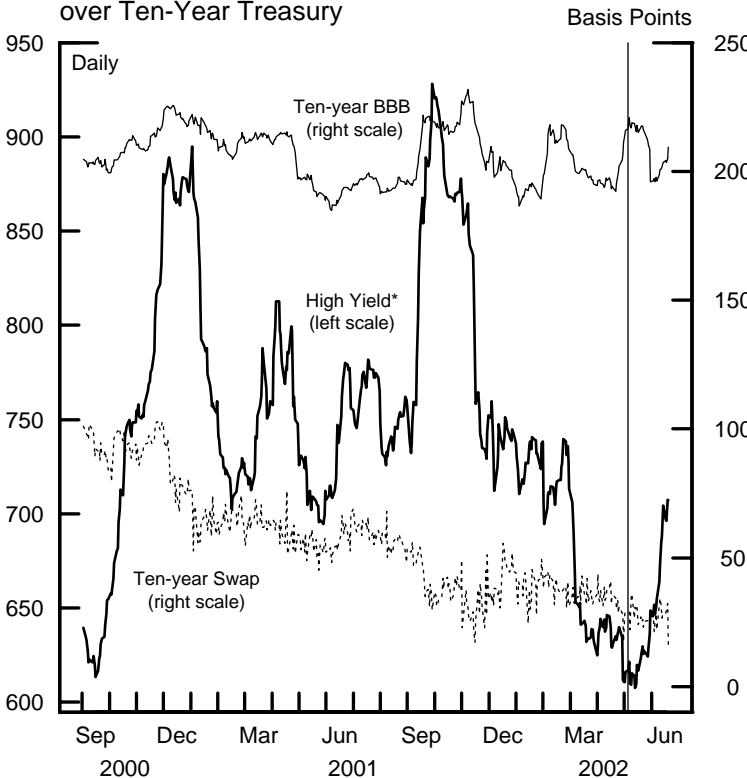
Selected Equity Indexes



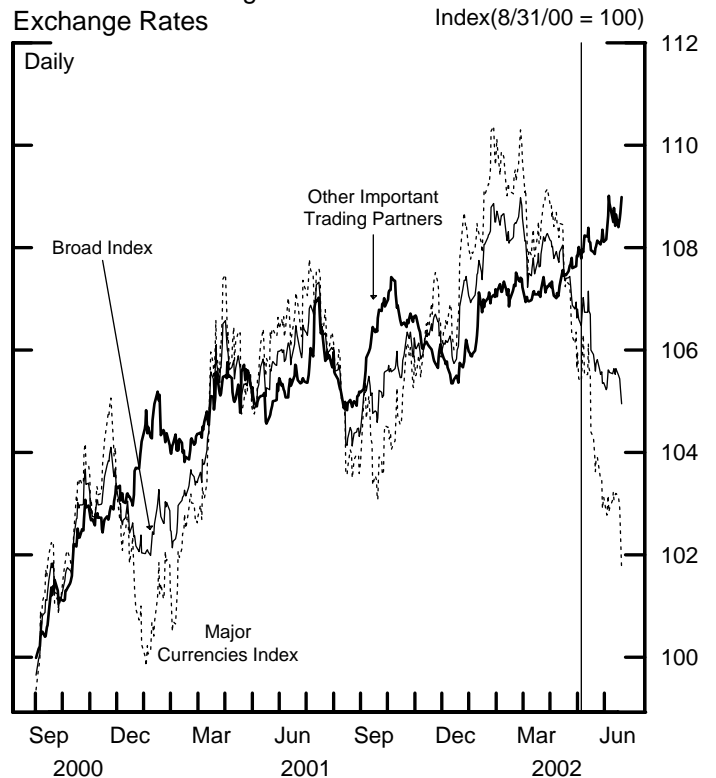
Implied Volatility of the S&P 100 (VIX)



Spreads of Selected Private Long-Term Yields over Ten-Year Treasury



Nominal Trade-Weighted Dollar Exchange Rates



*Source: Merrill Lynch.

Note: Solid vertical line indicates May 7 FOMC meeting.

abroad may no longer increase fast enough to support the dollar against the backdrop of a growing U.S. current account deficit. The decline against the yen was interrupted several times by foreign exchange intervention by Japanese authorities in late May and early June. Government bond yields were essentially unchanged in Japan and have declined 15 to 20 basis points in Europe, somewhat less than the drop in the comparable U.S. Treasury yield. Foreign equity markets have moved substantially lower, with the largest declines in Europe. The losses in Japan were smaller amid scattered indications of improved economic performance there. U.S. monetary authorities did not intervene in foreign exchange markets,

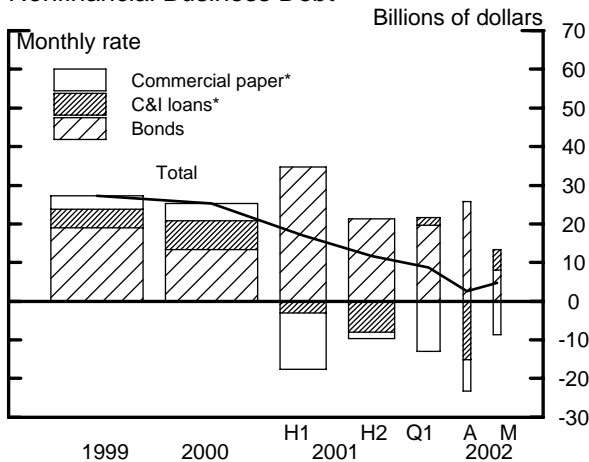
(4) On balance, the dollar's value against the currencies of other important trading partners has risen 1 percent over the intermeeting period. Markets reacted noticeably during the intermeeting period to growing concerns about economic and political problems in several Latin American countries. The dollar's decline against major currencies and scaled-back expectations for U.S. growth seemed to spill over to Mexican markets, with the peso dropping about 4 percent against the dollar and share prices falling almost 12 percent. Uncertainties ahead of Brazil's autumn elections and worries about its large volume of debt maturing soon caused spreads on Brazil's sovereign bonds over comparable Treasuries to widen more than 600 basis points. The Argentine peso fell 12-1/2 percent further against the dollar, as efforts to stabilize the Argentine economy remained stalled. In contrast, currencies of several emerging Asian economies—including South Korea, Singapore, Taiwan, and Indonesia—firmed against the dollar amid further indications that first-half growth there has been robust and that recovery may be extending beyond technology-based export sectors.

(5) Nonfinancial businesses have borrowed relatively little on net in the past two months. Net bond issuance in May was very weak, commercial paper continued to run off, and bank loans were up only a little (chart 3). Equity issuance, however, held up well last month, as some firms sold shares in an attempt to assuage investor concerns about leverage even in the face of falling stock prices. Households expanded their consumer debt at a moderate rate in April, and data from commercial banks suggest similar growth in May. Home mortgage debt, which expanded at a 10 percent annual rate in the first quarter, appears to be on track for another strong showing in the current quarter as housing activity remains robust and mortgage refinancings, with the associated cashing-out of equity, continue to be brisk. On a seasonally adjusted basis, Treasury debt held by the public increased in May. The statutory debt ceiling, which applies to gross public debt (not seasonally adjusted), hit its \$5.95 trillion limit in mid-May and continues to bind. Tax collections this month have been running about as expected, and it still appears that Treasury will not have the means to get past the end of this month without resorting to extraordinary accounting devices absent an increase in the debt ceiling (see the box on the next page).

(6) M2 grew at a 5 percent annual rate on average over April and May (chart 3). Tax effects, arising from buildups and runoffs in liquid components that differ from those embedded in the seasonal factors, significantly boosted May growth after having depressed April growth by a similar amount. The reduced attractiveness of stocks, as reflected in a halt of equity mutual fund inflows last month, probably also contributed to rapid M2 growth in May, particularly in retail money market funds. The opportunity cost of holding M2 has been relatively stable over the first half of the year, and its velocity appears to have leveled out as well after its sharp drop in 2001.

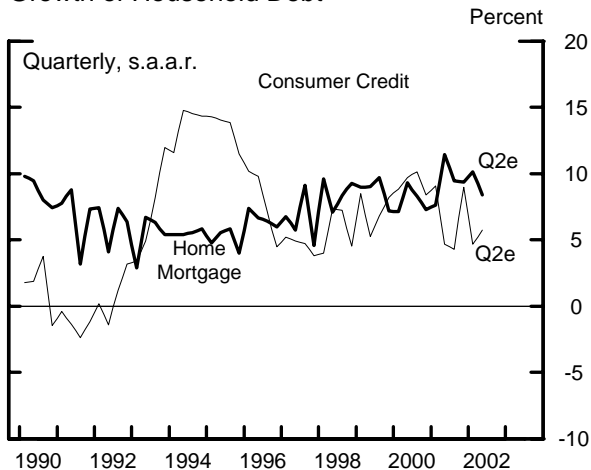
Chart 3 Debt and Money Growth

Growth of Components of Nonfinancial Business Debt



* Seasonally adjusted.

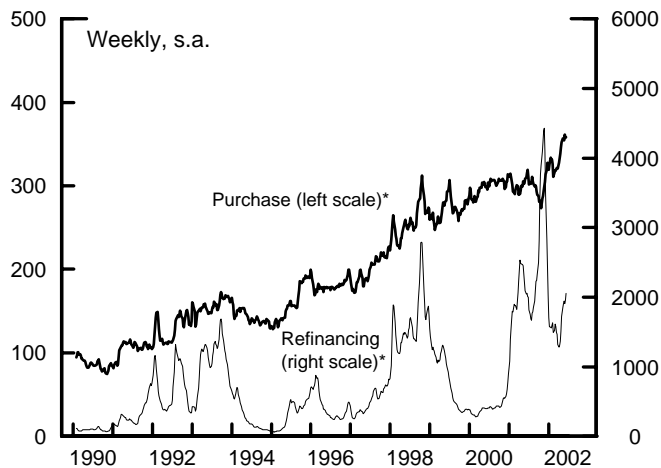
Growth of Household Debt



e Estimated.

Note. Last observations are for 2002Q1, which are staff estimates.

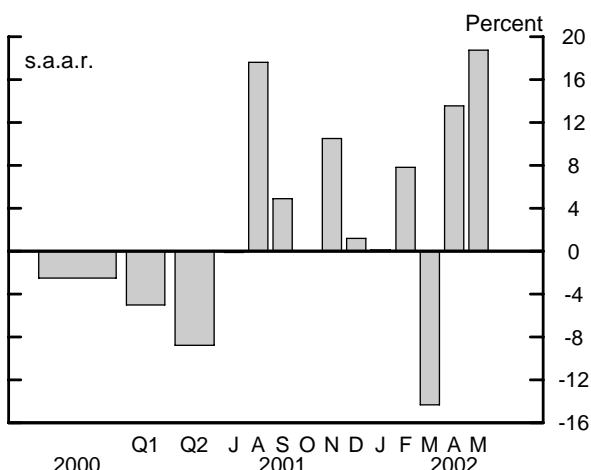
MBA Residential Mortgage Indexes



* 4-week moving average.

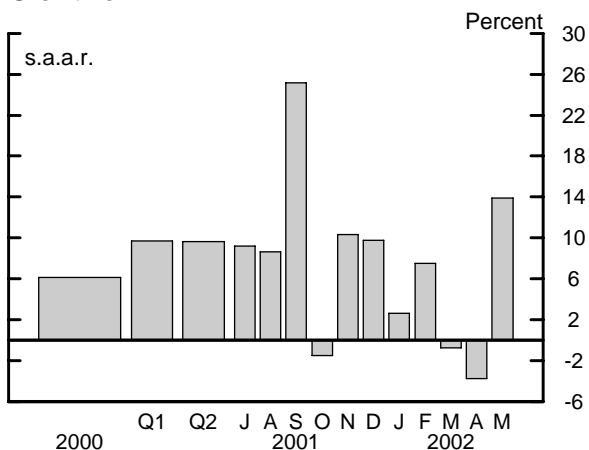
Note. March 16, 1990 = 100 for n.s.a. series.

Growth of Federal Debt

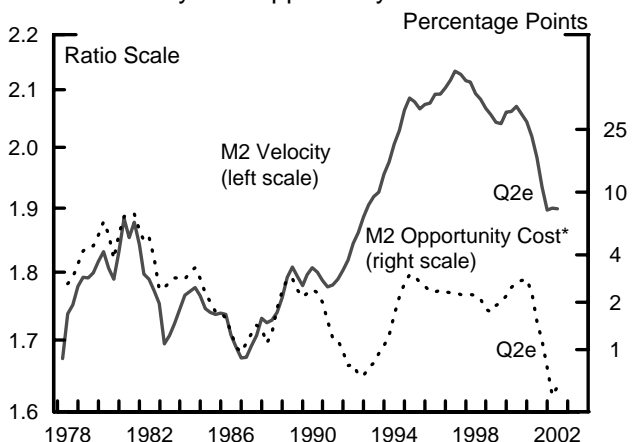


Note. Treasury debt held by the public, month end.

Growth of M2



M2 Velocity and Opportunity Cost

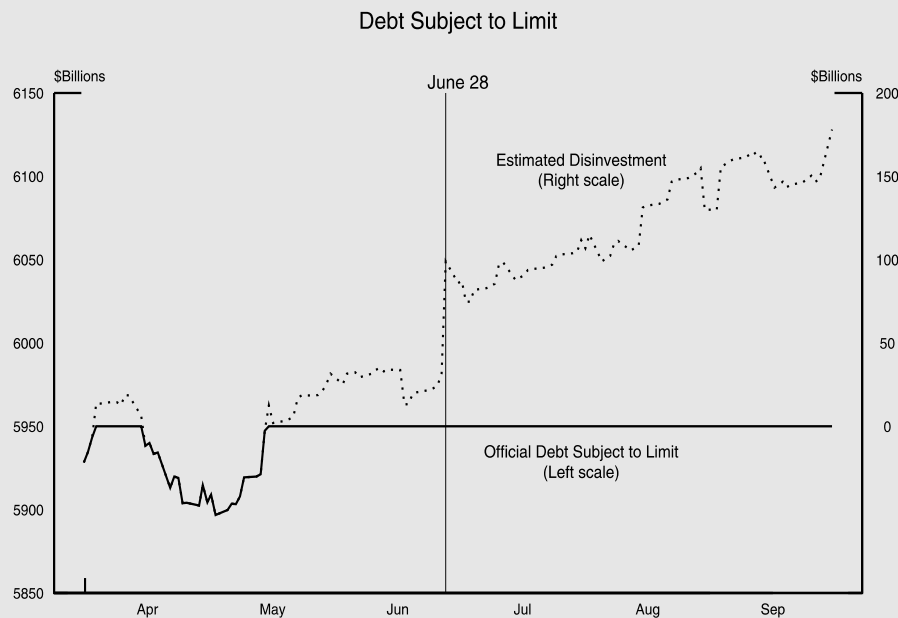


e Estimated.

* Two-quarter moving average.

The Treasury Debt Ceiling

Since May 16, 2002, the Treasury has used accounting devices to stay under the \$5.95 trillion statutory debt ceiling. Over this period, it has disinvested as much as \$30 billion from government trust funds (chart). The Treasury has publicly identified \$80 billion of such potential accounting devices it would be willing to employ. If it holds to that stated amount, the issue may come to a head on June 28th, when a large amount of interest must be credited to various federal trust funds in the form of nonmarketable Treasury securities that are subject to the debt ceiling.



Tax collections in June have not provided much extra cash to allow the Treasury to pay down existing debt and create enough room under the ceiling to issue debt to meet its month-end obligations. As a result, the announcement of the June 26th auction of two-year notes, which normally would have been made on June 19th, has been postponed until the Treasury has assurance of borrowing authority. However, market prices do not suggest that participants are particularly concerned about the crisis, presumably because they expect the Congress to resolve the issue before the Treasury defaults (even to a government trust fund) or the Treasury to take extreme measures to stave off default.

In previous debt-ceiling emergencies, the political wrangling has typically gone down to the wire. As the deadline approaches, the Treasury may look for ways to disinvest the trust funds further, or the Congress may grant a temporary exemption from the ceiling for certain debt issues.

Policy Alternatives

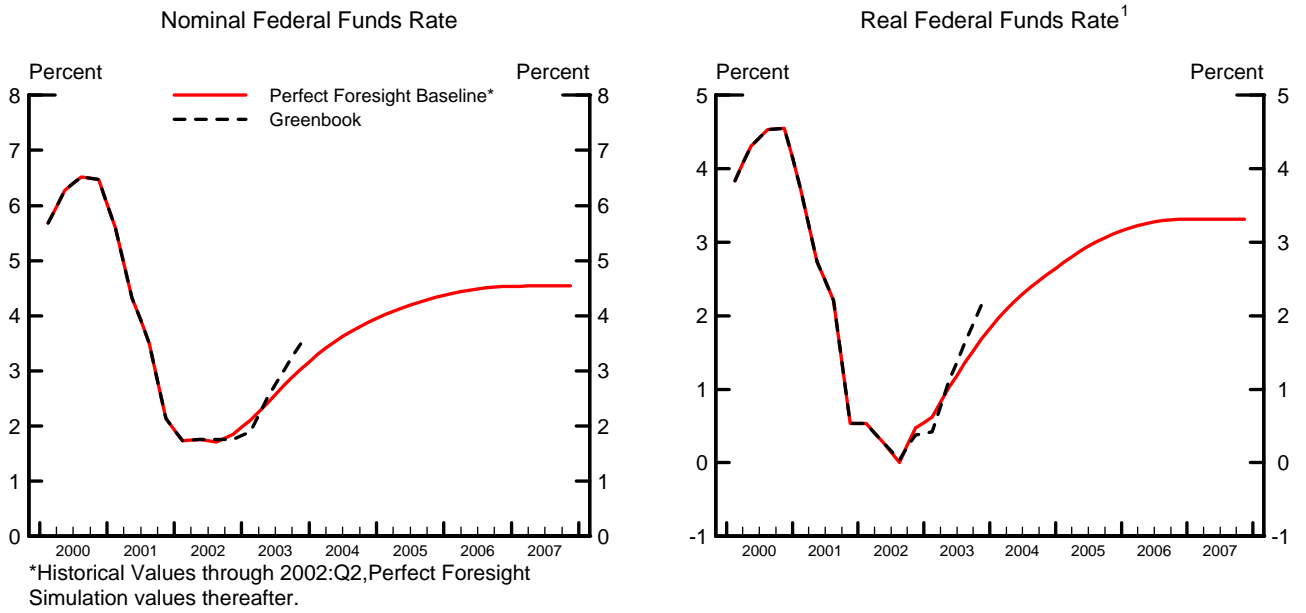
(7) Although market participants apparently viewed economic data over the intermeeting period as having a weakish cast, the staff outlook had not been as buoyant to begin with, and the broad contour of the forecast has changed little. From the staff's perspective, the incoming nonfinancial data have generally aligned with expectations—with the notable exception of disappointing indicators of consumption in the current quarter. Moreover, with equity prices lower and businesses apparently less confident, the staff has edged down the projected growth of real GDP this year and next. As a consequence, the assumed inception of policy tightening has been postponed until early next year. The staff now assumes the funds rate will reach 3-1/2 percent by the fourth quarter of next year, Treasury coupon yields will move higher from their new lower level as the tightening occurs, but quality spreads on corporate bonds will narrow as the economy's expansion continues. Stock prices are anticipated to hold this year near their current level—about 6 percent below the assumption in the May Greenbook—and trend up next year. As the appetite of global investors to shift portfolios to dollar assets is assumed to fail to keep pace with the burgeoning current account deficit, the foreign exchange value of the dollar is seen as moving lower through the end of next year, in contrast to the fairly flat path previously envisioned. Against this backdrop, forecasted growth in real GDP over the next six quarters outpaces that of its potential, closing much of the current output gap by the end of next year. The tendency for economic slack to put downward pressure on core inflation in the interim, however, is about offset by an uptum in import prices, so core PCE inflation holds just below 1-1/2 percent this year and next.

(8) At the end of the Greenbook forecast period in the fourth quarter of 2003, the level of output is near its potential, the real funds rate is close to its equilibrium level, and pressures on inflation in either direction are muted. But in the

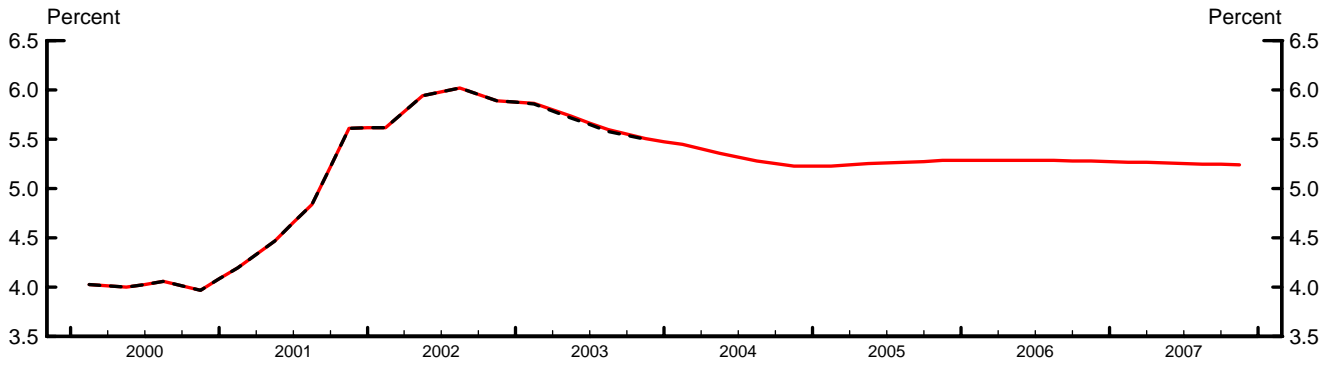
staff view, forces are in play that will require further policy action to maintain the economy along a sustainable path beyond the Greenbook horizon. A depreciating dollar will steer more foreign demand toward U.S. markets, and domestic firms will find capital spending to be increasingly attractive over time, raising the equilibrium real federal funds rate and necessitating a policy response. Against this backdrop, alternative scenarios were created using the FRB/US model to explore challenges to monetary policy. In all cases, the model was solved to find a path for the funds rate beginning next quarter that minimizes squared deviations of output from its potential and the inflation rate from a long-term target, with a small penalty applied to changes in the funds rate. Moreover, as in similar exercises in recent Bluebooks, the policy maker is assumed to operate with complete knowledge of the forces shaping the extended outlook—that is, to have “perfect foresight.” Those forces shaping the outlook extended through 2007 include the complete structure of the economy as approximated by FRB/US and judgmental assumptions made to preserve a few key features of the staff outlook beyond the Greenbook horizon. In particular, potential output is expected to grow at a rate of 3-1/4 percent after 2003, and the unemployment rate consistent with stable inflation is anticipated to hold at 5-1/4 percent. The decline in the real exchange rate is assumed to steepen modestly to 3 percent per year by 2004 and stay at that pace thereafter, and growth in foreign economic activity is assumed to climb to 3-3/4 percent, thereby allowing the current account to stabilize relative to nominal GDP. Growth in federal expenditures is assumed to be restrained sufficiently to prevent further deterioration in the unified deficit past 2003. (In general, the extension of the Greenbook forecast for this round differs little from what was shown in the May Bluebook.)

(9) The dashed line in the upper panel of chart 4 plots the staff assumption for the nominal federal funds rate over the Greenbook baseline, which ends in 2003.

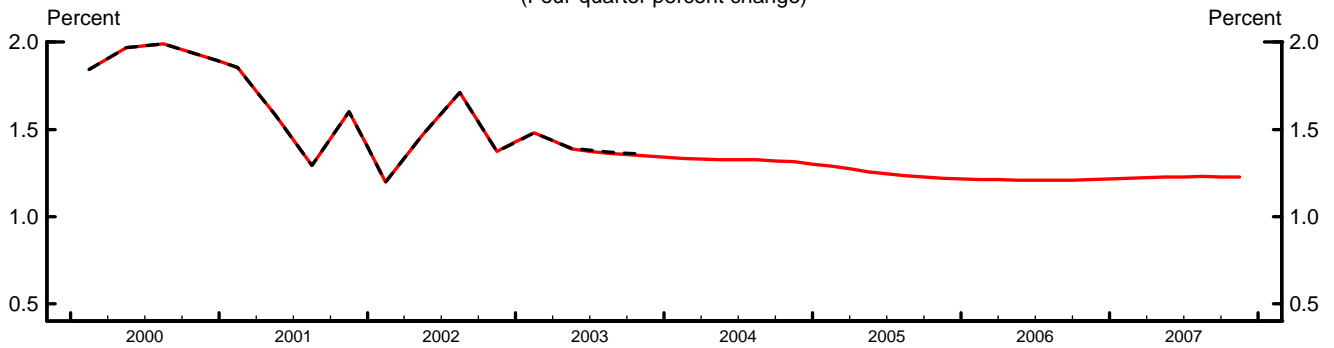
Chart 4
 "Perfect Foresight" Strategy for Monetary Policy
 Baseline



Civilian Unemployment Rate



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

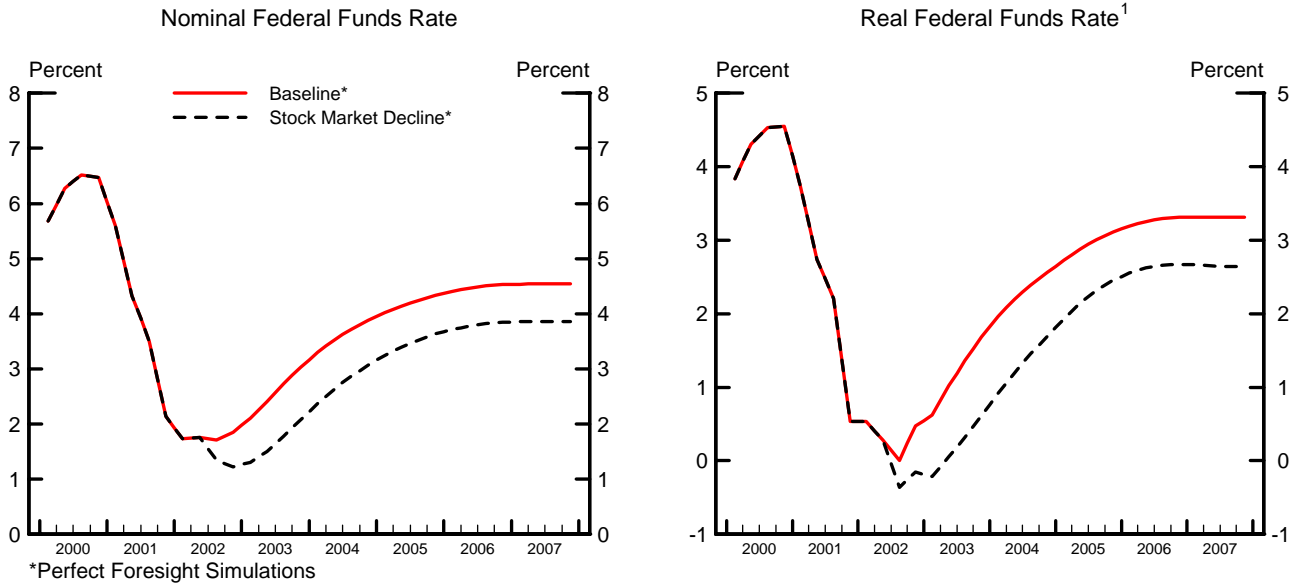


1. The real federal funds rate is calculated as the quarterly nominal funds rate minus the four-quarter lagged core PCE inflation rate as a proxy for inflation expectations.

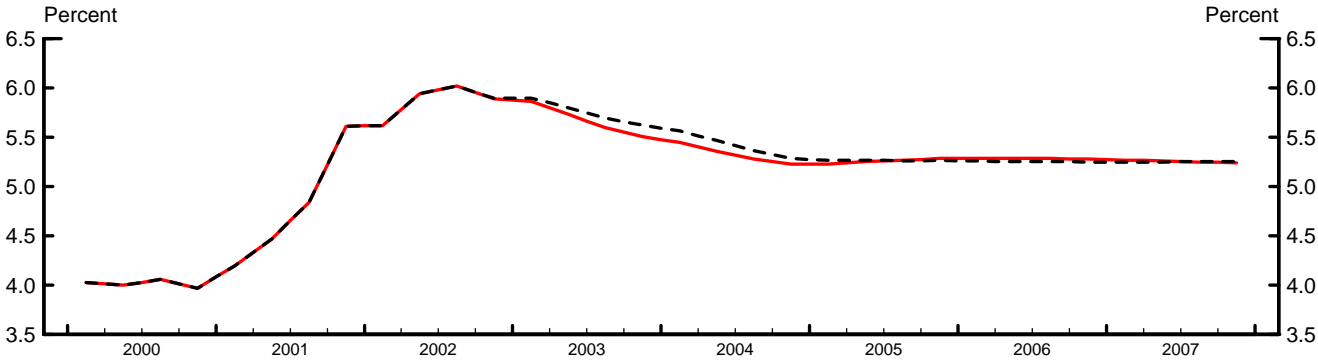
The solid line shows the path for the funds rate in the “perfect foresight” baseline chosen by a policy maker with a long-run inflation target for PCE inflation of about 1-1/4 percent and an equal distaste for output deviating from its potential and inflation deviating from its target. The perfect foresight path for the funds rate rises sooner but slightly more gradually than assumed in the Greenbook. With this increase in the nominal funds rate, the real funds rate rises along with its gradually increasing equilibrium value. By 2006, the real rate reaches its long-run equilibrium level of 3-1/4 percent. During the transition, spending expands a touch faster than potential output, putting the unemployment rate on a gradual descent to its natural rate. The economic slack over that period more than counters the inflationary impetus of the assumed depreciation of the dollar, keeping core PCE inflation near its assumed 1-1/4 percent goal.

(10) The volatility of stock prices over the intermeeting period highlights the possibility that investors may become more sensitive to taking on risk, perhaps leading to lower stock prices than in the Greenbook and adverse effects on spending. In the alternative scenario provided in Chart 5, an assumed increase in the equity risk premium produces a **stock market price decline** of about 20 percent over the second half of the year (the same as in the alternative stock market scenario in the Greenbook). In response to the contraction in aggregate demand associated with that decline in wealth, the perfect foresight policy maker responds relatively quickly, trimming the nominal funds rate about 1/2 percentage point by the end of the year (the dotted line). As a result, both unemployment and inflation track the baseline closely. Because of the persistent weakness in equity prices, the nominal funds rate remains more than 1/2 percentage point below the baseline level through 2000, eventually bringing the real rate to its new lower equilibrium level of about 2-3/4 percent.

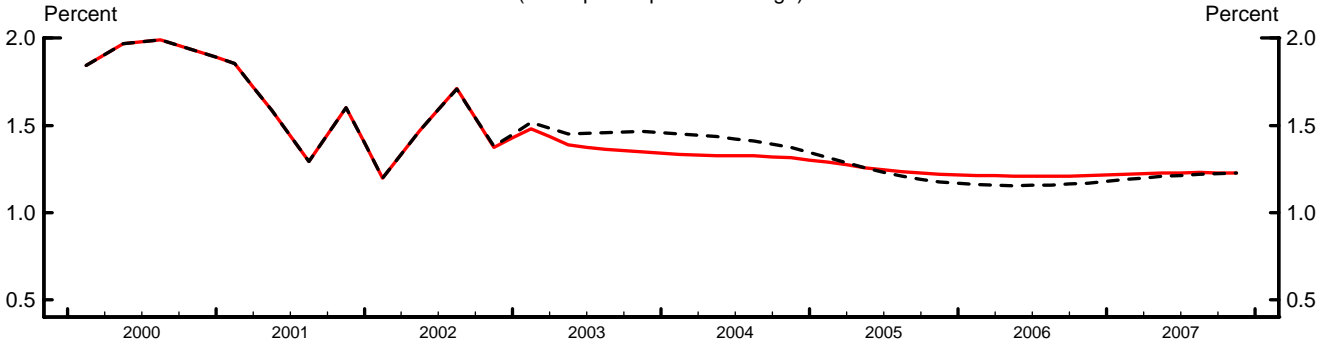
Chart 5 Stock Market Decline Scenario



Civilian Unemployment Rate



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

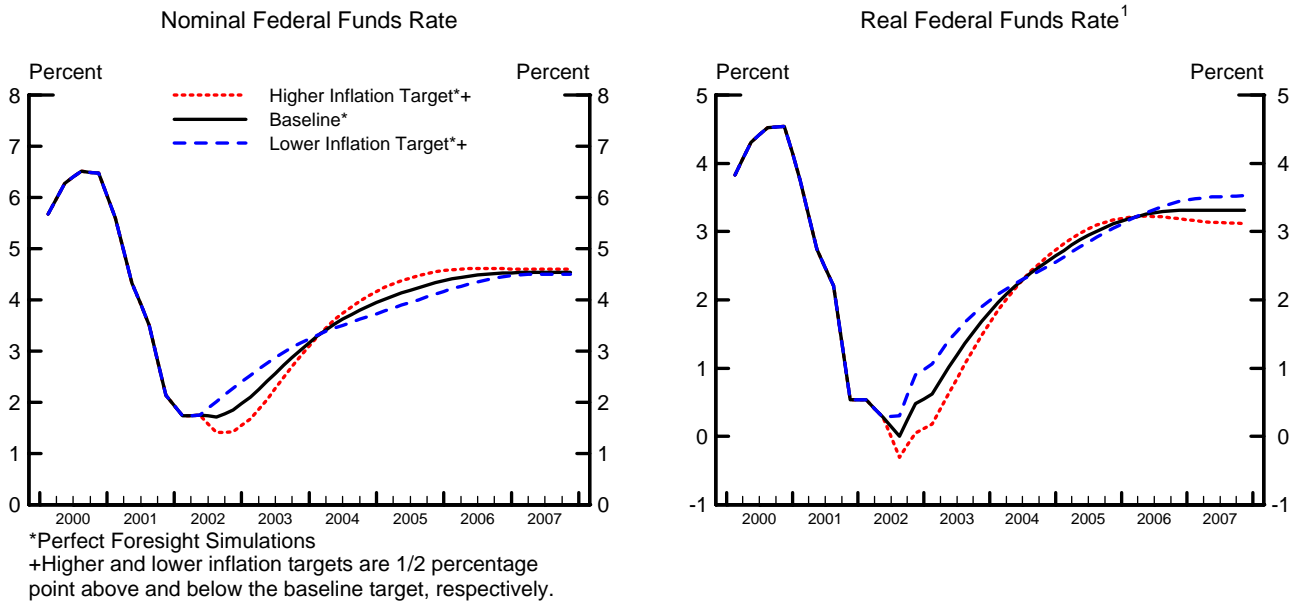


1. The real federal funds rate is calculated as the quarterly nominal funds rate minus the four-quarter lagged core PCE inflation rate as a proxy for inflation expectations.

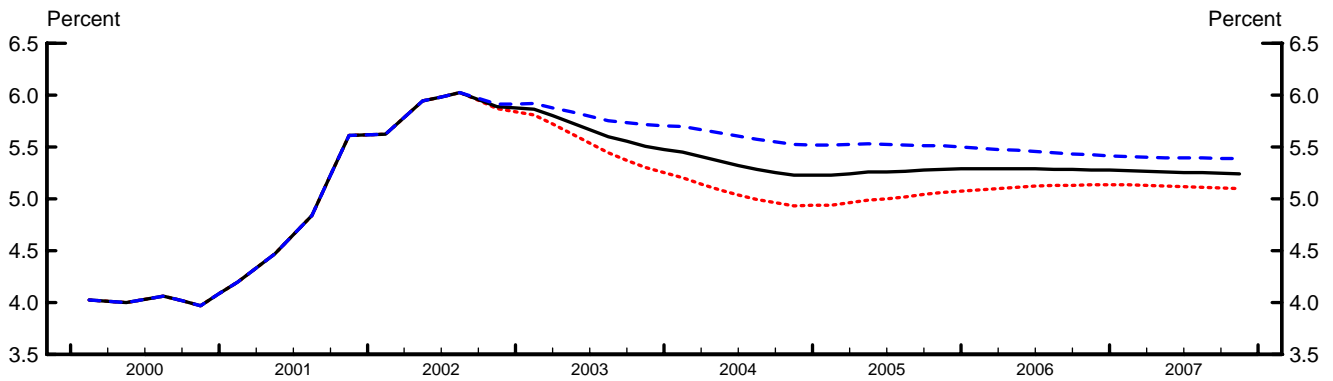
(11) These policy paths are obviously quite sensitive to the assumed long-term goal for inflation, a topic addressed in the **alternative inflation targets scenario** of Chart 6. The dashed and dotted line, respectively, consider the paths preferred by a policy maker with an inflation target $1/2$ percentage point lower and $1/2$ percentage point higher than the baseline goal of $1-1/4$ percent. Given the assumed equal weights on deviations of output and inflation, a perfect-foresight policy maker wishing to enforce an inflation goal of $3/4$ percent would raise the federal funds rate quickly and hold it at a higher level than in the baseline so as to maintain more slack in resource markets over the next five years. An inflation goal of $1-3/4$ percent entails putting the nominal funds rate below $1-1/2$ percent for the rest of this year.

(12) The staff forecast suggests that the current degree of policy accommodation must be maintained for a time to support reasonably vigorous economic expansion that prevents inflation falling further from already low levels. If the Committee agrees with this assessment and finds the associated outcome for inflation to be acceptable, it could elect to leave its **policy stance unchanged and retain a statement of balanced risks**. Given the current degree of slack in the economy, the Committee can wait until it sees more evidence that sustained strong growth is in train before beginning to remove the current degree of monetary policy ease. The Committee might hold rates unchanged, even if it saw a distinct possibility of a stronger outlook for economic activity than in the Greenbook, if it also viewed the inflation rate as quite unlikely to move higher for a considerable time or to be already at a level members viewed as on the low side of a working definition of price stability. While market participants seem a bit more glum about the economic outlook of late, they probably had outsized expectations to begin with, perhaps inclining the Committee to view the recent deterioration in market prices as a move toward more

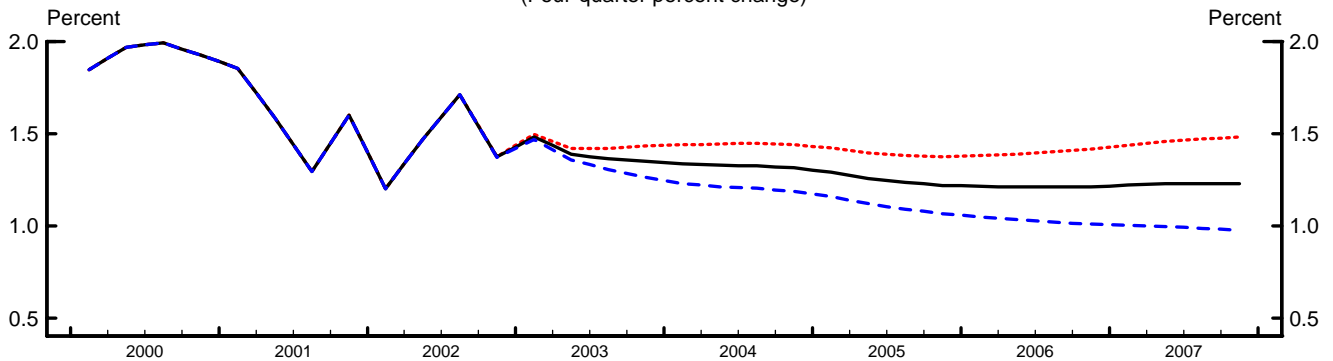
Chart 6
Alternative Inflation Targets



Civilian Unemployment Rate



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



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

appropriate valuations rather than as a harbinger of an unacceptably weak economy that would merit a policy response.

(13) The Committee could view the incoming data on slowing final demand and the increased skittishness of investors in U.S. financial markets as indicating that at the current funds rate the risks to the Committee's objective of sustainable economic growth had again begun to outweigh the risks to its goal of maintaining long-run price stability, suggesting that it opt to **state that the risks were weighted toward economic weakness while keeping its policy stance on hold**. Capital spending has yet to show convincing evidence of a sustained upturn, and recent news on retail sales and consumer confidence has been on the soft side. Indeed, the Committee may sense an increased risk of a severe deterioration in consumer and business confidence that could stem from terrorist attacks or international conflicts or from further news of accounting and corporate governance irregularities. In that same vein, the Committee may be concerned that substantially weaker equity prices may be in the cards, perhaps along the lines of the scenario discussed previously. Appreciably softer real growth than in the Greenbook would augment any tendency for the core inflation rate to decline, a tendency that would be accentuated if the Committee believed that the natural rate of unemployment was significantly lower than estimated by the staff. If the Committee views these arguments as applying with considerable force, it may want to consider easing policy 1/4 percentage point at this meeting. Market participants, however, do not put any weight on this possibility, raising the risk of an outsized, potentially counterproductive, reaction to such a move.

(14) Although the economic expansion has slowed in the second quarter, it has not stalled, and final demand appears to be growing at about the rate the staff expected at the May meeting. Production and employment are advancing, and the incoming data have pointed to a nascent turnaround in business spending on capital

equipment and software, which the Committee viewed as essential for a robust recovery. As a consequence, with both monetary and fiscal policy quite stimulative, the Committee may see reasonably strong growth in the second half of the year as now somewhat more assured and view its concerns about the foreseeable future beginning to center more on the long-run inflation risks inherent in its policy stance. Under these circumstances, the Committee could choose **to keep policy unchanged but move to a balance of risks tilted toward inflation**. Although the Committee may not see an immediate policy adjustment as needed, it might anticipate having to start tightening its policy stance fairly soon and may want to convey that sense to market participants. The current real federal funds rate is much lower than staff estimates of its equilibrium value (as discussed in the box, “Estimates of the Equilibrium Federal Funds Rate,” on the next page). At some point, the prevailing real funds rate would set in motion an excessively robust economic boom that, if sustained, would lead inevitably to higher inflation. If the Committee thought the foreign exchange value of the dollar was now firmly on a downward trend, price pressures might be expected to mount as higher import prices give domestic producers the “pricing power” they have thus far been lacking. In such a case, the Committee might conclude that an immediate tightening of 25 basis points is warranted to start heading off inflationary momentum.

(15) Markets currently expect the Committee to refrain from altering its policy stance or its assessment of the risks at this meeting, so confirming this expectation would leave little imprint on financial prices, absent a surprise in the accompanying announcement. Choice of risks weighted mainly toward economic weakness would cause market participants to push back in time the advent of policy tightening and possibly lower the slope of the subsequent trajectory of the funds rate as well. Conversely, a switch to a preponderance of risks weighted toward heightened inflation

Estimates of the Equilibrium Real Federal Funds Rate

In this Bluebook we have made two sets of changes to our estimates of the equilibrium real federal funds rate that are displayed in Chart 7.

First, the technique used to extract the persistent components of the FRB/US model errors employed in the calculation of the FRB/US estimates has been changed. In past Bluebooks, the model errors were split into temporary and more persistent components using a centered moving average (in the case of the estimate based on historical data and the staff forecast) and a one-sided moving average (in the case of the estimate based on historical data only). Going forward, a more sophisticated detrending algorithm (a Hodrick-Prescott filter) will be used in both cases, with a two-sided version of the algorithm applied in the first case and a one-sided version in the second. As shown in the table, in the current quarter the new estimates are close to those reported in the May Bluebook, which were calculated using the old methodology. However, the new series differ more substantially from the old at times in the past.

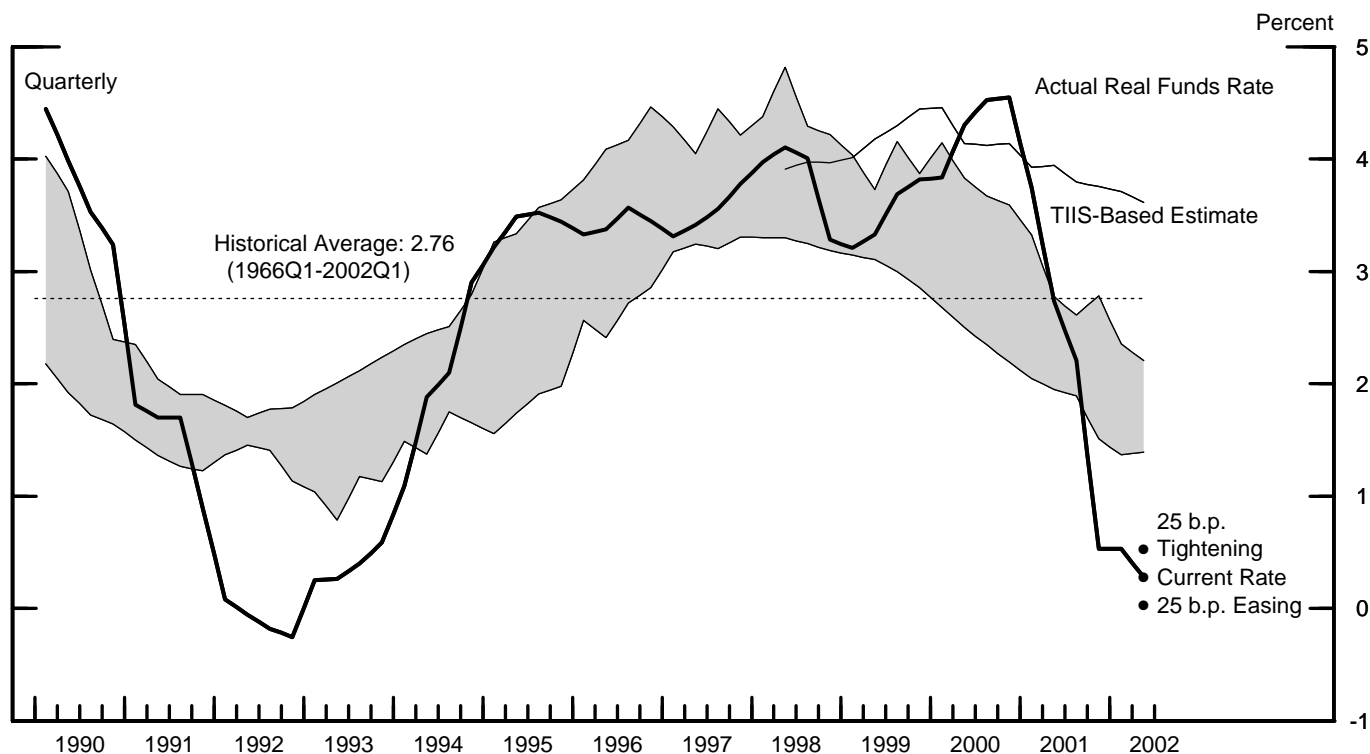
Second, we have added two new measures of the equilibrium real funds rate to the table and chart: an FRB/US measure that employs the two-sided detrending algorithm but does not make use of the staff forecast, and a measure based on the statistical filter that relies on a one-sided version of the filter and the historical data alone.

As a general rule, the one-sided measures that employ only the historical data should provide a better sense of how the equilibrium funds rate in a given quarter might have been seen in “real-time,” that is, based on information through that quarter. (The measures are not truly real-time estimates because, for example, the parameters of the models are based on all of the data, and the final revised data are used rather than the data available at the time.) By contrast, the two-sided measures use later data to improve the estimates of the equilibrium funds rate earlier in the period, with the two-sided measures that employ the staff forecast also allowing the staff’s assessment of the outlook to influence those estimates. Because the one-sided measures are not revised in light of later observations, they provide noisier estimates of the equilibrium funds rate.

Also note that the chart plots the estimate of the equilibrium real rate derived from indexed debt yields separately from the range of estimates produced by macroeconomic models.

pressures would advance the market’s expectation of the timing of policy firming and possibly increase the extent of anticipated additional tightening as well. The reaction of the expected funds rate path would, of course, be even more pronounced if policy were to be eased or tightened 25 basis points. Short-term interest rates could closely follow the markets’ revisions to the path of the expected funds rate, and the

Chart 7
Actual Real Federal Funds Rate and
Range of Estimated Equilibrium Real Rates



Note: The shaded range represents the maximum and the minimum values each quarter of six estimates of the equilibrium real federal funds rate based on a statistical filter and the FRB/US model. Real federal funds rates employ four-quarter lagged core PCE inflation as a proxy for inflation expectations, with the staff projection used for 2002Q2.

Equilibrium Real Funds Rate Estimates

| | <u>2000</u> | <u>2001</u> | <u>2002Q1</u> | <u>2002Q2</u> | <u>2003Q3</u> | Percent |
|---|-------------|-------------|---------------|---------------|---------------|---------|
| Statistical Filter | | | | | | |
| - Two-sided: | | | | | | |
| • Based on historical data* <i>May Bluebook</i> | 2.6 2.6 | 2.3 2.3 | 2.2 2.3 | 2.2 2.2 | -- -- | |
| • Based on historical data and the staff forecast <i>May Bluebook</i> | 2.4 2.5 | 1.9 2.1 | 1.7 1.9 | 1.7 1.9 | 1.6 1.9 | |
| - One-sided: | | | | | | |
| • Based on historical data* <i>May Bluebook</i> | 3.8 -- | 2.9 -- | 2.4 -- | 2.2 -- | -- -- | |
| FRB/US Model | | | | | | |
| - Two-sided: | | | | | | |
| • Based on historical data** <i>May Bluebook</i> | 2.9 -- | 2.1 -- | 1.5 -- | 1.4 -- | -- -- | |
| • Based on historical data and the staff forecast <i>May Bluebook***</i> | 3.1 2.5 | 2.5 1.7 | 2.3 1.7 | 2.2 2.0 | 2.3 2.0 | |
| - One-sided: | | | | | | |
| • Based on historical data** <i>May Bluebook***</i> | 3.6 3.6 | 2.3 1.8 | 1.4 1.3 | 1.4 1.4 | -- -- | |
| Treasury Inflation-Indexed Securities <i>May Bluebook</i> | 4.2 4.2 | 3.9 3.9 | 3.7 3.7 | 3.6 3.7 | -- -- | |

* Also employs the staff projection for the current and next quarters.

** Also employs the staff projection for the current quarter.

***The estimates reported in the May Bluebook are not comparable to the current estimates owing to the methodological changes reported in the text box.

immediate response of stock prices seems likely to be in the opposite direction. The reaction of bond yields is more difficult to predict. In the past few years, bond rates have often tended to move in the same direction as stock prices following policy announcements (as discussed on the box on the next page). If financial markets revert to the previous average pattern, however, bond rates would move in the same direction as the funds rate expectations, though by less.

(16) Domestic nonfinancial sector debt is projected on the Greenbook policy assumptions to expand at around a 6 percent rate over the last three quarters of the year, faster than the anticipated growth in nominal GDP over that period. After a surge this quarter, federal debt growth is seen as slowing sharply in the second half of the year, though remaining positive in association with continued federal deficits. The average growth of nonfederal debt should rise at about a 5-3/4 percent rate over the last three quarters of the year. Over this interval, household borrowing is likely to slacken compared with the first quarter, pulled down by an anticipated lower pace of home mortgage debt growth. Business borrowing, in contrast, is expected to pick up from its subdued first-quarter performance, as increases in capital spending outrun internal funds. With both banks and investors in financial markets being rather selective in advancing funds to businesses, the staff foresees credit restrictiveness for lower-quality borrowers as providing only a small degree of restraint to business spending. Although some deterioration for marginal household borrowers also has occurred, consumption is not likely to be appreciably restrained by credit conditions. The staff is projecting M2 growth of 5 percent from May to December of this year, faster than its 4 percent rate of expansion from December to May. With short-term interest rates little changed, growth of M2 for the four quarters of 2002 is expected to be 5 percent, about in line with the expansion in nominal GDP.

The Market Reaction to Policy Surprises

In principle, bond yields and stock prices should incorporate expectations of the path for policy rates—appropriately discounted and adjusted for risk—that will prevail over their lifetimes. Because the federal funds rate tends to move relatively smoothly through time, market participants would typically react to any current policy surprise by extrapolating some of that change into the future. Thus, a Committee decision that was not fully expected tends to (but does not always) shift the path of expected future short rates in the same direction.

In that case, and holding all else equal, it would be expected that a surprisingly tight (loose) policy decision would raise (lower) longer-term yields. Because investors should discount expected corporate earnings by that same expected path of short rates, surprisingly tight (loose) policy should lower (raise) equity prices. Over time, this should produce a negative correlation between bond yields and stock prices in periods when important news about monetary policy is being revealed. In fact, as shown in Table 1, bond yields and stock prices moved in the opposite direction—the upper left and lower right cells of the table—on 64 percent of the days that the Committee met or acted between meetings from 1988 to 1998.

But all else does not seem to have been equal since 1998. On days of FOMC meetings or intermeeting policy actions from 1999 to the present, the expected opposite reaction of stock prices and bond yields occurred less than 50 percent of the time. (Table 2). One reason that stock prices and bond yields sometimes move in the same direction seems to stem from the effect of changes in near-term policy expectations on investors' outlook for earnings growth. For example, near-term policy expectations dropped sharply following the unexpected policy easing on January 3, 2001, and the move seemed to buoy the confidence of equity market investors. Stock prices rallied sharply that day, and policy expectations farther in the future moved up significantly as well, perhaps on a view that higher equity prices would bolster future aggregate spending through a “wealth effect.” On net, the increase in policy expectations at longer horizons outweighed the drop in near-term policy expectations resulting in an appreciable rise in bond yields that day.

Table 1: **Changes in market quotes on days of FOMC meetings and intermeeting policy actions, 1988 to 1998, percent of days**

| | Stock prices rise | Stock prices fall |
|-------------|----------------------|----------------------|
| Yields fall | 37 | 17 |
| Yields rise | 19 | 27 |

Note: Stock prices are measured by the S&P 500 and bond yields are measured by the ten-year Treasury yield.

Table 2: **Changes in market quotes on days of FOMC meetings and intermeeting policy actions, 1999 to 2002, percent of days**

| | Stock prices rise | Stock prices fall |
|-------------|----------------------|----------------------|
| Yields fall | 27 | 27 |
| Yields rise | 27 | 20 |

Note: Stock prices are measured by the S&P 500 and bond yields are measured by the ten-year Treasury

Alternative Growth Rates for Key Monetary and Credit Aggregates

| | | M2 | | | M2 | M3 | Debt |
|------------------------|---------|------------|-----------|------------|---------------------|------|------|
| | | Lower 25bp | No change | Raise 25bp | Greenbook Forecast* | | |
| Monthly Growth Rates | | | | | | | |
| | Jan-02 | 2.6 | 2.6 | 2.6 | 2.6 | -1.2 | |
| | Feb-02 | 7.5 | 7.5 | 7.5 | 7.5 | 6.0 | |
| | Mar-02 | -0.7 | -0.7 | -0.7 | -0.7 | -0.5 | |
| | Apr-02 | -3.8 | -3.8 | -3.8 | -3.8 | -2.5 | |
| | May-02 | 13.9 | 13.9 | 13.9 | 13.9 | 10.8 | |
| | Jun-02 | 7.4 | 7.4 | 7.4 | 7.4 | 6.0 | |
| | Jul-02 | 5.9 | 5.5 | 5.1 | 5.5 | 7.0 | |
| | Aug-02 | 5.8 | 5.0 | 4.2 | 5.0 | 7.0 | |
| | Sep-02 | 6.3 | 5.5 | 4.7 | 5.5 | 7.0 | |
| | Oct-02 | 3.2 | 2.5 | 1.8 | 2.5 | 6.5 | |
| | Nov-02 | 4.5 | 4.0 | 3.5 | 4.0 | 6.5 | |
| | Dec-02 | 4.4 | 4.0 | 3.6 | 4.0 | 6.0 | |
| Quarterly Growth Rates | | | | | | | |
| | 2001 Q1 | 9.7 | 9.7 | 9.7 | 9.7 | 12.6 | 5.3 |
| | 2001 Q2 | 9.6 | 9.6 | 9.6 | 9.6 | 13.8 | 5.3 |
| | 2001 Q3 | 11.0 | 11.0 | 11.0 | 11.0 | 10.0 | 7.1 |
| | 2001 Q4 | 9.4 | 9.4 | 9.4 | 9.4 | 12.2 | 5.9 |
| | 2002 Q1 | 5.8 | 5.8 | 5.8 | 5.8 | 4.8 | 5.2 |
| | 2002 Q2 | 3.3 | 3.3 | 3.3 | 3.3 | 2.8 | 6.3 |
| | 2002 Q3 | 7.2 | 6.8 | 6.4 | 6.8 | 7.2 | 5.6 |
| | 2002 Q4 | 4.6 | 4.0 | 3.3 | 4.0 | 6.6 | 5.9 |
| Annual Growth Rates | | | | | | | |
| | 2000 | 6.1 | 6.1 | 6.1 | 6.1 | 9.3 | 5.0 |
| | 2001 | 10.3 | 10.3 | 10.3 | 10.3 | 12.7 | 6.0 |
| | 2002 | 5.3 | 5.0 | 4.8 | 5.0 | 5.5 | 5.9 |
| Growth From To | | | | | | | |
| | 2001 Q4 | May-02 | 4.9 | 4.9 | 4.9 | 4.1 | |
| | 2001 Q4 | Jun-02 | 5.3 | 5.3 | 5.3 | 4.4 | |
| | Dec-01 | May-02 | 3.9 | 3.9 | 3.9 | 2.5 | |
| | Dec-01 | Jun-02 | 4.5 | 4.5 | 4.5 | 3.1 | |
| | May-02 | Dec-02 | 5.4 | 4.9 | 4.4 | 6.7 | |
| | Jun-02 | Dec-02 | 5.1 | 4.5 | 3.8 | 6.8 | |

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

Directive and Balance-of-Risks Language

(17) Presented below for the members' consideration is draft wording for (1) the directive and (2) the “balance of risks” sentence to be included in the press release issued after the meeting (not part of the directive).

(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 ___ $\frac{1-3}{4}$ percent.

(2) “Balance of Risks” Sentence

Against the background of its long-run goals of price stability and sustainable economic growth and of the information currently available, the Committee believes that the risks continue to be balanced with respect to prospects for both goals [ARE WEIGHTED MAINLY TOWARD CONDITIONS THAT MAY GENERATE HEIGHTENED INFLATION PRESSURES] [ARE WEIGHTED MAINLY TOWARD CONDITIONS THAT MAY GENERATE ECONOMIC WEAKNESS] in the foreseeable future.

Exhibit 1
Money Aggregates

Seasonally adjusted

Strictly Confidential (FR)-
 Class II FOMC

June 24, 2002

| Period | M1 | M2 | nontransactions components | | M3 |
|--------------------------------|--------|--------|----------------------------|------------|--------|
| | | | In M2 | In M3 only | |
| | 1 | 2 | 3 | 4 | 5 |
| Annual growth rates(%): | | | | | |
| Annually (Q4 to Q4) | | | | | |
| 1999 | 1.9 | 6.3 | 7.8 | 11.2 | 7.7 |
| 2000 | -1.7 | 6.1 | 8.6 | 17.4 | 9.3 |
| 2001 | 6.8 | 10.3 | 11.3 | 18.3 | 12.7 |
| Quarterly(average) | | | | | |
| 2001-Q2 | 6.0 | 9.6 | 10.6 | 23.1 | 13.8 |
| Q3 | 16.0 | 11.0 | 9.6 | 8.1 | 10.0 |
| Q4 | 2.1 | 9.4 | 11.5 | 18.2 | 12.2 |
| 2002-Q1 | 5.8 | 5.8 | 5.8 | 2.7 | 4.8 |
| Monthly | | | | | |
| 2001-May | 7.5 | 6.0 | 5.6 | 33.9 | 14.7 |
| June | 9.7 | 10.9 | 11.2 | 20.5 | 13.9 |
| July | 13.9 | 9.2 | 7.9 | 1.2 | 6.6 |
| Aug. | 9.1 | 8.6 | 8.5 | -13.1 | 1.7 |
| Sep. | 55.1 | 25.2 | 16.8 | 21.1 | 23.9 |
| Oct. | -39.1 | -1.5 | 9.3 | 25.9 | 7.1 |
| Nov. | 3.0 | 10.3 | 12.3 | 21.0 | 13.7 |
| Dec. | 16.1 | 9.8 | 8.1 | 13.1 | 10.8 |
| 2002-Jan. | 3.3 | 2.6 | 2.4 | -9.3 | -1.2 |
| Feb. | 1.9 | 7.5 | 9.0 | 2.7 | 6.0 |
| Mar. | 2.9 | -0.7 | -1.8 | 0.0 | -0.5 |
| Apr. | -11.4 | -3.8 | -1.7 | 0.4 | -2.5 |
| May p | 6.2 | 13.9 | 15.9 | 4.1 | 10.8 |
| Levels (\$billions): | | | | | |
| Monthly | | | | | |
| 2002-Jan. | 1182.5 | 5466.6 | 4284.1 | 2554.4 | 8021.0 |
| Feb. | 1184.4 | 5500.6 | 4316.3 | 2560.2 | 8060.9 |
| Mar. | 1187.3 | 5497.2 | 4309.9 | 2560.3 | 8057.5 |
| Apr. | 1176.0 | 5479.8 | 4303.9 | 2561.1 | 8040.9 |
| May p | 1182.1 | 5543.2 | 4361.1 | 2569.9 | 8113.1 |
| Weekly | | | | | |
| 2002-May 6 | 1173.2 | 5516.9 | 4343.7 | 2562.5 | 8079.3 |
| 13 | 1168.7 | 5535.1 | 4366.5 | 2577.1 | 8112.3 |
| 20 | 1180.8 | 5546.2 | 4365.4 | 2563.9 | 8110.1 |
| 27 | 1194.1 | 5563.9 | 4369.9 | 2574.6 | 8138.5 |
| June 3p | 1196.7 | 5545.5 | 4348.8 | 2568.0 | 8113.6 |
| 10p | 1176.5 | 5553.3 | 4376.8 | 2559.5 | 8112.8 |

p preliminary

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 | 30-year | 5-year | 10-year | | | Fixed-rate | ARM |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 01 -- High | 5.99 | 3.66 | 5.51 | 5.30 | 5.96 | 6.12 | 4.91 | 5.11 | 5.68 | 5.99 | 3.59 | 3.61 | 8.20 | 5.65 | 7.24 | 6.86 |
| -- Low | 1.74 | 1.69 | 1.69 | 1.77 | 1.79 | 1.76 | 2.47 | 3.66 | 4.58 | 5.06 | 2.65 | 2.96 | 7.62 | 5.20 | 6.45 | 5.06 |
| 02 -- High | 1.80 | 1.80 | 1.85 | 2.12 | 1.97 | 1.79 | 3.69 | 4.94 | 5.69 | 6.00 | 3.31 | 3.54 | 8.18 | 5.67 | 7.18 | 5.26 |
| -- Low | 1.62 | 1.61 | 1.61 | 1.68 | 1.65 | 1.62 | 2.87 | 4.16 | 5.08 | 5.60 | 2.44 | 3.06 | 7.78 | 5.42 | 6.63 | 4.60 |
| Monthly | | | | | | | | | | | | | | | | |
| Jun 01 | 3.97 | -- | 3.56 | 3.56 | 3.74 | 3.82 | 4.18 | 4.91 | 5.51 | 5.83 | 2.95 | 3.28 | 7.97 | 5.54 | 7.16 | 5.81 |
| Jul 01 | 3.77 | 3.67 | 3.59 | 3.56 | 3.66 | 3.71 | 4.11 | 4.85 | 5.44 | 5.77 | 3.12 | 3.42 | 7.97 | 5.50 | 7.13 | 5.71 |
| Aug 01 | 3.65 | 3.54 | 3.44 | 3.39 | 3.48 | 3.54 | 3.82 | 4.60 | 5.24 | 5.61 | 3.05 | 3.34 | 7.85 | 5.31 | 6.95 | 5.71 |
| Sep 01 | 3.07 | 2.67 | 2.69 | 2.71 | 2.87 | 2.96 | 3.19 | 4.18 | 5.05 | 5.58 | 2.92 | 3.19 | 8.03 | 5.34 | 6.82 | 5.57 |
| Oct 01 | 2.49 | 2.27 | 2.20 | 2.17 | 2.31 | 2.40 | 2.79 | 3.93 | 4.86 | 5.41 | 2.75 | 3.10 | 7.91 | 5.34 | 6.62 | 5.28 |
| Nov 01 | 2.09 | 1.99 | 1.91 | 1.93 | 2.03 | 2.03 | 2.83 | 4.05 | 4.94 | 5.34 | 2.91 | 3.19 | 7.81 | 5.30 | 6.66 | 5.20 |
| Dec 01 | 1.82 | 1.71 | 1.72 | 1.82 | 1.83 | 1.84 | 3.12 | 4.52 | 5.40 | 5.77 | 3.28 | 3.54 | 8.05 | 5.56 | 7.07 | 5.23 |
| Jan 02 | 1.73 | 1.67 | 1.68 | 1.77 | 1.74 | 1.70 | 3.03 | 4.45 | 5.32 | 5.71 | 3.14 | 3.45 | 7.87 | 5.48 | 7.00 | 5.18 |
| Feb 02 | 1.74 | 1.74 | 1.76 | 1.86 | 1.82 | 1.76 | 3.01 | 4.36 | 5.24 | 5.62 | 2.91 | 3.32 | 7.89 | 5.43 | 6.89 | 5.03 |
| Mar 02 | 1.73 | 1.79 | 1.82 | 2.05 | 1.91 | 1.78 | 3.52 | 4.80 | 5.60 | 5.93 | 2.94 | 3.36 | 8.11 | 5.61 | 7.01 | 5.06 |
| Apr 02 | 1.75 | 1.72 | 1.75 | 1.97 | 1.87 | 1.76 | 3.40 | 4.69 | 5.49 | 5.87 | 2.64 | 3.16 | 8.03 | 5.59 | 6.99 | 4.96 |
| May 02 | 1.75 | 1.74 | 1.76 | 1.91 | 1.82 | 1.75 | 3.24 | 4.54 | 5.40 | 5.82 | 2.50 | 3.10 | 8.09 | 5.54 | 6.81 | 4.79 |
| Weekly | | | | | | | | | | | | | | | | |
| Apr 19 02 | 1.74 | 1.70 | 1.73 | 1.93 | 1.86 | 1.74 | 3.36 | 4.66 | 5.48 | 5.87 | 2.58 | 3.14 | 8.02 | 5.59 | 6.94 | 4.95 |
| Apr 26 02 | 1.74 | 1.67 | 1.73 | 1.90 | 1.84 | 1.74 | 3.28 | 4.59 | 5.41 | 5.82 | 2.53 | 3.10 | 7.94 | 5.53 | 6.88 | 4.91 |
| May 3 02 | 1.80 | 1.75 | 1.77 | 1.90 | 1.80 | 1.73 | 3.22 | 4.54 | 5.36 | 5.75 | 2.50 | 3.09 | 7.96 | 5.52 | 6.78 | 4.75 |
| May 10 02 | 1.73 | 1.75 | 1.77 | 1.88 | 1.80 | 1.75 | 3.22 | 4.55 | 5.39 | 5.77 | 2.51 | 3.10 | 8.04 | 5.54 | 6.79 | 4.80 |
| May 17 02 | 1.75 | 1.76 | 1.77 | 1.92 | 1.82 | 1.75 | 3.33 | 4.63 | 5.50 | 5.90 | 2.56 | 3.14 | 8.18 | 5.59 | 6.89 | 4.81 |
| May 24 02 | 1.72 | 1.72 | 1.75 | 1.91 | 1.82 | 1.74 | 3.25 | 4.52 | 5.40 | 5.85 | 2.51 | 3.11 | 8.13 | 5.55 | 6.81 | 4.85 |
| May 31 02 | 1.79 | 1.73 | 1.75 | 1.91 | 1.83 | 1.75 | 3.19 | 4.44 | 5.32 | 5.81 | 2.46 | 3.07 | 8.08 | 5.51 | 6.76 | 4.76 |
| Jun 7 02 | 1.76 | 1.74 | 1.75 | 1.90 | 1.82 | 1.74 | 3.12 | 4.37 | 5.29 | 5.81 | 2.47 | 3.08 | 8.05 | 5.47 | 6.71 | 4.71 |
| Jun 14 02 | 1.74 | 1.73 | 1.74 | 1.85 | 1.81 | 1.74 | 3.03 | 4.28 | 5.19 | 5.72 | 2.50 | 3.10 | 7.95 | 5.45 | 6.71 | 4.67 |
| Jun 21 02 | -- | 1.69 | 1.73 | 1.81 | 1.81 | 1.74 | 2.89 | 4.16 | 5.08 | 5.64 | 2.44 | 3.06 | -- | 5.42 | 6.63 | 4.60 |
| Daily | | | | | | | | | | | | | | | | |
| Jun 4 02 | 1.73 | 1.73 | 1.76 | 1.90 | 1.82 | 1.76 | 3.10 | 4.35 | 5.27 | 5.79 | 2.44 | 3.06 | 8.05 | -- | -- | -- |
| Jun 5 02 | 1.70 | 1.75 | 1.75 | 1.90 | 1.81 | 1.75 | 3.14 | 4.38 | 5.31 | 5.82 | 2.48 | 3.08 | 8.07 | -- | -- | -- |
| Jun 6 02 | 1.75 | 1.74 | 1.74 | 1.88 | 1.81 | 1.73 | 3.09 | 4.34 | 5.27 | 5.79 | 2.47 | 3.08 | 8.03 | -- | -- | -- |
| Jun 7 02 | 1.73 | 1.74 | 1.74 | 1.88 | 1.82 | 1.73 | 3.14 | 4.40 | 5.33 | 5.84 | 2.51 | 3.11 | 8.06 | -- | -- | -- |
| Jun 10 02 | 1.76 | 1.75 | 1.76 | 1.89 | 1.81 | 1.75 | 3.13 | 4.38 | 5.29 | 5.79 | 2.53 | 3.12 | 8.02 | -- | -- | -- |
| Jun 11 02 | 1.72 | 1.75 | 1.75 | 1.87 | 1.81 | 1.73 | 3.08 | 4.34 | 5.24 | 5.76 | 2.54 | 3.13 | 7.97 | -- | -- | -- |
| Jun 12 02 | 1.75 | 1.74 | 1.74 | 1.85 | 1.81 | 1.74 | 3.04 | 4.30 | 5.20 | 5.73 | 2.50 | 3.11 | 7.98 | -- | -- | -- |
| Jun 13 02 | 1.76 | 1.71 | 1.72 | 1.82 | 1.81 | 1.74 | 2.99 | 4.25 | 5.16 | 5.70 | 2.49 | 3.10 | 7.94 | -- | -- | -- |
| Jun 14 02 | 1.75 | 1.71 | 1.71 | 1.80 | 1.80 | 1.73 | 2.90 | 4.16 | 5.06 | 5.61 | 2.43 | 3.05 | 7.85 | -- | -- | -- |
| Jun 17 02 | 1.82 | 1.70 | 1.74 | 1.85 | 1.81 | 1.73 | 2.94 | 4.20 | 5.12 | 5.66 | 2.46 | 3.07 | 7.86 | -- | -- | -- |
| Jun 18 02 | 1.71 | 1.70 | 1.73 | 1.82 | 1.80 | 1.74 | 2.91 | 4.19 | 5.11 | 5.66 | 2.46 | 3.07 | 7.90 | -- | -- | -- |
| Jun 19 02 | 1.69 | 1.69 | 1.71 | 1.77 | 1.80 | 1.75 | 2.79 | 4.07 | 5.01 | 5.59 | 2.41 | 3.04 | 7.82 | -- | -- | -- |
| Jun 20 02 | 1.75 | 1.68 | 1.73 | 1.81 | 1.81 | 1.74 | 2.91 | 4.16 | 5.09 | 5.66 | 2.43 | 3.06 | -- | -- | -- | -- |

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.