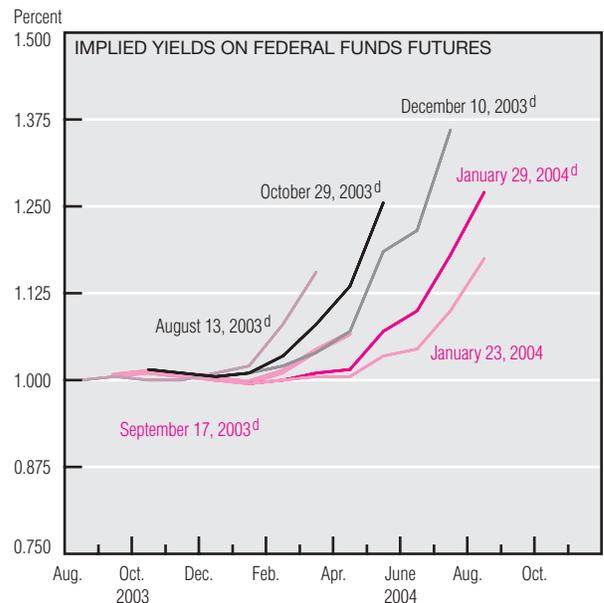
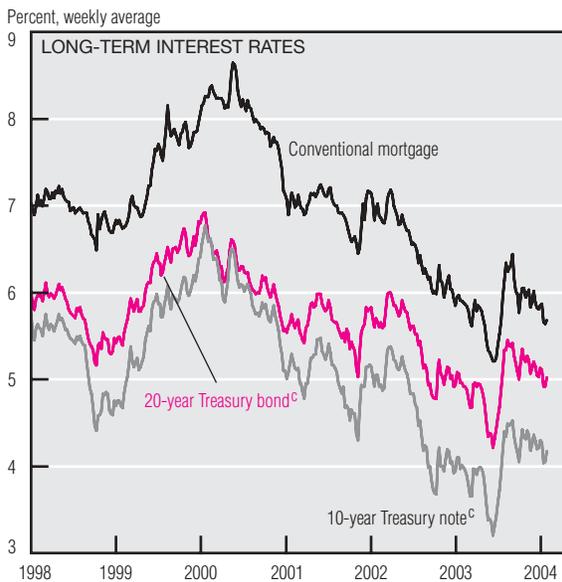
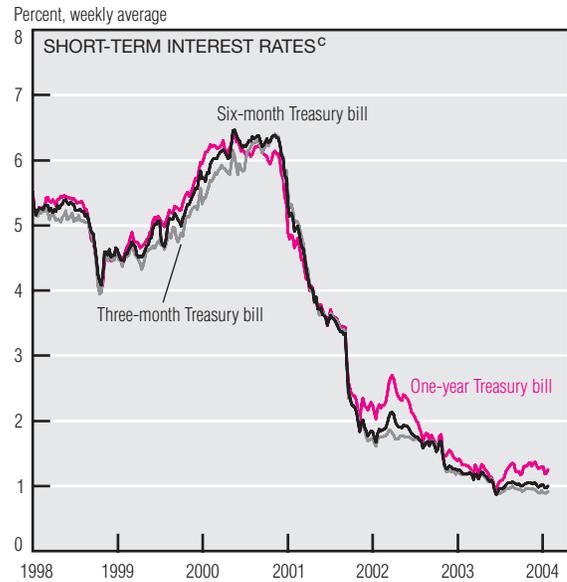
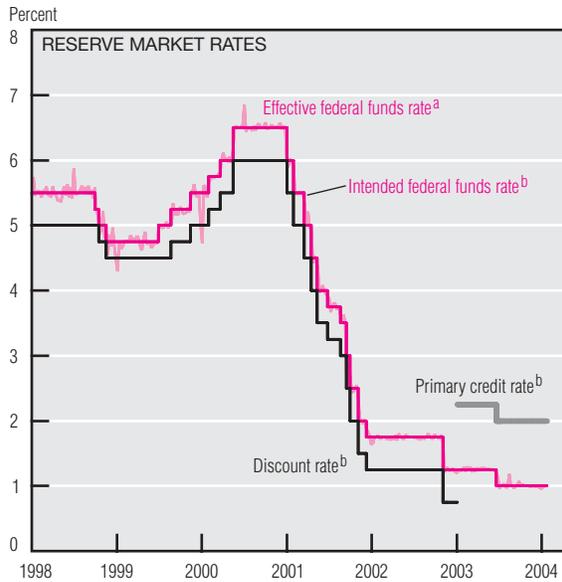


Money and Financial Markets



- a. Weekly average of daily figures.
 b. Daily observations.
 c. All yields are from constant-maturity series.
 d. One day after the FOMC meeting.
- SOURCES: Board of Governors of the Federal Reserve System, "Selected Interest Rates," *Federal Reserve Statistical Releases*, H.15; and Bloomberg Financial Information Services.

At its January 27–28 meeting, the Federal Open Market Committee (FOMC) left the federal funds rate target unchanged at 1% and the primary credit rate at 2%. Short-term interest rates and the federal funds rate have moved roughly in tandem, dropping significantly since late 2000. At the June 25 FOMC meeting, the funds rate was lowered to its current target level of 1%, and the yields on three-month, six-month, and one-year Treasury bills roughly followed suit. Just before that meeting, however, longer-term interest rates increased markedly. Although

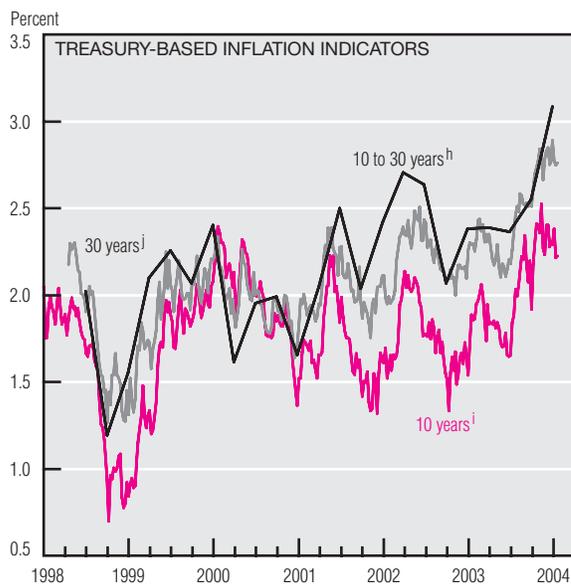
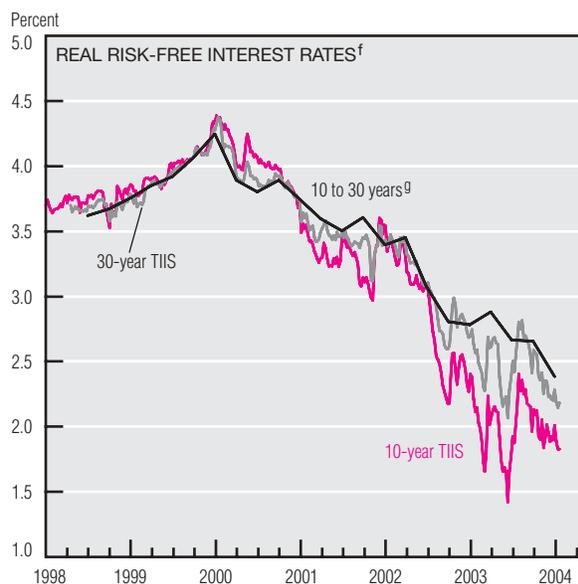
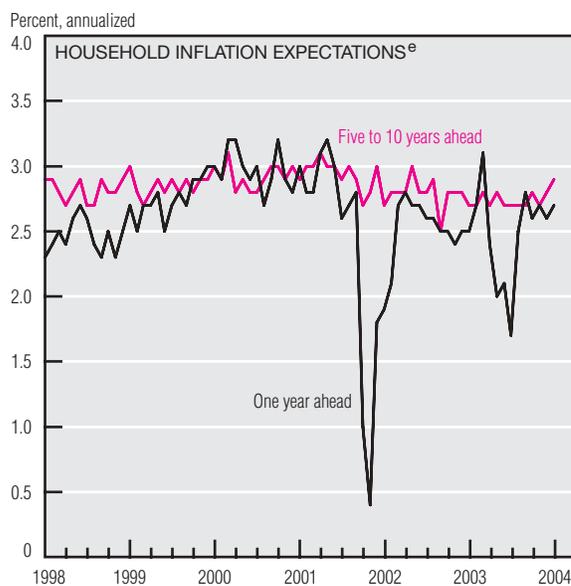
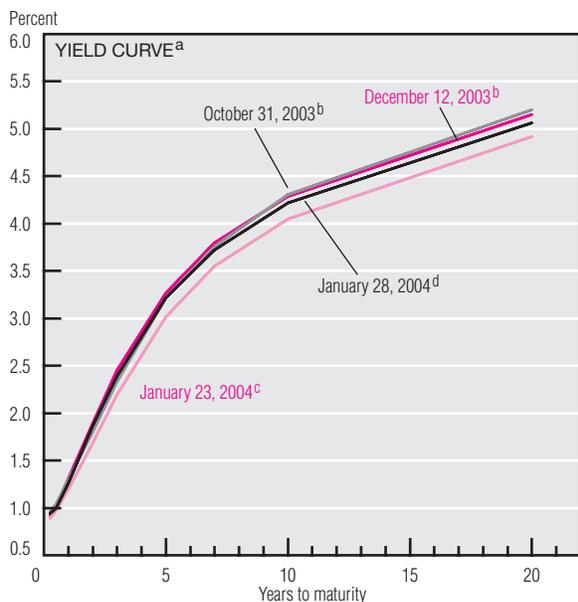
they have decreased slightly since then, they remain significantly above their June 2003 lows.

The best way to tell how interest rates, especially short-term rates, will move in the foreseeable future is to look at the federal funds futures market. Federal funds futures reflect where the market expects the fed funds rate to head. To gauge this, the market often attends to the exact wording of FOMC press releases, and changes in the phrasing can create nearly as much action as a movement in the rate itself.

Since its August 12, 2003 meeting, the FOMC has maintained that "policy accommodation can be maintained for a considerable period." After its January 27–28 meeting, it changed the wording slightly to state that "it can be patient in removing its policy accommodation." Fed funds futures moved up significantly after this statement was released.

One measure of policy accommodation considers the relation between long-term real interest rates and the funds rate. Policy should be more accommodating when inflation is lower
(continued on next page)

Money and Financial Markets (cont.)



a. All yields are from constant-maturity series.

b. The first weekly average available after the FOMC meeting.

c. The last weekly average available before the January 27–28 FOMC meeting.

d. Daily data, January 28 at close of business.

e. Mean expected change in consumer prices as measured by the University of Michigan's *Survey of Consumers*.

f. Treasury inflation-indexed securities (TIIS).

g. Implied forward rate derived from 10-year and 30-year TIIS. Quarterly data.

h. The implied inflation expectation 10–30 years out is the implied forward rate from nominal Treasury bonds minus the implied forward rate from TIIS. Quarterly data.

i. Yield spread: 10-year Treasury minus 10-year TIIS.

j. Yield spread: 30-year Treasury minus 30-year TIIS.

SOURCES: Board of Governors of the Federal Reserve System, "Selected Interest Rates," *Federal Reserve Statistical Releases*, H.15; University of Michigan; and Bloomberg Financial Information Services.

than its long-run target. The FOMC, however, has no such inflation target. Policy thus depends on two things that are difficult to measure: inflation expectations and real (that is, inflation-adjusted) rates.

There are few good measures of near-term inflation expectations. Nominal Treasury bills also depend on the real interest rate and expected inflation. If real interest rates stay the same, the yield curve provides one measure

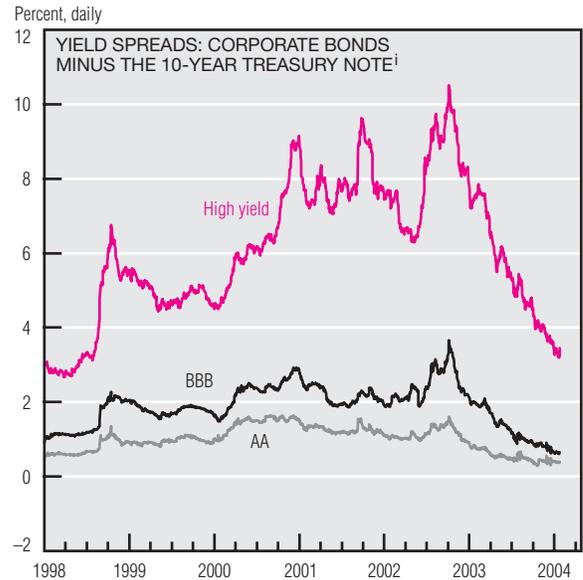
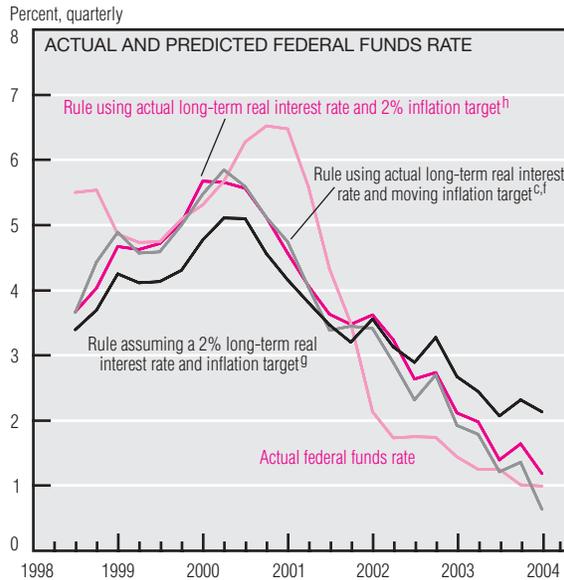
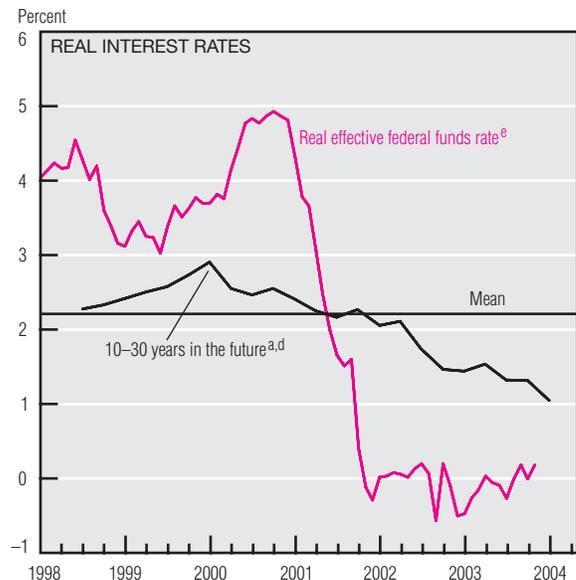
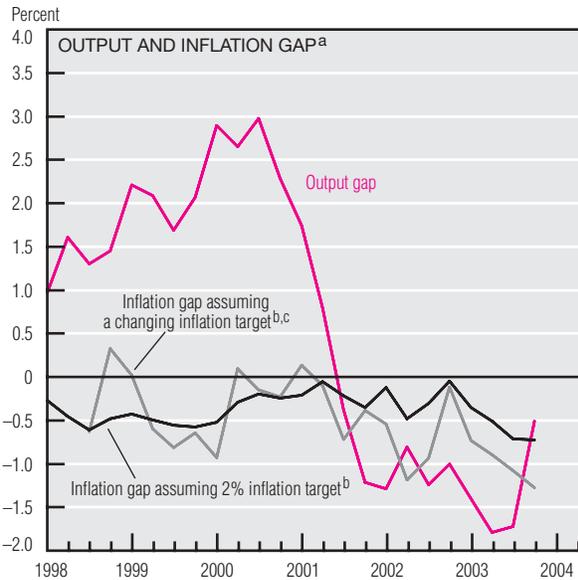
of inflation expectations. Real rate volatility, however, limits this measure's usefulness. The University of Michigan's *Survey of Consumers* suggests that households expect inflation of 2.5%–3% over the next year, but the series is volatile and many question its reliability. Assuming a constant long-run real rate can also be troublesome. Treasury inflation-indexed securities (TIIS), however, provide a market-based measure of future real

rates. Implied forward rates based on TIIS suggest that real rates are not constant, even over long horizons.

Subtracting real interest rates from nominal Treasuries gives market-based measures of expected inflation suggesting that inflation will drift up from its current levels and average 3% in 2014–34. This provides an indirect measure of the FOMC's inflation target, which has increased nearly

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Money and Financial Markets (cont.)



a. Quarterly data.

b. Core PCE chain price index.

c. The inflation target is the implied inflation expectations 10 to 30 years out. Inflation expectations are the implied forward rate from nominal Treasury bonds minus the implied forward rate from Treasury inflation-indexed securities (TIS).

d. Derived from Treasury inflation-indexed securities. It is adjusted to have the same mean as the real effective federal funds rate.

e. Effective federal funds rate deflated by the core PCE chain price index.

f. The Taylor Rule is modified by using actual long-term real interest rates and moving inflation targets.

g. The formula for the implied funds rate assumes a 2% long-term interest rate and inflation target. The formulation is from John B. Taylor, "Discretion versus Policy Rules in Practice," *Carnegie-Rochester Conference Series on Public Policy*, vol. 39 (1993), pp. 195–214.

h. The Taylor Rule is modified by using actual long-term real interest rates.

i. Merrill Lynch AA, BBB, and High Yield Master II indexes, each minus the yield on the 10-year Treasury note.

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; Congressional Budget Office; Board of Governors of the Federal Reserve System, "Selected Interest Rates," *Federal Reserve Statistical Releases*, H.15; and Bloomberg Financial Information Services.

1/2 percentage point over the past six months.

Is current monetary policy overly accommodative by historical standards? At first glance, policy seems particularly easy. The current funds rate is significantly (1.14 percentage points) lower than the Taylor rule, a benchmark widely used to describe past FOMC actions. This rule posits that past policy accommodation was balanced between weakness (the output

gap) and inflation's deviation from its target.

The Taylor rule usually assumes that long-term real interest rates are constant at 2%. If we replace this with the real rate that markets expect in the distant future, current policy is only 19 basis points below this historical benchmark. The 2% inflation target assumed by the Taylor rule, however, is also questionable. Replacing it with what markets expect inflation to

average in 2014–34 shows that policy is slightly tighter than this modified Taylor rule predicts.

The output gap also enters into this popular policy benchmark. The gap is especially difficult to measure, but sharp declines in yield spreads—hence the cost of business borrowing—suggest that the output gap may close, causing upward pressure on the funds rate.