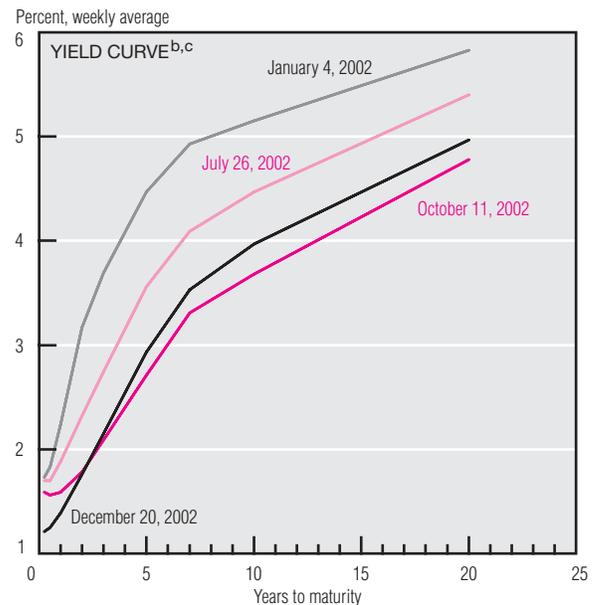
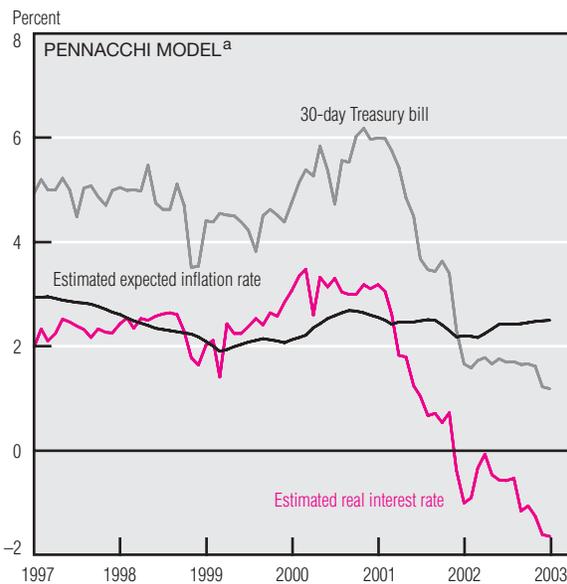
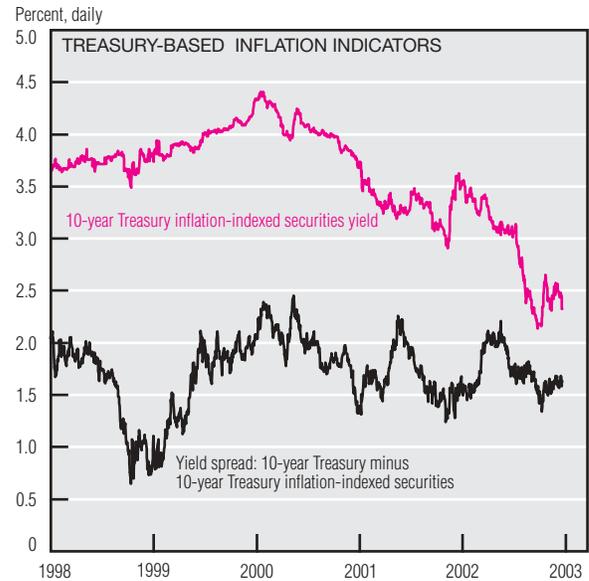
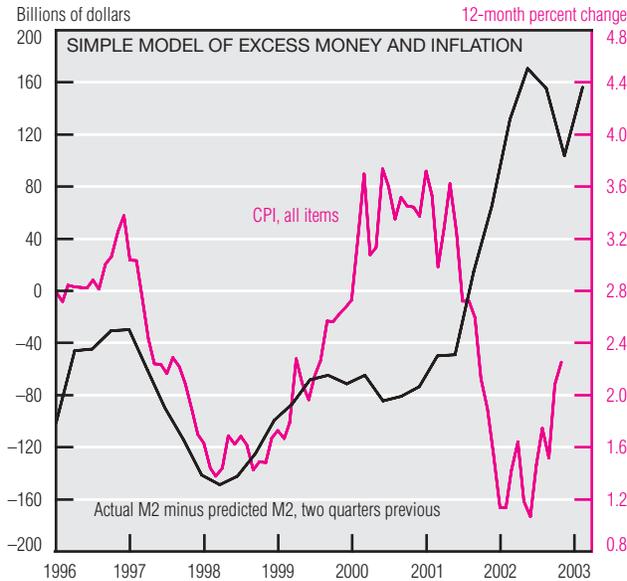


Money and Financial Markets



a. The estimated expected inflation rate and the estimated real interest rate are calculated using the Pennacchi model of inflation estimation and the median forecast for the GDP implicit price deflator from the *Survey of Professional Forecasters*. Monthly data.

b. All yields are from constant-maturity series.

c. Average for the week ending on the date shown.

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics; Board of Governors of the Federal Reserve System, "Selected Interest Rates," H.15, and "Money Stock Measures," H.6, *Federal Reserve Statistical Releases*; and Bloomberg Financial Information Services.

As a tool of monetary policy, changing interest rates is only the means to an end. One (some would say the only) goal of monetary policy is low, steady inflation. How can we tell if monetary policy is on track for that a goal? One way is to look directly at money; after all, the textbook cause of inflation is "too much money chasing too few goods." If more money is created than the amount people are willing to hold, prices can rise. A simple model of money demand predicted future inflation effectively in the late 1990s but has done poorly

since. The amount of money people are willing to hold varies considerably, which makes excess money a poor gauge of future inflation.

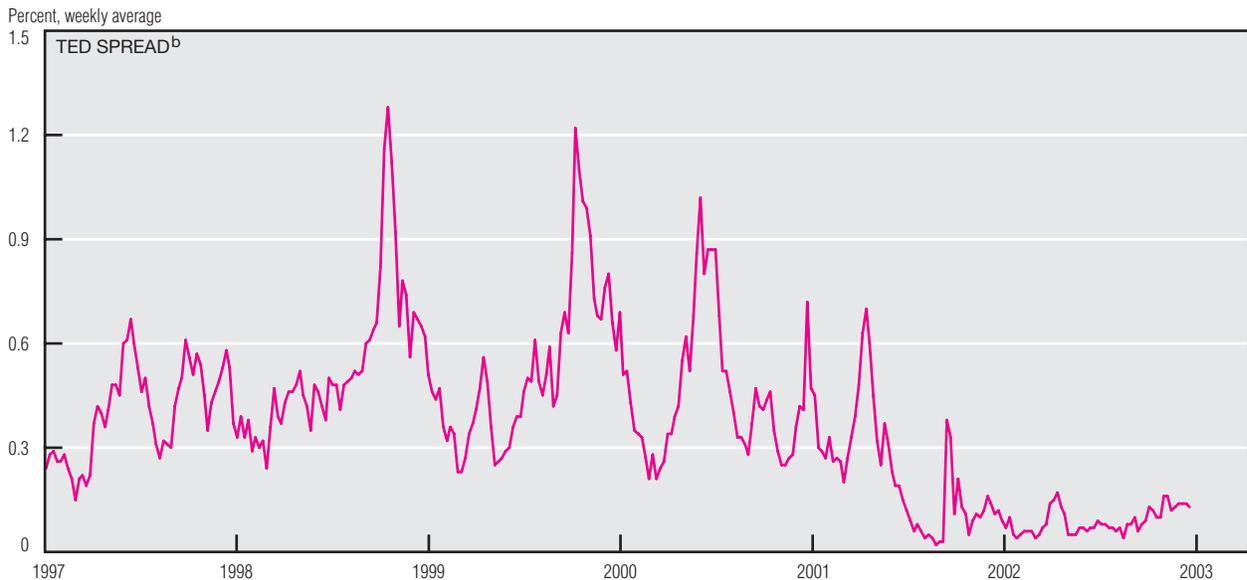
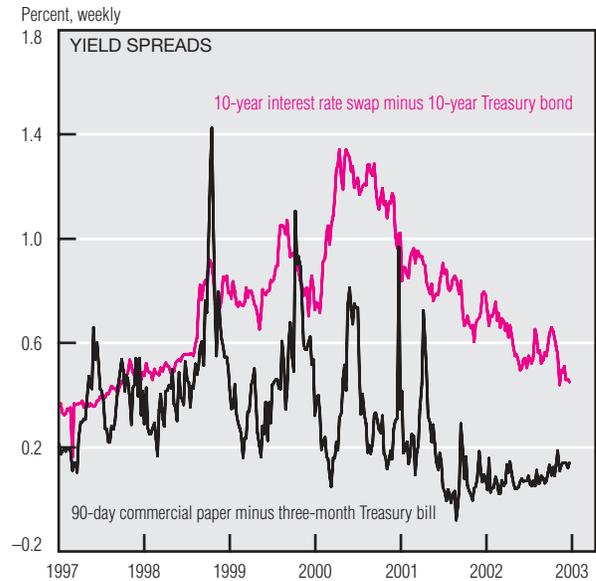
A different approach is to look to financial markets, which inherently entail consideration of the future. One gauge of markets' inflation expectations can be backed out by comparing yields on bonds that are protected against inflation with yields on nominal bonds that have no such protection. With this method, the yield spread between nominal 10-year Treasury bonds and 10-year, inflation-indexed securities provides a measure

of inflation, even though differences in taxation and liquidity make the measure less pure than one would like. This gauge of inflation offers a reason for optimism: Expected inflation remains just above 1.5%. Equally important, inflation expectations have fallen since spring, even though the Federal Open Market Committee never raised rates in what is conventionally called "tightening."

Of course, one approach to expectations is simply to ask people, as in a survey, or to combine those survey results with financial market data.

(continued on next page)

Money and Financial Markets (cont.)



a. Constant maturity.

b. Yield spread: 3-month euro minus 3-month constant-maturity Treasury bill.

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

Although the results naturally will be sensitive to how the combining is done, this approach provides another cause for optimism: Inflation is in the range of 2% to 3%.

The FOMC sets only one short-term interest rate directly, but financial markets produce a much richer set of rates. Since the beginning of 2002, yields on Treasury securities of all maturities have dropped substantially, creating a yield curve that has shifted downward. The curve remains steep, which historically has been a predictor of strong economic growth over the next four quarters.

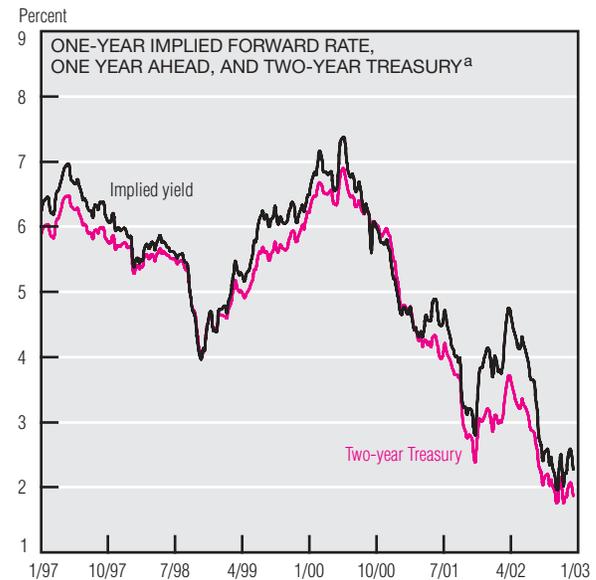
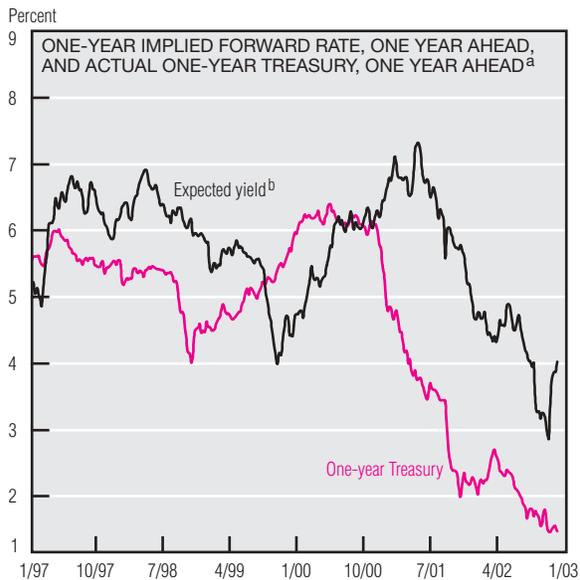
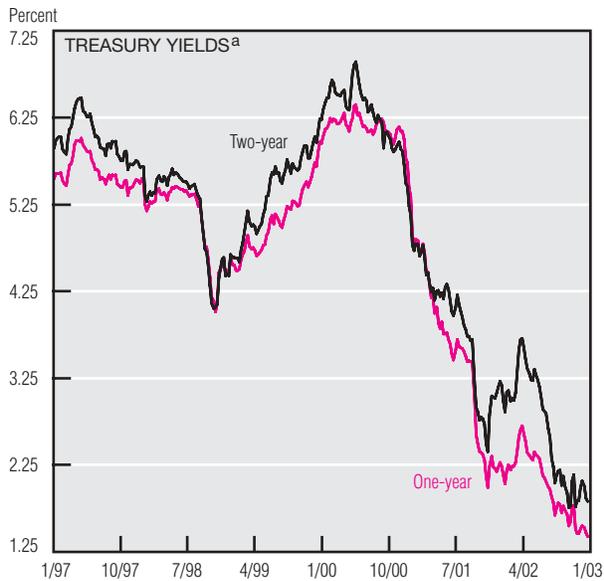
Treasury bond rates have not been the only ones dropping. Rates on corporate bonds and conventional mortgages have also fallen over the year. Municipal bond rates, however, perhaps because of fiscal concerns in state and local governments, have held fairly steady, opening up a wide spread over 10-year Treasuries.

Spreads between risky and safe bonds give us a measure of the market's perception of risk—fears of a downturn, increased commercial failures, and the like. At the long end, the spread between 10-year swap rates and 10-year Treasury bonds is

the lowest in years; at the short end, the spread between 90-day commercial paper and the three-month Treasury bill remains low, despite having inched up over 2002. The spread between Treasury and eurodollar rates (the TED spread) also measures uncertainty, albeit with a more international flavor. The theory is that in times of trouble, people prefer to put their assets in the U.S. rather than overseas, so the TED spread should increase during these times. This spread is considered a particularly clean measure because both rates are

(continued on next page)

Money and Financial Markets (cont.)



a. Constant maturities.

b. Shifted one year ahead; plotted on date of expectation.

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

on dollar-denominated assets, so the question of exchange rate risk does not raise its ugly head. It may be comforting to know that despite terrorist bombings, rumors of war with Iraq, and North Korea's weapons of mass destruction, the spread remains historically low.

In addition to such risk spreads, people also look at term spreads, that is, the spread between rates on Treasury securities with different maturities. While such spreads are often quite informative, they must be used with caution. For example, consider the yields on one- and two-year Treasuries. The expectation hypothesis of

the term structure lets us calculate the one-year implied forward rate. That is, using today's one-year and two-year rates, we can calculate what next year's one-year rate will be. The idea is that investors have a choice of buying a two-year bond or buying a one-year bond now and rolling it over into another one-year bond, and arbitrage ought to make the returns similar. So if two-year rates exceed one-year rates, one-year rates are expected to increase.

How well does this implied forward rate actually predict what one-year rates will be in one year? Not very. It can be considerably above or

below actual rates, may predict movements up when rates headed down, and generally inspires a lack of confidence as a predictor. What makes the case even stronger, however, is that the implied future rate is much more closely connected with today's two-year rate. So apparently the information contained in the implied forward rate is that two-year rates are higher than one-year rates today. It may be important to know that term premium is high, but this knowledge tells us little about what one-year rates will be in the future.