Monetary Policy

Percent

IMPLIED YIELDS ON FEDERAL FUNDS FUTURES

February 24, 1999

December 30, 1998

March 29, 1999

April 29, 1999

January 29, 1999

Percent, weekly average

RESERVE MARKET RATES

Intended federal funds rate

Discount rate

Effective federal funds rate

Percent, weekly average

LONG-TERM INTEREST RATES

10-year Treasury[a]

30-year Treasury[a]

Conventional mortgage

Percent, weekly average

SHORT-TERM INTEREST RATES

1-year T-bill[a]

3-month T-bill[a]
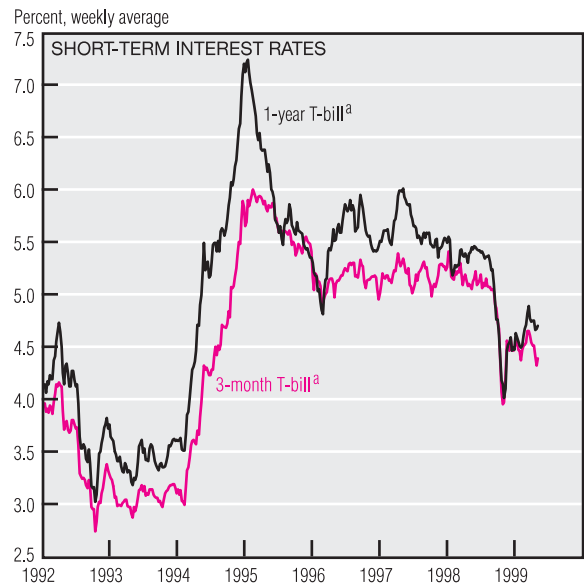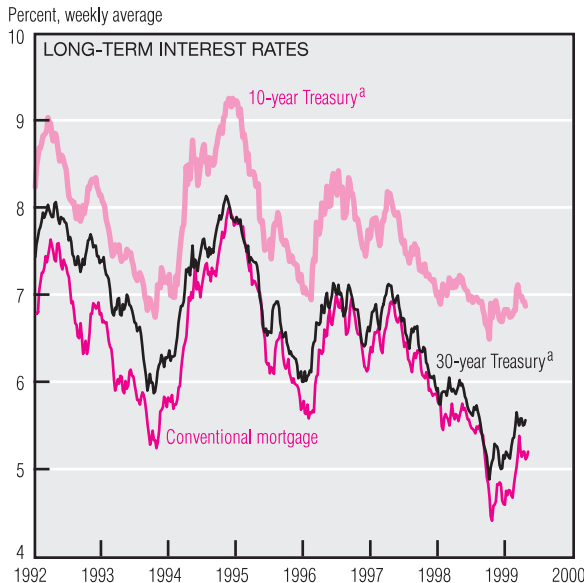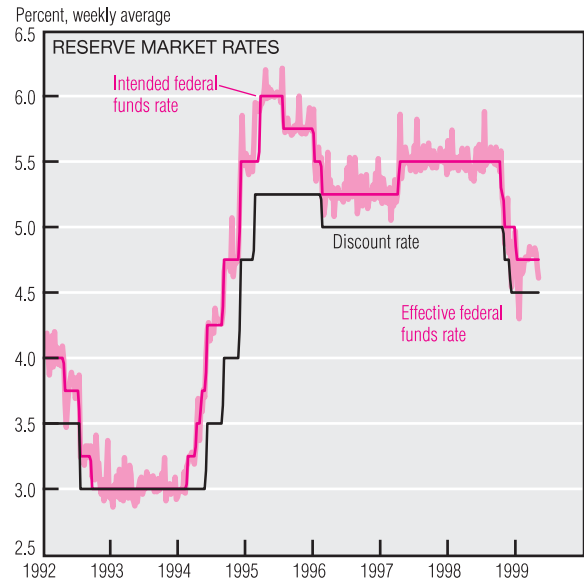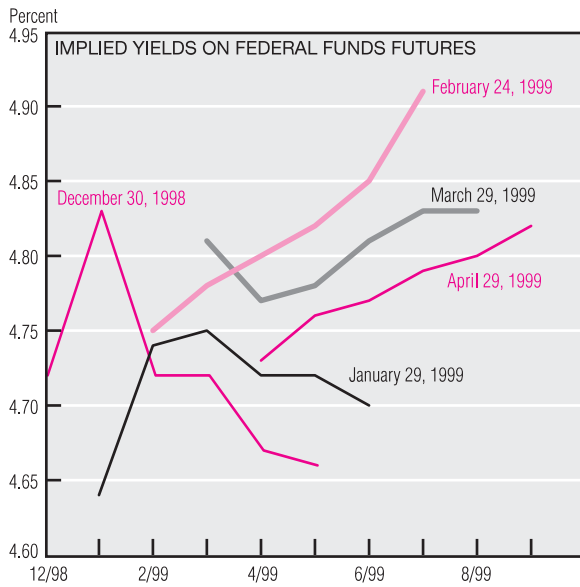
a. Constant maturity.
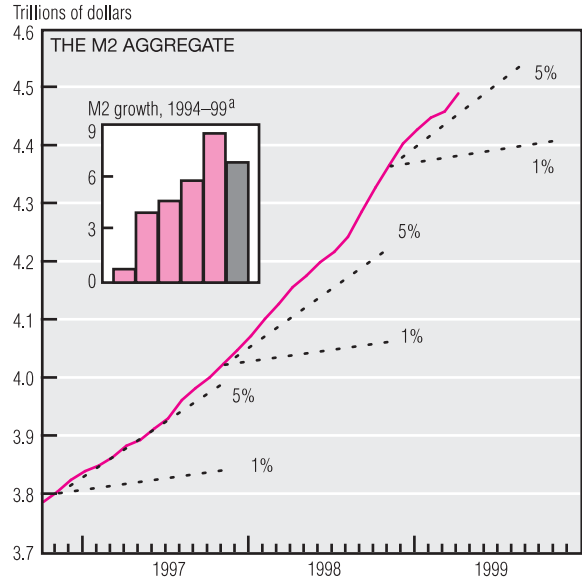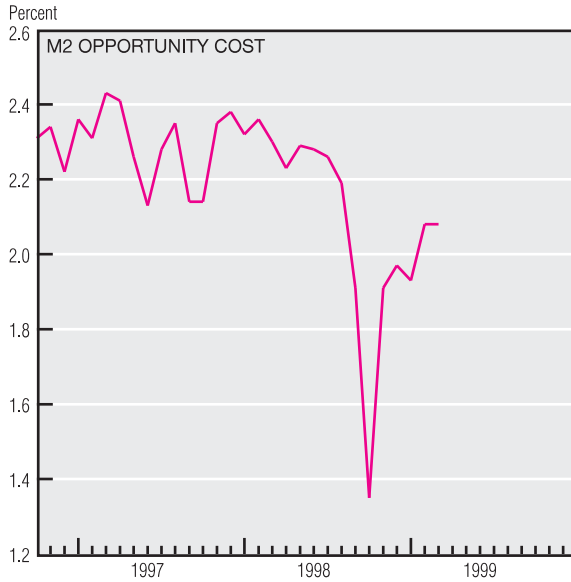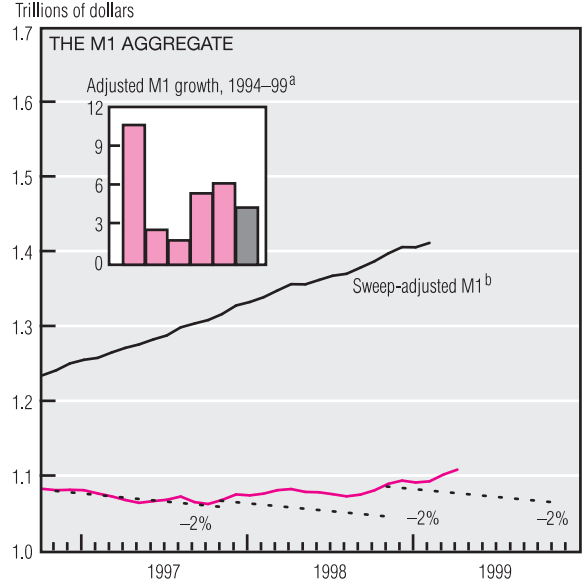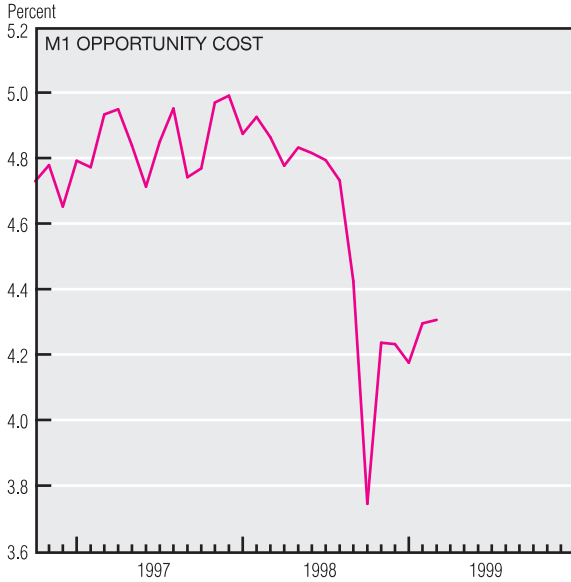SOURCES: Board of Governors of the Federal Reserve System; and the Chicago Board of Trade.

Implied yields on federal funds futures are an indication of the average expected future funds rate. As such, they also measure the average expectation of future monetary policy actions. Starting in late February, the marginal participant in federal funds futures markets seems to have been hedging against future rate increases, but without much conviction; at the end of April, the implied yield for the September future was only seven basis points above the current target rate of 4.75%.

Recall the policy actions of the latter part of 1998, including a decrease of 75 basis points in the target rate for federal funds between September 29 and November 17. In the nine-week span when these actions took place, however, long-term interest rates actually increased. Weekly average yields on 10- and 30-year Treasury bonds and conventional mortgages increased by 18, 12, and 22 basis points, after having fallen 67, 52, and 31 basis points, respectively, in the eight weeks before the policy actions.

Short-term interest rates, indexed by 3-month and 1-year Treasury bills, fell 21 and seven basis points during the period of the policy actions, after having fallen 33 and 61 basis points, respectively, in the previous eight weeks. The initial decline was largely due to a flight to quality that occurred when markets were shaken by Russia's moves to devalue the ruble.

The decline in short-term interest rates has implications for the opportunity cost of (and hence the

Monetary Policy (cont.)

Percent

M1 OPPORTUNITY COST

x-axis: 1997, 1998, 1999; y-axis: 3.6 to 5.2

Trillions of dollars

THE M1 AGGREGATE

Adjusted M1 growth, 1994–99[a]

inset bar chart: y-axis 0 to 12

Sweep-adjusted M1[b]

−2%   −2%   −2%

x-axis: 1997, 1998, 1999; y-axis: 1.0 to 1.7

Percent

M2 OPPORTUNITY COST

x-axis: 1997, 1998, 1999; y-axis: 1.2 to 2.6

Trillions of dollars

THE M2 AGGREGATE

M2 growth, 1994–99[a]

inset bar chart: y-axis 0 to 9

5%

1%

5%

1%

5%

1%

x-axis: 1997, 1998, 1999; y-axis: 3.7 to 4.6

a. Growth rates are percentage rates calculated on a fourth-quarter over fourth-quarter basis. 1999 growth rate for sweep-adjusted M1 calculated on a February over 1998:IVQ basis. 1999 growth for M2 calculated on an estimated April over 1998:IVQ basis.
b. Sweep-adjusted M1 includes an estimate of balances temporarily shifted from M1 to non-M1 accounts.
NOTE: Data are seasonally adjusted. Last plots for M1 and M2 are estimated for April1999. Dotted lines for M2 are FOMC-determined provisional ranges. All other dotted lines represent growth in levels and are for reference only.
SOURCE: Board of Governors of the Federal Reserve System.

demand for) various monetary aggregates. Opportunity cost is commonly measured as the difference between the yield on some market instrument—such as a 3-month government security—and the share-weighted average of yields paid on the components of money. Decreases in the opportunity cost of money are generally associated with increases in money growth.
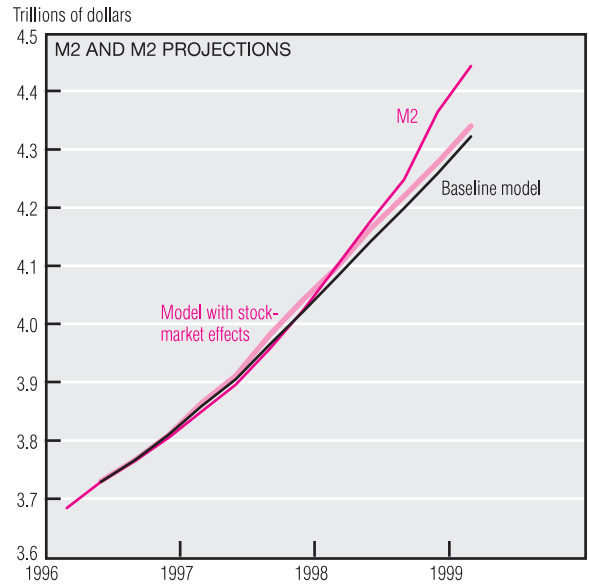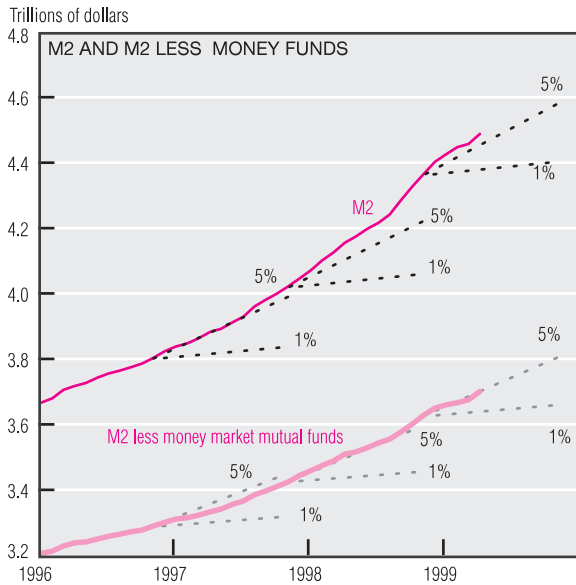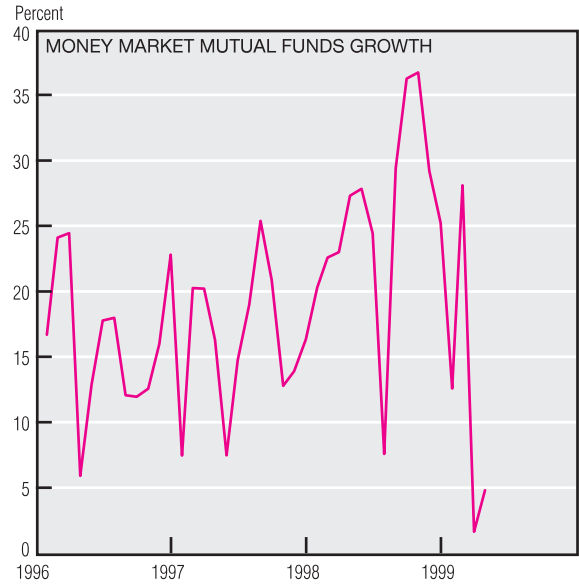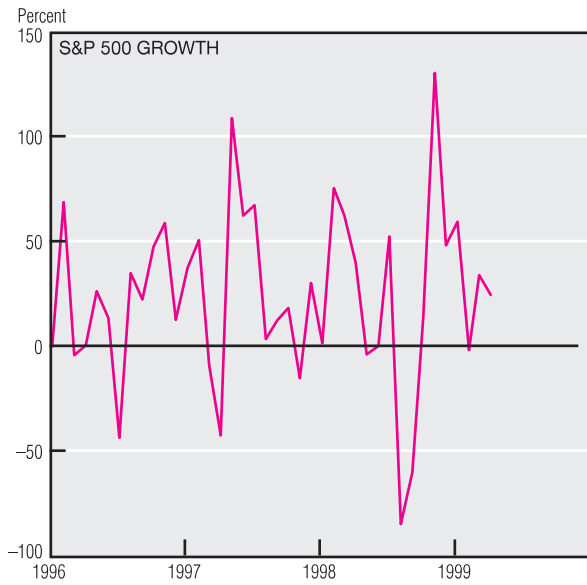
The opportunity costs of both M1 and M2 fell dramatically in the latter half of 1998, reflecting substantial declines in Treasury-bill yields. Rates paid on most components of M2 typically are sluggish in adjusting to declines in market rates; hence, opportunity cost generally declines immediately with market rate reductions, but eventually tends to rise as yields on M2 components adjust downward. Standard money-demand models tell us that as the opportunity cost of M2 falls, money demand should increase. Indeed, this seems to describe what we saw in late 1998.

Sweep-adjusted M1, which had grown less than 5% (annual rate) from January through August, increased at an annual rate near 7.8% from August to December. The rapid growth of M2 in late 1998, culminating in annual growth near 9%, was widely noted. The recent moderation in M2 growth may be due partly to the reversion of this component's opportunity cost to within 20 basis points of its mid-1998 level.

(continued on next page)

Monetary Policy (cont.)

Percent
S&P 500 GROWTH

Percent
MONEY MARKET MUTUAL FUNDS GROWTH

Trillions of dollars
M2 AND M2 LESS MONEY FUNDS

Trillions of dollars
M2 AND M2 PROJECTIONS

NOTE: Monetary aggregate data are seasonally adjusted. Growth rates are annualized monthly changes. Last plots for M2 and M2 less money market mutual funds are estimated for April 1999. Dotted lines for M2 are FOMC-determined provisional ranges. All other dotted lines represent growth in levels and are for reference only.
SOURCES: Board of Governors of the Federal Reserve System; and DRI/McGraw–Hill.

An additional explanation for M2's recent strength relates to the contemporaneous increase and variability of stock prices. Money funds, a sizable component of M2, often serve as temporary "parking lots" for funds used in financial transactions; hence, it is argued, M2 would be affected by the rapid rise in household holdings of bond and equity funds. Moreover, variability in stock prices often is associated with substantial portfolio rebalancing. Thus, one might expect money-fund balances to swell as transaction needs increase.

Clearly, money-fund growth has been substantial in recent years. Moreover, the behavior of M2 less money funds has been much more consistent with M2's history. Empirical research offers some support for this explanation, but the estimated effects do not account for much of 1998's M2 surge. Nonetheless, money-fund growth has slowed markedly in 1999 as stock market variability lessened relative to last year.
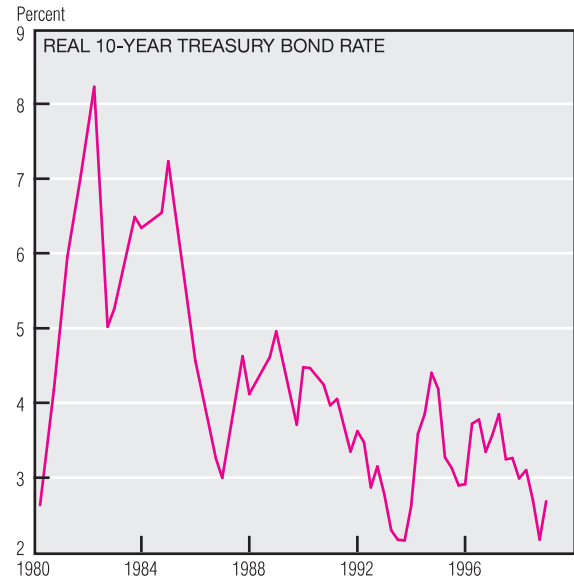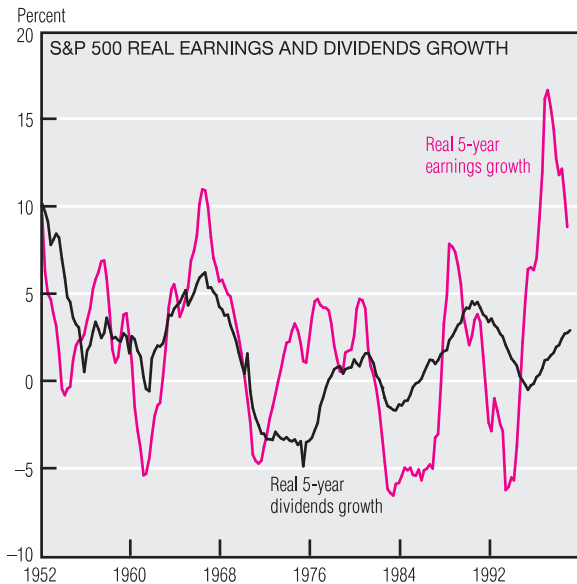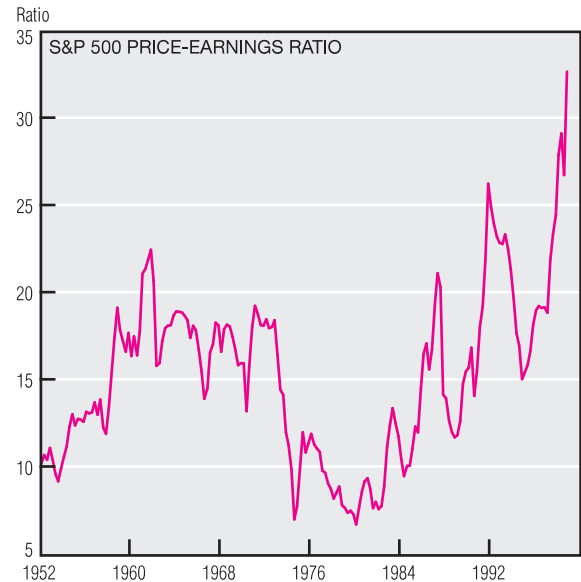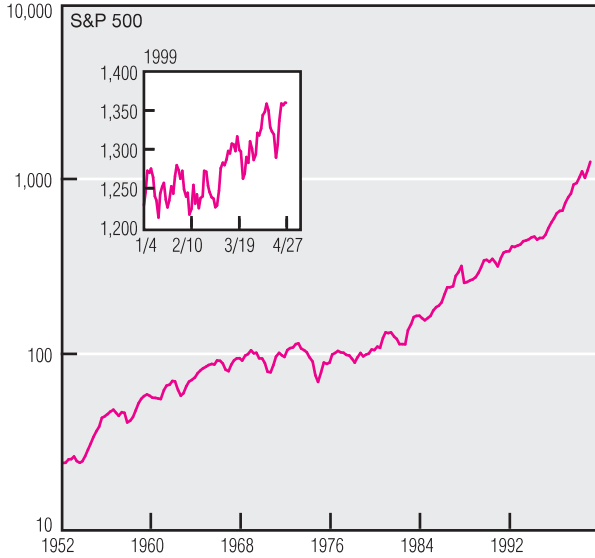
Fundamentally, a stock's price is the discounted value of its expected future dividends, which themselves derive from future earnings. When prospects for earnings growth are good, stock prices tend to rise. The price-earnings ratio or P/E (simply the stock price divided by earnings per share) tells investors how much they are paying for a company's earning power. The higher the P/E, the more investors are paying, and hence the more earnings growth they are expecting. The P/E of S&P 500 stocks has been rising over the past two years, approaching historical highs.

Monetary Policy (cont.)

Index, 1941–43 = 10, log scale

S&P 500

1999

S&P 500 PRICE-EARNINGS RATIO
Ratio

Percent
S&P 500 REAL EARNINGS AND DIVIDENDS GROWTH

Real 5-year
earnings growth

Real 5-year
dividends growth

Percent
REAL 10-YEAR TREASURY BOND RATE

NOTE: Real series are adjusted using the CPI, all items.
SOURCES: U.S. Department of Labor, Bureau of Labor Statistics; and DRI/McGraw–Hill.

One extraordinary fact associated with stock prices' ascent is the phenomenal earnings growth over the past five years, which is viewed largely as the product of corporations' widespread cost-cutting efforts and their adoption of more innovative management structures. Analysts' earnings projections reveal an expectation of continued benefits from corporate cost cutting and innovation. Moreover, earnings prospects provide a reasonable basis for the expectation of strong dividend growth for several years to come.

Nevertheless, even the most optimistic projections for earnings and dividends cannot adequately explain stock prices' current lofty levels. Analysts who are comfortable with the current price levels also believe that investors are discounting future dividends at rates lower than historical norms. These norms imply that investors have traditionally demanded a large premium for holding equities over bonds to compensate for the additional risk. Bull analysts see little additional risk of

holding equity over bonds, especially over long horizons. Indeed, economists could not reconcile such a large premium with their theories. Thus, some analysts who defend recent stock prices argue that investors are now discounting future stock returns at lower rates, more consistent with inherent risk. If this explanation accounts for the recent run-up in stock prices, then investors should not expect real returns on stocks to be as handsome in the future as they have been in the past.