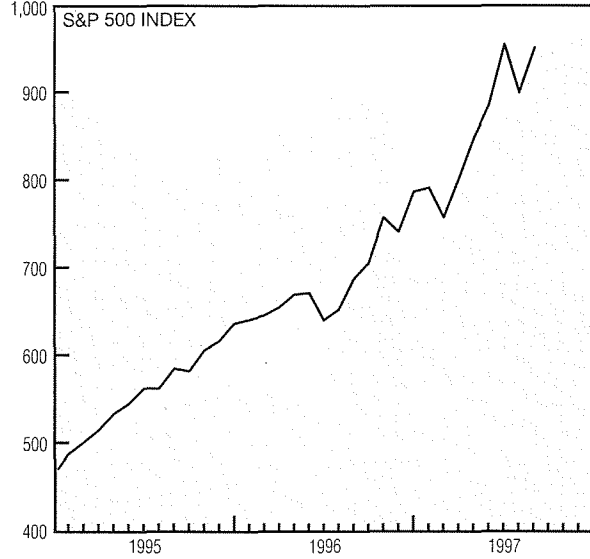
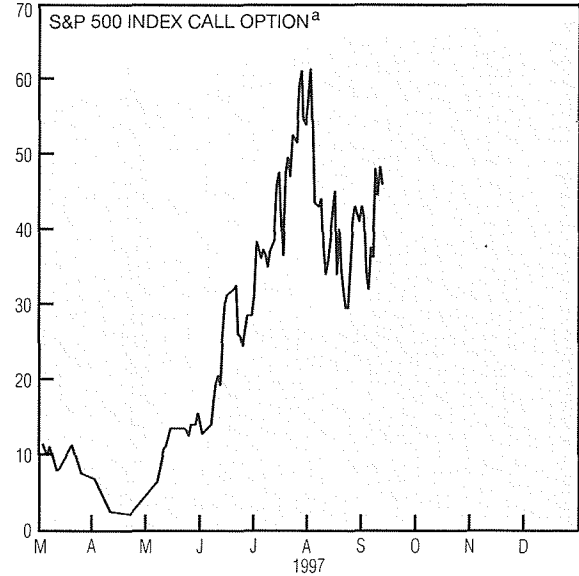


Stock Market Volatility

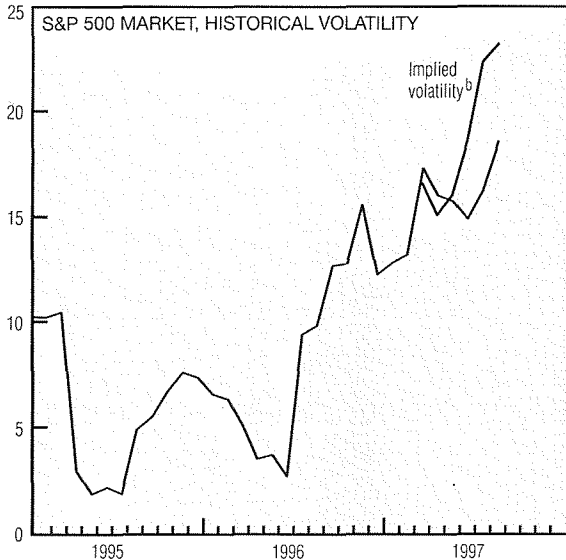
Capitalization-weighted index of 500 stocks



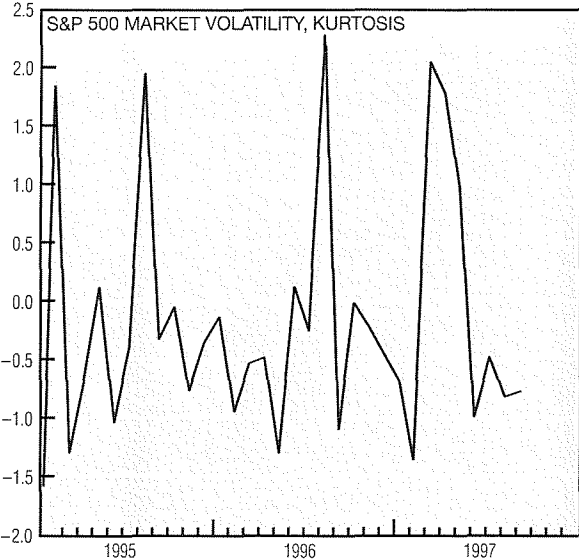
Value of option



Percent



Level



a. For December 1997 at a strike price of 950.

b. For the S&P 500 Index call option for December 1997 at a strike price of 950.

SOURCE: Bloomberg information service.

Although the stock market has risen sharply over the last three years, a casual examination indicates a bumpier path since the middle of 1996. A more structured approach looks at the standard deviation of the index, which shows a dramatic upturn starting in mid-1996 and continuing through 1997. The standard deviation, a measure of the size of market fluctuations, has increased by a factor of 10 since May 1995.

A more forward-looking approach to analyzing market volatil-

ity uses traded options. Call options, which give their owner the right (but not the obligation) to buy stock at a predetermined price, are particularly sensitive to volatility because it affects the likelihood that the option will expire "in the money"; that is, with the stock price above the strike price (the price at which the owner may buy the stock). For any given option, there is a volatility that will make the observed option price correct, termed the implied volatility. It too has generally been increasing in 1997, confirming the more

backward-looking historical pattern.

Another useful measure of volatility is stock market kurtosis. A high kurtosis level means a greater probability of extreme movements—both jumps and crashes. This is clearly reflected in the large price movements of early 1997, but the market seems to have settled down since then. Coupled with the increased standard deviation, lower kurtosis implies a more variable market, but one less likely to experience big swings.