

BY ROBERT J. BARRO

## IS THE MARKET TOO HIGH OR TOO LOW? MAYBE A LITTLE OF BOTH



**COMBO:**  
Today's stock prices might reflect both "irrational exuberance" and an overly gloomy estimation of growth prospects

Robert J. Barro is a professor of economics at Harvard University and a senior fellow of the Hoover Institution (rjbbweek@harvard.edu).

**A**re stocks way up or way down? One view is that the market is overpriced and will come down. This overpricing may reflect the "irrational exuberance" described by Yale University economist Robert J. Shiller in his recent book with that title. A second perspective is that the market has room to go up a lot more, as argued in the 1999 book *Dow 36,000* by James K. Glassman and Kevin A. Hassett. They allege the risks are exaggerated and growth prospects underestimated, leading to underpricing.

A third possibility is that prices are just right: The market is pricing future earnings efficiently in a complex environment. Federal Reserve Chairman Alan Greenspan seems to embrace this view, after earlier expressing concerns about irrational exuberance.

I think Greenspan's current position makes a lot of sense. We can evaluate the competing theories using some basic ideas about stock valuation. For any given level of earnings, stock prices should be higher if real interest rates are lower (measured by the rate of return, adjusted for inflation, available on risk-free alternative investments such as U.S. government bonds). Stock prices should also be higher if the risk premium required by investors goes down. That is, the price-earnings ratio would be higher. Finally, stock prices also depend on dividends—if dividends, adjusted for inflation, are expected to grow faster, the p-e ratio will be higher.

**A PUZZLE.** We can apply these three factors—the risk-free interest rate, the risk premium, and the growth rate of dividends—using numbers from Jeremy J. Siegel's book *Stocks for the Long Run*. From 1871 to 1997, the average real rate of return on U.S. stocks was 7.0% per year, while that on short-term government securities was 1.7% per year. Hence, the risk premium required by stock holders averaged 5.3%. The prospective growth rate of real dividends per share is harder to quantify because we really want to estimate the growth that would occur if corporations retained no dividends, but Siegel's numbers suggest around 1.0% per year. Using this figure along with a required real rate of return of 7.0%, we can compute a warranted p-e of about 17, which is close to the historical median of 14.

But there's a puzzle. Economists have not yet come up with a convincing explanation of why the risk premium on stocks is so high, especially since, as Siegel notes, stocks have

actually been less risky than government bonds for holding periods of 10 years or more. This observation by Siegel is the main content of the Glassman-Hassett book. They think that the proper risk premium on stocks is close to zero, so that the required real rate of return on stocks should approximate the risk-free rate, historically around 2% and currently about 4% (based on the yields on inflation-adjusted U.S. Treasury securities). When combined with prospective dividend growth of 1% per year, the warranted p-e turns out to be between 33 and 100.

**SPREADING REALITY.** This perspective suggests no reason to worry about recently observed p-e's around 40 for the Standard & Poor's 500-stock index. The conclusion is strengthened if one uses New Economy thinking to justify a prospective dividend growth rate above 1%. Thus, Glassman and Hassett predict a boom in stock prices as the market gradually catches on to the "reality" of low risk and high growth prospects.

Shiller's view, on the other hand, is that future values of the risk premium and growth rates will likely not differ much from their historical averages. For him, the high current p-e reflects irrational exuberance in the forms of overstated growth prospects and an understated risk premium, and much of the observed fluctuation in p-e's represents excess price volatility. He predicts that the bubble will eventually burst, sending the p-e ratio crashing down to normal.

Greenspan's view is apparently that growth prospects and the riskiness of stock returns are hard to pin down when new technologies are having a large and uncertain impact on productivity. This can create substantial volatility of p-e ratios. At any moment, the market price represents a reasonable aggregation of various beliefs, including those like Shiller who predict a crash and those like Glassman-Hassett who expect a boom. There is no reason to think that the resulting price is systematically too high or too low.

This conclusion forces me to remember that I was once interviewed by members of a major financial firm to see whether I might like to abandon my ivory tower academic life to become their chief economist. They said, however, that if I worked on Wall Street, I would have to go beyond the position that financial markets were efficient. I decided to continue working in ivory towers.