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What Determines Price-Earnings Ratios?

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by William Beaver and Dale Morse

What Determines Price-Earnings Ratios?

► Recent studies on the behavior of earnings growth over time raise doubt about the ability of past growth to explain differences in price-earnings ratios. Either future growth is difficult to predict, or investors are basing their predictions on information other than past growth.

Grouping common stocks into portfolios on the basis of price-earnings ratios, the authors find that the initial P/E differences among the portfolios persist up to 14 years. Growth appears to explain little of the persisting P/E differences, however. Price-earnings ratios correlate negatively with earnings growth in the year of the portfolio's formation, but positively with earnings growth in the subsequent year, suggesting that investors are forecasting only short-lived earnings distortions.

Nor does risk supply the explanation for these differences. Although price-earnings ratios can vary either positively or negatively with market risk, depending on the market conditions in a given year, market risk is of little assistance in explaining the observed persistence in price-earnings ratios over periods longer than two or three years.

The authors conclude that the most likely explanation of the evident persistence in price-earnings ratios is not growth or risk, but differences in accounting method. ►

THE PRICE-EARNINGS ratio (hereafter P/E ratio) is of considerable interest, yet little is known about how it behaves over time or about the relative importance of the factors believed to influence its behavior. Differences in expected growth are commonly offered as a major explanation for differences in P/E ratios. Yet recent research raises doubt about this interpretation; past growth and analysts' forecasts appear to have little ability to explain subsequent growth.[1] Using a portfolio approach, we examine the behavior of P/E ratios and explore the ability of earnings growth (hereafter growth) and risk to explain P/E ratio differences across stocks. We find that, although differences in P/E ratios persist for up to 14 years, growth and risk appear to explain little of this persistency. In particular, growth appears to have virtually no effect beyond two years.[2]

Valuation Theory

Under perfect markets and certainty, the price of a security is equal to the present value of the future cash flows. Over an infinite horizon, the current price will reflect the stream of dividends. Under the further assumptions of (1) a constant dividend payout ratio (K), (2) constant growth in earnings per share (g) and (3) a constant riskless rate (r), P/E is given by the Gordon-Shapiro valuation equation:

$$P/E = \frac{K}{r - g} \quad . \qquad (1)$$

In a certainty world, earnings per share (E) can be defined as that constant cash flow whose present value is equivalent to the present value of the cash flows generated from current equity investment. Where the investment involves assets with finite lives, this definition implicitly reflects the fact that the value of the assets will depreciate over their lives.[3] We adopt this definition, which is often referred to as permanent earnings. Absent further investment, or if the earnings rate on future investment

1. Footnotes appear at end of article.

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