Chapter Eight Exercises

1. A company has a 20% return on equity, a 50% plowback rate, and earns $4 a share. Use the present value equation, $P = D/(R - g)$, where $g = (ROE)(\text{plowback rate})$, to calculate the dividend-price ratio, the earnings-price ratio, and the price-earnings ratio when the shareholder's required return is (a) 20 percent; (b) 14 percent. Now redo (a) and (b), assuming that the company increases its plowback rate to 60 percent. Explain why this increase in the plowback rate does or does not affect the price-earnings ratios.

2. IBI stock is selling for $70 a share. The company has $35 in assets per share and consistently earns a 20 percent return on its assets. This coming year, it is expected to earn an after-tax profit of $7 a share and to pay a dividend of $3.50 per share. Analyst 1 calculates the stockholders' return as $3.50/$70 = 0.05 (5 percent). Analyst 2 calculates the stockholders' return as $7/$70 = 0.10 (10 percent). Analyst 3 argues that the stockholders' return must equal the firm's profit rate, 20 percent. Explain and evaluate the logic behind each analyst's calculation. If you had to come up with a rough estimate of the shareholders' return using these data, what would your estimate be?

3. Consider a company that has 1 million shares outstanding, assets of A = $100 million, and a profit rate of $\rho = 15\%$, so that it will earn $15 million in profits during the coming year, E = $15 million. The company always retains one-third of its earnings for investment in new assets and uses the remainder to pay dividends at the end of each year. It has no debt and its assets increase each year by the amount of retained earnings. Its market price is always equal to its fundamental value. The shareholders' required rate of return is 10%. Use the dividend-discount model to determine the value of Tobin's q. Use the economic value added model to estimate the value of this firm.

4. A senior manager at Morgan Stanley argued that because shareholders own the firm, the value of their stock should equal the present value of the firm's current and future profits. Explain why this would be double counting, which exaggerates the value of shareholder stock.

5. Explain and evaluate this September 1986 analysis (the S&P 500 was 234.93):

    > Long-term Treasury bond rates now are running about 8% . . . let's assume that long Treasuries will be at 8% to 8.5% by mid-1987.
    >
    > The stock market has to compete with alternatives in the bond market. Thus, it's not surprising that there's a close connection between bond yields and P/E ratios on stocks.
    >
    > The P/E ratio implied by our interest rate guess, (12 to 12.5 times earning), when combined with an earnings estimate [for the S&P 500] of $17.50 for next year, suggests that present stock prices are fairly fully priced.