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FN 211: Practice Questions (Equity Valuation)

1. Micro Corp. just paid dividends of \$2 per share. Assume that over the next three years dividends will grow as follows, 5% next year, 15% in year two, and 25% in year 3. After that growth is expected to level off to a constant growth rate of 10% per year. The required rate of return is 15%. Calculate the intrinsic value using the multistage model.

$$\begin{aligned} \text{price} &= \frac{2(1.05)}{1.15} + \frac{2(1.05)(1.15)}{1.15^2} + \frac{2(1.05)(1.15)(1.25)}{1.15^3} + \frac{\frac{2(1.05)(1.15)(1.25)(1.1)}{.15 - .1}}{1.15^3} \\ &= \$49.31 \end{aligned}$$

2. Corporation paid a dividend yesterday for \$1.50. They expect to pay dividends annually at a constant 6% annual growth rate indefinitely. If the required rate of return on this investment is 12%, what is the current value of this common stock?

Using the DDM: $P = \$1.50(1.06) / (.12 - .06) = \$1.59/.06 = \$26.50$

3. Tayco Corporation has just paid dividends of \$3 per share. The earnings per share for the company was \$4. If you believe that the appropriate discount rate is 15% and the long term growth rate in dividends is 6%, and earnings is 6%, the firm's P/E ratio is

$$P/E = \left[\frac{\frac{3(1.06)}{4(1.06)}}{.15 - .06} \right] = 8.33$$

4. Consider a firm that has just paid a dividend of \$2. An analyst expects dividends to grow at a rate of 8% per year for the next five years. After that dividends are expected to grow at a normal rate of 5% per year. Assume that the appropriate discount rate is 7%.

Year 1 Dividends = $2(1 + .08) = \$2.16$

Year 2 Dividends = $2(1 + .08)^2 = \$2.33$

Year 3 Dividends = $2(1 + .08)^3 = \$2.52$

Future price of stock in year 5 = $P_5 = D_6/(k - g)$

where g is the normal growth rate = 5%

$D_6 = 2(1 + .08)^5(1 + .05) = \3.087

$P_5 = 3.087/((.07 - .05)) = \154.35

The present value today of dividends from years 1 to 5 =

$2.16/(1.07) + 2.33/(1.07)^2 + 2.52/(1.07)^3 + 2.72/(1.07)^4 + 2.94/(1.07)^5 = \10.28