Chapter 7

CT

1. The value of any investment depends on its cash flows; i.e., what investors will actually receive. The cash flows from a share of stock are the dividends.

2. Investors believe the company will eventually start paying dividends (or be sold to another company).

3. In general, companies that need the cash will often forgo dividends since dividends are a cash expense. Young, growing companies with profitable investment opportunities are one example; another example is a company in financial distress. This question is examined in depth in a later chapter.

4. The general method for valuing a share of stock is to find the present value of all expected future dividends. The dividend growth model presented in the text is only valid (i) if dividends are expected to occur forever, that is, the stock provides dividends in perpetuity, and (ii) if a constant growth rate of dividends occurs forever. A violation of the first assumption might be a company that is expected to cease operations and dissolve itself some finite number of years from now. The stock of such a company would be valued by the methods of this chapter by applying the general method of valuation. A violation of the second assumption might be a start-up firm that isn’t currently paying any dividends, but is expected to eventually start making dividend payments some number of years from now. This stock would also be valued by the general dividend valuation method of this chapter.

Problems

1. \( P_0 = \frac{D_0 (1 + g)}{(R - g)} = \frac{$2.00 (1.05)}{(.12 - .05)} = $30.00 \)
   \( P_3 = \frac{D_3 (1 + g)}{(R - g)} = \frac{D_0 (1 + g)^4}{(R - g)} = \frac{$2.00 (1.05)^4}{(.12 - .05)} = $34.73 \)
   \( P_{15} = \frac{D_{15} (1 + g)}{(R - g)} = \frac{D_0 (1 + g)^{16}}{(R - g)} = \frac{$2.00 (1.05)^{16}}{(.12 - .05)} = $62.37 \)

2. \( R = \frac{D_1}{P_0 + g} = \frac{$2.00}{$45.00 + .07} = 11.44\% \)

3. Dividend yield = \( D_1/P_0 = 4.44\% \); Capital gains yield = 7%

4. \( P_0 = \frac{D_1}{(R - g)} = \frac{$5.00}{(.12 - .05)} = $71.43 \)

11. \( P_{19} = \frac{D_{20}}{R} = \frac{$20}{.08} = $250.00; \quad P_0 = P_{19} / (1 + R)^{19} = \frac{$250.00}{(1.08)^{19}} = $57.93 \)

12. 15\% return: \( P_0 = \frac{$4.00}{(.15 - .05)} = $40.00 \)
    10\% return: \( P_0 = \frac{$4.00}{(.10 - .05)} = $80.00 \)

All else held constant, a higher required return means that the stock will sell for a lower price.
21. \[ R = \frac{1.82}{23.91} = 7.61\% \]
    Highest \( R = \frac{1.82}{23.12} = 7.87\% \)
    Lowest \( R = \frac{1.82}{25.90} = 7.03\% \)

22. \[ R = \frac{D_1}{P_0} + g = \left[ \frac{0.21(1.06)}{23.14} \right] + .06 = 6.96\% \]
    The required return depends on the company and the industry. We will discuss historical returns in a later chapter, but this required return seems low. The most basic way to reconcile the answers is that the market may be expecting supernormal growth for Disney.

23. \[ R = \frac{D_1}{P_0} + g = \left[ \frac{1.10(1.02)}{33.14} \right] + .02 = 5.39\% \]
    The required return depends on the company and the industry. Since Duke Energy is a regulated utility company, there is little room for growth. This is the reason for the relatively high dividend yield. Since the company has little reason to keep retained earnings for new projects, a majority of net income is paid to shareholders in the form of dividends. This may change in the near future with the de-regulation of the electricity industry. In fact, the de-regulation is probably already affecting the expected growth rate for Duke Energy.