

Homework #6

1) Fowler, Inc., just paid a dividend of \$2.55 per share on its Stock. The dividends are expected to grow at a constant rate of 3.9% per year, indefinitely. If investors require a rate of return of 10.4% on this stock what is the current price? What will the price be in three years? In 15 years?

$$P_0 = D_1 / (K_e - g) \quad P_0 = \text{Current Price} \quad D_1 = \text{Expected Dividend after 1 Year}$$

$$K_e = \text{Cost of Equity} \quad G = \text{Growth Rate}$$

$$D_1 = D_0(1+G)$$

$$D_1 = \$ 2.55 (1+0.039)$$

$$D_1 = \$ 2.55(1.039)$$

$$D_1 = \$ 2.6495$$

$$P_0 = D_1 / (K_e - G)$$

$$P_0 = \$ 2.6495 / (0.104-0.039)$$

$$P_0 = \$ 2.6495 / 0.065$$

$$\mathbf{P_0 = \$ 40.76}$$

$$P_3 = D_4 / (K_e - G) \quad P_3 = \text{Price after 3 Years} \quad D_4 = \text{Expected Dividend after 4 Years}$$

$$K_e = \text{Cost of Equity} \quad G = \text{Growth Rate}$$

$$D_4 = D_0(1+g)^4$$

$$D_4 = \$ 2.55 (1+0.039)^4$$

$$D_4 = \$ 2.55(1.039)^4$$

$$D_4 = \$ 2.55 \times 1.1654$$

$$D_4 = \$ 2.9717$$

$$P_3 = D_4 / (K_e - G)$$

$$P_3 = \$ 2.9717 / (0.104-0.039)$$

$$P_3 = \$ 2.9717 / 0.065$$

$$P_3 = \$ 45.72$$

$$P_{15} = D_{16} / (K_e - G) \quad P_{15} = \text{Price after 15 Years} \quad D_{16} = \text{Expected Dividend after 16 Years}$$

$$K_e = \text{Cost of Equity} \quad G = \text{Growth Rate}$$

$$D_{16} = D_0(1+G)^{16}$$

$$D_{16} = \$ 2.55 (1+0.039)^{16}$$

$$D_{16} = \$ 2.55(1.039)^{16}$$

$$D_{16} = \$ 2.55 \times 1.8444$$

$$D_{16} = \$ 4.7031$$

$$P_{15} = D_{16} / (K_e - G)$$

$$P_{15} = \$ 4.7031 / (0.104 - 0.039)$$

$$P_{15} = \$ 4.7031 / 0.065$$

$$P_{15} = \$ 72.36$$

2) Redan, Inc., is expected to maintain a constant 4.3% growth rate in its dividends, indefinitely. If the company has a dividend yield of 5.6%, what is a required rate of return on the company's stock?

$$\text{Dividend Yield} = \text{Required Rate} - \text{Growth Rate}$$

$$\text{Required Rate} = 5.6\% + 4.3\% = 9.90\%$$

9.90% is the required rate of return on Redan, inc.

3) the stock price of Alps Co. is 67 dollars. Investors require return of 10.5% on similar stock. If the company plans to pay a dividend of \$4.25 next year, what growth rate is expected for the company stock value?

$$\text{Current stock price } P_0 = \$67 \quad \text{Required Return } K_e = 10.5\% \quad \text{Growth rate} = G \quad \text{Dividend}$$

$$\text{Expected next year } D_1 = 4.25$$

Price of stock = $D1/(k_e - g)$

$$67 = 4.25/(10.5\% - g)$$

$$10.5\% - g = 4.25/67$$

$$G = 0.105 - 0.0634$$

$$G = 4.16\%$$

The growth rate Expected for Alps Co is 4.16%.

4) e-eyes.com have the new issue of preferred stock could cause 20/20 preferred. The stock will pay \$20 dividends per year, but the first dividend will not be paid until 20 years from today. If you require a return of seven point 3% on this stock how much should you pay today?

Price of preferred stock = dividend/interest rate

Price of preferred stock

$$20/0.03 = \$66$$

Price of preferred stock now

$$66 / (1.08)^{19} = \$37.64$$

E-eyes should pay today \$37.64.

5) Cape Corp. Will pay a dividend of \$2.64 next year. The company has stated that it will maintain a constant growth rate of 4.5% a year forever if you want to return of 12%, how much will you pay for the stock? What if you want a return of 8%? What does it tell you about the relationship between the required rate of return and the stock price?

$$\text{Price at required 12\%} = 2.64 / (12\% - 4.5) = \$35.20$$

$$\text{Price at required 8\%} = 2.64 / (8\% - 4.5) = \$75.43$$

The return is greater than how much you will pay for the stock.

6) the blooming flower CO. Has earnings of \$3.68 per share. The benchmark PE for the company is 18. Which stock price would you consider appropriate? What if the benchmark PE were 21?

Current Stock Price = Earnings Per Share x PE Ratio

PE for the company is 18=\$3.68 x 18 = \$66.24 PE

for the company is 21=\$3.68 x 21 = \$77.28

7) Metallica bearings, Inc ., is a young startup company. No dividends will be paid on the stock over the next nine years because the firm needs to plow back its earnings to fuel growth. The company will then pay a dividend of \$23.00 per share 10 years from today it will increase the dividends by 5% per year thereafter. If the required return on this stock is 12%, what is the current share price?

Price of the stock in year 9= $D_1 / (R - G)$ D_1 = Dividend in year10 R =interest rate

G =firm's expected growth rate

Price of the stock in year 9

Price of stock= $\$23 / 0.12 - 0.05$

Price of stock= $\$23 / 0.07$ Price

of stock= \$328.57.

The current share price is \$328.57

8) Synovec Corporation is expected to pay the following dividends over the next four years: \$7.00, \$13.00, \$18.00, and \$3.25. Afterward the company pledges to maintain a constant 5% growth rate in dividends forever from the dividend paid in the fourth year, if the required return on stock is 10.4% what is the current share price?

$P = D_4(1 + g) / (R - g)$

$P = \$3.25(1.05) / (0.104 - 0.05)$

$P = \$63.19$

Dividend paid in the fourth year:

$P_4 = \$7 / 1.104 + \$13 / 1.104^2 + \$18 / 1.104^3 + \$3.25 / 1.104^4 + \$63.19 / 1.104^4$ $P_4 = \$75.11$

9) Biarritz Corp. Is growing quickly. Dividends are expected to grow at a rate of 25% for the next three years, with the growth rate falling off to a constant 4.5% thereafter if the required rate of return is 10.5% and the company just paid a dividend of \$2.85, what is the current share price?

$$D1=2.85 \times 1.25=3.56$$

$$D2=3.5625 \times 1.25=4.45$$

$$D3=4.453125 \times 1.25=5.57$$

Value after year 3:

$$(D3 * \text{Growth rate}) / (\text{Required rate} - \text{Growth rate})$$

$$= (5.57 \times 1.045) / (0.105 - 0.045)$$

$$=\$97.0108$$

Current price

$$3.56/1.105 + 4.45/1.105^2 + 5.57/1.105^3 + \$97.0108/1.105^3$$

$$\text{Current price} = \$82.85.$$

10) Antiques R Us is a mature manufacturing firm. The company just paid a dividend of \$16.30, but management expects to reduce the payout by 3.5% year indefinitely. If you require a return of 8% on this stock, what will you pay for a share today?

Current share price

$$= 16.30 * (1 - 3.5\%) / (8\% - (-3.5\%))$$

$$= 15.7295 / 11.5\%$$

$$= \$136.78$$