Chapter 9 – Examples

1. Assume Vesemir Corp expects earnings per share of $11 a year from today. Assume also that over the next three years, Vesemir expects to pay out 20% of its earnings as dividends and to reinvest 80% of earnings in projects earning a rate of return of 25%. Starting four years from today and continuing thereafter forever, Vesemir's return on new investments will fall to 8%, and Vesemir will boost its payout to 90% of earnings. What is the value today of Vesemir's stock if Vesemir's equity cost of capital equals 12%?

$D_1 = .2 \times 11 = 2.20$

$g_{1-4} = .8 \times .25 = .2$

$E_4 = 11(1.2)^3 = 19.01$

$D_4 = .9 \times 19.01 = 17.11$

$g_{5+} = .1 \times .08 = .008$

$TV_3 = \frac{D_4}{.12 - .008} = 152.77$

$P_0 = \left(\frac{2.2}{.12-.2}\right)\left(1 - \left(\frac{1.2}{1.12}\right)^3\right) + \frac{152.77}{(1.12)^3}$ (TV_3)

$= 6.32 + 108.74 = 115.06$

2. Assume a firm had revenues of $121 million for the year ended today and that revenues are expected to grow at a rate of 25% per year through five years from today. Variable costs will equal 70% of sales and fixed costs will equal $15 million per year. Depreciation will equal $8 million per year. Cash equals 17% of revenues in the current year and accounts receivable equal 17% of revenues in the current year. Inventory equals 16% of the following year's sales, and accounts payable equal 90% of inventory. The firm's tax rate equals 21%. The cost of capital for the firm equals 8%. Beyond year 5, free cash flows (and revenues) are expected to grow at a rate of 2% per year forever. The firm's outstanding debt equals $95 million and the firm has 9 million shares outstanding. What is the price per share for the firm's stock?

Note: if you plug this information into the spreadsheet on my website (name of link is "Discounted FCF Example"), the Free Cash Flows are as follows:

Year	1	2	3	4	5
Free Cash Flow:	6.79	13.03	20.82	30.57	44.12

$V_4 = \frac{44.12}{.08 - .02} = 735.33$

$V_0 = \frac{6.79}{1.08} + \frac{13.03}{(1.08)^2} + \frac{20.82}{(1.08)^3} + \frac{30.57 + 735.33}{(1.08)^4}$

$= 6.28 + 11.17 + 16.53 + 562.93 = 596.93$ = Enterprise value

Ch2: $EV = MVE + (D - C) \Rightarrow MVE = EV - D + C$

$C = .17 \times 121 = 20.57$

$MVE = (596.93 - 95 + 20.57) = 522.5$; $P_0 = \frac{522.5}{9} = 56.05$