

# Discounted Cash Flow Part 1 Practice Problem

Re-working the Gentex or Alaska Airlines exercises from class is also good practice.

1. Dr. Richie is considering selling her private practice, “Body Plumbers: Vascular Surgery Group of the Beach Cities”, and has hired you to value her company. You have already calculated the free cash flows for the forecast window of 5 years. The year 5 unlevered free cash flow is \$2,884,185. You take a conservative approach and use the risk free rate of 1.5% as the stable growth rate. The optimal capital structure moving forward is 70% equity. Dr. Richie’s cost of debt is 5.5%. The marginal tax rate is 21%. Estimate the Terminal Value in year 5 under the following scenarios
  - (a) Cost of Equity is 9%
  - (b) The Equity risk premium is 6.8% and the beta is 1.75
  - (c) The average de-levered equity beta (i.e., asset beta) for peer firms is 1.2. (assume optimal capital structure, and market risk premium of 6.8%)
2. For the previous question calculate the present value of the terminal value under each scenario if the debt/equity ratio during the forecast window is 0.6. (Assume other inputs to WACC are the same as above)
3. Repeat #1 using the current capital structure. The firm has a stock price of \$21.50 and 10,156,980 shares outstanding. The balance sheet shows the following (in millions\$): Long-term Debt 187.6 Accounts Payable 60.4 Current Portion of LTD 12.7. What is the terminal value under all three scenarios given this capital structure? (Note for part C use new capital structure to calculate Beta)
4. Dr. Richie comes back to you and says she heard her husband and his finance nerd friends discussing exit multiples and wanted to see what the terminal value is using this method. You’ve gathered the following information for the terminal year of the forecast period(in millions\$): Sales 26.5 Cost of Goods Sold 13.2 SG&A 9.1 Depreciation and Amortization 2.9 Interest Expense 8.4. The average EV/EBITDA ratio for the healthcare facilities industry is 8.63. What is the terminal value?
5. Try to replicate the beta listed on yahoo finance for any company (can do about 5,000 times!). Some assumptions: 1) Use monthly data (obtained from historical prices on yahoo) 2) Need 36 months of returns (therefore need 37 prices) 3)Yahoo uses closing price. 4) Use  $\hat{GSPC}$  as the proxy for the expected return on the market. 5) You may need to exclude the most recent month from your analysis (from my experience)  
Note: You can use the function =SLOPE() or the COVARIANCE() AND VARIANCE() functions to estimate Beta in Excel.

**Answer to above problems**

- 1) a) 47,963,427 b) 31,877,256 c) 34,442,912
- 2) a) 33,793,652 b) 19,789,332 c) 21,985,711
- 3) a) 55,517,868.67 b) 38,682,117.43 c) 33,643,884.53
- 4) 61,273,000
- 5) Answer should match Yahoo finance estimate (listed on main page of stock)