Estimating Discounting Rates

- Cost of Equity: We use CAPM method. Other issues: (a) small firm premiums (b) privately and closely held businesses
- Calculating the cost of debt
  - The current level of interest rates; the default risk of the company; the tax advantage associated with debt
  - After-tax cost of debt = pretax cost of debt (1 – tax rate)
- Measuring Default Spread
  - Use ratings and then estimate the default risk and default spread of a firm
  - Use recent borrowing history
  - Estimate a synthetic rating and default spread (say, using *Interest Coverage Ratio*)

Weighted Average Cost of Capital

- Include all interest bearing liabilities while estimating debt
- Debt Funding: Estimating the tax advantage
- In case of loss making entities make appropriate adjustment
- Cost of preferred stock
- Include the cost of special features (say, convertibles)
- Calculating the weights
  - We need to measure the cost of issuing securities
  - Lenders do lend on the basis of market value [always use market values while computing the cost of capital]
- Market value of debt could be estimated by treating all the debt as a coupon bond with a maturity averaging the life

Estimating Growth Rates & Extraordinary Growth Period

- Apart from the earlier inputs … the following needs to be taken into account to estimate the permanent of the extraordinary period and growth rates
- While deciding the length of the extraordinary growth period, three factors should be looked into
  - Size of the firm
  - Existing growth rate and excess returns
  - Magnitude and sustainability of competitive advantages

Estimating & Categorizing Cash Flows

- Categorizing cash flows
  - FCFE = Net Income – (Capex – Depreciation) – Δ Non-Cash Working Capital + (New debt raised – Debt repaid)
  - FCFF = Operating Income (1 – Tax rate) – (Capex – Depreciation) – Δ Non-Cash Working Capital
- Earnings:
  - Importance of updating earnings

Tax Effect

- Effective versus marginal tax rate
  - Reasons for difference – (a) following different accounting standards (b) use tax credits (c) defer taxes to future periods (d) tiered tax structure
- Marginal tax rates for multinationals
  - Use weighted average of marginal tax rates
  - Use marginal tax rate of the country in which the firm is incorporated
  - Use different marginal tax rate for each country
- Effects of tax rate on value
  - If the same tax rate is to be applied for every period then the safer choice is the marginal tax rate
  - But, what should be the marginal tax rate taken?

Tax effect for a firm in losses!

- In such scenarios, during the years when the losses shelter income … the tax rate would be zero for both
  - Computation of after tax operating income
  - Cost of capital
- So, you can think of having the following columns for computing cash flows:
  - Year; Revenues; Operating Income; Net Operating Losses at the end of the year; Taxable Income; Taxes; Tax Rate;
- Tax benefits, tax subsidies and tax credits by tax authorities (windmill, backward area, etc.)
- Tax books and reporting books and its complications

Net Capital Expenditure

Three issues

- Firms often do capital spending in chunks
  - Can do smoothening
  - Firms with limited information can use the industry averages for capex (depending on size)
  - Go for Net Capex as a percent of EBIT
- Accounting definition of capex does not include R&D, and similar spending
- Acquisitions are not classified as capex by accountants

Investment in Working Capital

- Estimating expected changes in non-cash working capital
  - as a percent of revenue can be used, in conjunction with expected revenue changes for each period
    - By looking at the firms history
    - By looking at industry standards
  - Base it on the marginal working capital as a percent of revenues in the most recent year
  - Base our changes on the non-cash working capital as a percent of revenues over a historical period
  - Also try to look at the non-cash working capital relation to assets ratio
  - Remember, firms may have a negative non-cash working capital (especially the large ones!)

Cash Flows to Equity

- Cash Flows to Equity for a Levered Firm at a desired Leverage i.e., δ ➔ debt-to-equity ratio
  - FCFE = Net Income – (1 – δ) (Capex – Depreciation) – (1 – δ) Δ non cash Working Capital
  - Otherwise, it would be, FCFE = Net Income – (Capex – Depreciation) – (Δ non cash Working Capital) + (New debt issued – debt repayments)

FCFF: Cash Flows to the Firm

- Approach 1: Cumulate the cash flows to different claim holders
- Approach 2: Operating Income (1 – tax rate) + Depreciation – Capital Spending - Δ Working Capital Needs
- We prefer approach 2 for its ease

Cash Flows and Asset Life

- Most valuations are done over a finite time horizon
  - For finite life assets, we use salvage value
  - For infinite life assets, we use terminal value
  - In a infinite life asset, capex is needed not only to maintain existing assets but also for future growth
  - In a finite life asset, working capital would be liquidated at the end of asset's life time