BEYOND INPUTS: CHOOSING AND USING THE RIGHT MODEL

Choosing the right model

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SUMMARIZING THE INPUTS

- In summary, at this stage in the process, we should have an estimate of the
  - the **current cash flows on the investment**, either to equity investors (dividends or free cash flows to equity) or to the firm (cash flow to the firm)
  - the **current cost of equity and/or capital** on the investment
  - the **expected growth rate in earnings**, based upon historical growth, analysts forecasts and/or fundamentals
- The next step in the process is deciding
  - which cash flow to discount, which should indicate
  - which discount rate needs to be estimated and
  - what pattern we will assume growth to follow

WHICH CASH FLOW SHOULD I DISCOUNT?

- Use Equity Valuation

  (a) for firms which have stable leverage, whether high or not…

  (b) For all financial service firms

- Use Firm Valuation

  (a) for firms which have leverage which is too high or too low, and expect to change the leverage over time, because debt payments and issues do not have to be factored in the cash flows and the discount rate (cost of capital) does not change dramatically over time.

  (b) for firms for which you have partial information on leverage (eg: interest expenses are missing..)

  (c) in all other cases, where you are more interested in valuing the firm than the equity. (Value Consulting?)

GIVEN CASH FLOWS TO EQUITY, SHOULD I DISCOUNT DIVIDENDS OR FCFE?

- Use the **Dividend Discount Model**

  (a) For firms which pay dividends (and repurchase stock) which are close to the Free Cash Flow to Equity (over a extended period)

  (b)For firms where FCFE are difficult to estimate (Example: Banks and Financial Service companies)

- Use the **FCFE Model**

  (a) For **firms which pay dividends which are significantly higher or lower than the Free Cash Flow to Equity**. (What is significant? ... As a rule of thumb, if dividends are less than 80% of FCFE or dividends are greater than 110% of FCFE over a 5-year period, use the FCFE model)

  (b) For **firms where dividends are not available** (Example: Private Companies, IPOs)

WHAT DISCOUNT RATE SHOULD I USE?

- Cost of Equity versus Cost of Capital
  - If discounting cash flows to equity -> Cost of Equity
  - If discounting cash flows to the firm -> Cost of Capital
- What currency should the discount rate (risk free rate) be in?
  - Match the currency in which you estimate the risk free rate to the currency of your cash flows
- Should I use real or nominal cash flows?
  - If discounting real cash flows -> real cost of capital
  - If nominal cash flows -> nominal cost of capital
  - If inflation is low (<10%), stick with nominal cash flows since taxes are based upon nominal income
  - If inflation is high (>10%) switch to real cash flows

WHICH GROWTH PATTERN SHOULD I USE?

Use a Stable Growth Model

- If your firm is
  - large and growing at a rate close to or less than growth rate of the economy, or
  - constrained by regulation from growing at rate faster than the economy
  - has the characteristics of a stable firm (average risk & reinvestment rates)

Use a 2-Stage Growth Model

- If your firm
  - is large & growing at a moderate rate (≤ Overall growth rate + 10%) or
  - has a single product & barriers to entry with a finite life (e.g. patents)

Use a 3-Stage or n-stage Model

- If your firm
  - is small and growing at a very high rate (> Overall growth rate + 10%) or
  - has significant barriers to entry into the business
  - has firm characteristics that are very different from the nor

THE BUILDING BLOCKS OF VALUATION

Choose a			
Cash Flow	*Dividends* Expected Dividends to Stockholders	*Cashflows to Equity* Net Income - (1- δ) (Capital Exp. - Deprec'n) - (1- δ) Change in Work. Capital = Free Cash flow to Equity (FCFE) [δ = Debt Ratio]	*Cashflows to Firm* EBIT (1- tax rate) - (Capital Exp. - Deprec'n) - Change in Work. Capital = Free Cash flow to Firm (FCFF)
& A Discount Rate	*Cost of Equity* • *Basis*: The riskier the investment, the greater is the cost of equity. • *Models:* CAPM: Riskfree Rate + Beta (Risk Premium) APM: Riskfree Rate + Σ $Beta_j$ ($Risk\ Premium_j$): *n factors*		*Cost of Capital* WACC = k_e (E/ (D+E)) + k_d (D/(D+E)) k_d = Current Borrowing Rate (1-t) E,D: Mkt Val of Equity and Debt
& a growth pattern