VALUATION: FIRST STEPS

Cynic: A person who knows the price of everything but the value of nothing.
First Principles

Maximize the value of the business (firm)

The Investment Decision
Invest in assets that earn a return greater than the minimum acceptable hurdle rate

- The hurdle rate should reflect the riskiness of the investment and the mix of debt and equity used to fund it.

The Financing Decision
Find the right kind of debt for your firm and the right mix of debt and equity to fund your operations

- The return should reflect the magnitude and the timing of the cashflows as well as all side effects.
- The optimal mix of debt and equity maximizes firm value
- The right kind of debt matches the tenor of your assets

The Dividend Decision
If you cannot find investments that make your minimum acceptable rate, return the cash to owners of your business

- How much cash you can return depends upon current & potential investment opportunities
- How you choose to return cash to the owners will depend on whether they prefer dividends or buybacks

Maximize the value of the business (firm)
Three approaches to valuation

- **Intrinsic valuation**: The value of an asset is a function of its fundamentals – cash flows, growth and risk. In general, discounted cash flow models are used to estimate intrinsic value.

- **Relative valuation**: The value of an asset is estimated based upon what investors are paying for similar assets. In general, this takes the form of value or price multiples and comparing firms within the same business.

- **Contingent claim valuation**: When the cash flows on an asset are contingent on an external event, the value can be estimated using option pricing models.
One tool for estimating intrinsic value: Discounted Cash Flow Valuation

**Value of growth**
The future cash flows will reflect expectations of how quickly earnings will grow in the future (as a positive) and how much the company will have to reinvest to generate that growth (as a negative). The net effect will determine the value of growth.

Expected Cash Flow in year $t = E(CF) = \text{Expected Earnings in year } t - \text{Reinvestment needed for growth}$

**Cash flows from existing assets**
The base earnings will reflect the earnings power of the existing assets of the firm, net of taxes and any reinvestment needed to sustain the base earnings.

**Value of asset**
$$\text{Value of asset} = \frac{E(CF_1)}{(1+r)} + \frac{E(CF_2)}{(1+r)^2} + \frac{E(CF_3)}{(1+r)^3} + \cdots + \frac{E(CF_n)}{(1+r)^n}$$

**Steady state**
The value of growth comes from the capacity to generate excess returns. The length of your growth period comes from the strength & sustainability of your competitive advantages.

**Risk in the Cash flows**
The risk in the investment is captured in the discount rate as a beta in the cost of equity and the default spread in the cost of debt.
Equity Valuation

- The value of equity is obtained by discounting expected cashflows to equity, i.e., the residual cashflows after meeting all expenses, tax obligations and interest and principal payments, at the cost of equity, i.e., the rate of return required by equity investors in the firm.

\[
\text{Value of Equity} = \sum_{t=1}^{t=n} \frac{\text{CF to Equity}_t}{(1+k_e)^t}
\]

where,

- \(\text{CF to Equity}_t\) = Expected Cashflow to Equity in period \(t\)
- \(k_e\) = Cost of Equity

- The dividend discount model is a specialized case of equity valuation, and the value of a stock is the present value of expected future dividends.
The value of the firm is obtained by discounting expected cashflows to the firm, i.e., the residual cashflows after meeting all operating expenses and taxes, but prior to debt payments, at the weighted average cost of capital, which is the cost of the different components of financing used by the firm, weighted by their market value proportions.

\[
\text{Value of Firm} = \sum_{t=1}^{\infty} \frac{\text{CF to Firm}_t}{(1+WACC)^t}
\]

where,

- \( \text{CF to Firm}_t \) = Expected Cashflow to Firm in period \( t \)
- \( WACC \) = Weighted Average Cost of Capital
Choosing a Cash Flow to Discount

- When you cannot estimate the free cash flows to equity or the firm, the only cash flow that you can discount is dividends. For financial service firms, it is difficult to estimate free cash flows. For Deutsche Bank, we will be discounting dividends.

- If a firm’s debt ratio is not expected to change over time, the free cash flows to equity can be discounted to yield the value of equity. For Tata Motors, we will discount free cash flows to equity.

- If a firm’s debt ratio might change over time, free cash flows to equity become cumbersome to estimate. Here, we would discount free cash flows to the firm. For Vale and Disney, we will discount the free cash flow to the firm.
The Ingredients that determine value.

- Cashflows can be:
  a. After debt payments to equity
     - Dividends
     - Free Cashflow to Equity
  b. Before debt payments to firm
     - Free Cashflow to Firm

- Growth rate can be:
  a. In Equity Earnings
     - Net Income
     - Earnings per share
  b. In Operating Earnings

- Firm is in stable growth which it can sustain forever

- Expected Cashflows during extraordinary growth phase

- Present value is:
  a. Value of equity, if cashflows to equity discounted at cost of equity
  b. Value of operating assets of the firm, if cashflows to firm discounted at the cost of capital

- Discount the cashflows and terminal value to the present

- Discount Rate can be:
  a. Cost of equity, if cashflows are equity cashflows
  b. Cost of capital, if cashflows are to the firm

- Terminal Value
Narratives and Numbers

Favored Tools
- Accounting statements
- Excel spreadsheets
- Statistical Measures
- Pricing Data

Favored Tools
- Anecdotes
- Experience (own or others)
- Behavioral evidence

A Good Valuation

The Numbers People

The Narrative People

Illusions/Delusions
1. Precision: Data is precise
2. Objectivity: Data has no bias
3. Control: Data can control reality

Illusions/Delusions
1. Creativity cannot be quantified
2. If the story is good, the investment will be.
3. Experience is the best teacher
Task
Make a judgment on whether you want to value just the equity or the operating assets of your company.