***Assets as a Portfolio of Debt and Equity***

Assets (V) can be viewed as a portfolio of the debt (D) and equity (E) that fund the asset, which is the balance sheet:

If you own all of the debt (bonds and loans) and equity (shares), you own the assets. Therefore the return on assets () are a weighted average of the returns on the portfolio of debt () and equity () that fund them. This is called the weighted average cost of capital (WACC) before tax:

***Weighted Average Cost of Capital (WACC)***

The weighted average cost of capital, the WACC, is the:

* Required total return of debt, , also called the cost of debt, weighted by the proportion of debt (D); and the
* Required total return of equity, , also called cost of equity, weighted by the proportion of equity (E) used to finance the firm's assets (V).

Note that V, D and E are all supposed to be *market* values not *book* values.

***Valuation using Cash Flows and WACC***

Now that we know how to calculate cash flows, present values and the costs of debt and equity, the last step to valuing a whole business or project is to calculate the discount rate applicable to the cash flows. One method is to use the WACC.

The value of a firm (V) is equal to its Firm Free Cash Flows (FFCF) discounted its WACC. If FFCF are a perpetuity, then:

Taxes are a complicating factor.