INTERNATIONAL CORPORATE FINANCE

Company's Capital Structure

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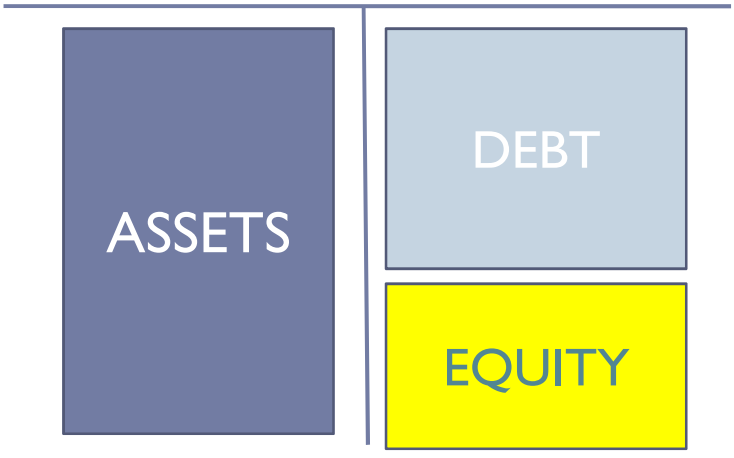
Company's Balance Sheet



Debt or equity question - when relevant?

- Company is being started
- New Subsidiary is being established
- New project is being considered
- Expansion decision is made
- Original owner wants to take some cash out

- So, when the Company needs financing

Equity vs. Debt

- Equity – financing (in form of money or in-kind contribution) that Company's owners invest into the venture.
  - Equity investors become the Company's (co-) owners. Ownership unit is called 'share'. The equity investors are entitled to share in profits.

- Debt – financing that creditors are willing to give the Company, and the Company is obliged to return in the future.

Corporate perspective
Debt vs Equity

- Company is being started

or

- New project is being considered
- Original owner wants to take some cash out

- So, when the Company needs financing

Advantages and disadvantages of Debt

- Interest is tax deductible (lowers the effective cost of debt)
- Debt-holders are limited to a fixed return – so stockholders do not have to share profits if the business does well
- Debt holders do not have voting rights
- Cash flow predictibility necessary
- Higher debt ratios lead to greater risk and higher required interest rates (to compensate for the additional risk)

Business vs Financial risk

- Standard measure is beta (controlling for financial risk)
- Factors:
  - Demand variability
  - Sales price variability
  - Input cost variability
  - Ability to develop new products
  - Foreign exchange exposure
  - Operating leverage (fixed vs variable costs)
- The additional risk placed on the common stockholders as a result of the decision to finance with debt
- Leverage increases shareholders' risk
- Leverage increases cost of equity

Business and Financial Risk

- Financial leverage concentrates the firm's business risk on the shareholders because debt-holders, who receive fixed interest payments, bear none of the business risk.

Leverage and firm value

- Capital structure affects the risk and, hence, the value of the company.
- Capital Structure Theory
  - Miller and Modigliani
  - Tax shield
  - Bancruptcy costs
  - Agency costs
  - Information Assymentry

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WACC

The **weighted average cost of capital (WACC)** is the marginal cost of raising additional capital and is affected by the costs of capital and the proportion of each source of capital:

$$\text{WACC} = \left[\frac{D}{V} r_d (1 - t)\right] + \left[\frac{E}{V} r_e\right]$$

where
r_d is the before-tax marginal cost of debt
r_e is the marginal cost of equity
t is the marginal tax rate
D is the market value of debt
E is the market value of equity
$V = D + E$

Capital Structure Irrelevance

- Franco Modigliani and Merton Miller (MM) theory that helps us understand how taxes and financial distress affect a company's capital structure decision.

- Unrealistic assumptions, but helpful conclusions:
  1. Homogeneous expectations
  2. Bonds and stocks are perfectly traded
  3. Borrowing rate = lending rate
  4. No agency costs.
  5. Investment and financing decisions are independent

No tax scenario

- Market Value not affected by capital structure,
  - if there are no taxes, costs of financial distress
  - Investors themselves decide on leverage
- Cost of equity is linear function of indetedness

$$r_e = r_0 + (r_0 - r_d)\left(\frac{D}{E}\right)$$

- The WACC is constant because as more of the cheaper source of capital is used (that is, debt), the cost of equity increases.

Tax shield in the MM Theory

- the tax deductibility of interest increases the value
  - Lowers the cost of debt.
  - Lowers the WACC as more debt is used.
  - Increases the value of the firm

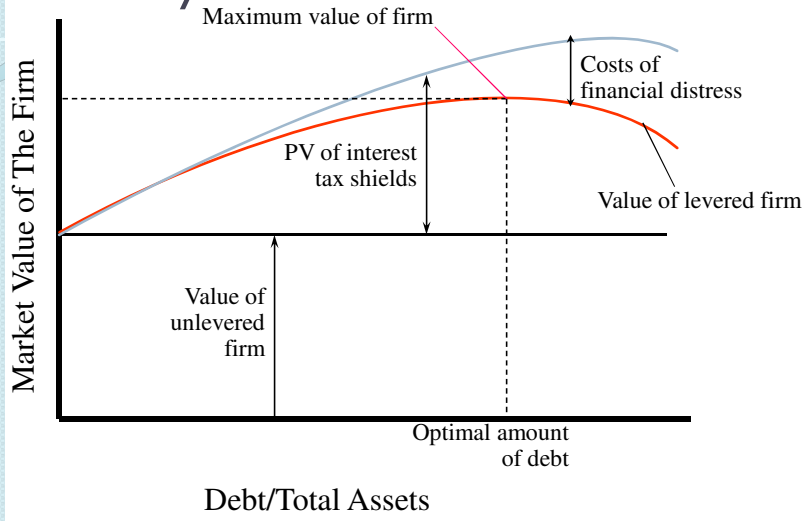
	Without Taxes	With Taxes
Value of the Firm	$V_L = V_U$	$V_L = V_U + tD$
WACC	$r_{WACC} = \left[\frac{D}{V} r_d\right] + \left[\frac{E}{V} r_e\right]$	$r_{WACC} = \left[\frac{D}{V} r_d(1-t)\right] + \left[\frac{E}{V} r_e\right]$
Cost of Equity	$r_e = r_0 + (r_0 - r_d)\left(\frac{D}{E}\right)$	$r_e = r_0 + (r_0 - r_d)(1-t)\left(\frac{D}{E}\right)$

- Without bancruptcy costs the optimal capital structure is 99.99% debt.

Bancruptcy costs

- **Costs of financial distress** are costs associated with a company that is having difficulty meeting its obligations.
- Costs of financial distress include the following:
  - Opportunity cost of not making optimal decisions
  - Inability to negotiate best contracts
  - Loss of clients
- The expected cost of financial distress increases as the relative use of debt financing increases.
- **There exists an optimal capital structure**

Modified corporate structure theory



No Optimal Capital Structure

Taxes	Costs to Financial Distress	Optimal Capital Structure?
No	No	No
Yes	No	Yes, 99.99% debt
Yes	Yes	Yes, benefits of interest deductibility are offset by the expected costs of financial distress

Optimal capital structure for a given company depends:

- business risk
- tax situation
- tangibility of company's assets
- corporate governance.
- transparency