Direcció Financera II

Chapter 2: Firm's Capital Structure

Part (c): Agency costs and asymmetric information

Albert Banal-Estanol

Agency Costs

Agency costs of leverage

- Conflicts of interest between debt holders & shareholders
- Managers…
  - own shares and are elected by shareholders
  - maximise shareholder's wealth, sometimes at the expense of debt holders and even at expense of firm's value
  - more likely to occur if risk of financial distress is high
- Some examples:
  - Over-investment: Shareholders can gain by taking a negative-NPV project, if sufficiently risky
  - Under-investment (*debt overhang*): Shareholders might not invest in positive NPV projects because value of taking it goes to bondholders

Over-investment at Baxter, Inc.?

- Loan of $1 million due at the end of the year
- Without any change,…
  - market value of its assets will be $900,000 at that time
  - Therefore the firm will default on its loan and go bankrupt
- New strategy is possible:
  - No upfront investment and 50% chance of success
  - If strategy is successful, value of the firm's assets: $1.3 million
  - If not, value of the firm's assets: $300,000
- Should Baxter change the strategy? According to…?

Under-investment at Baxter, Inc.?

- Loan of $1 million due at the end of the year
- Without any change,…
  - market value of its assets will be $900,000
  - Therefore the firm will default on its loan and go bankrupt
- New strategy (2):
  - Initial investment: $100,000 and risk-free 50% return
  - Risk free-interest rate: 5%
- Should Baxter change the strategy?
- If so, how to pay for it (no cash available)? New equity?

Other agency conflicts

- Cashing out:
  - incentives to withdraw money just before default (e.g. sell assets below market value and use funds to pay immediate dividend)
- Shortsighted investment problem:
  - tendency to take up projects that pay up early
- Reluctance to liquidate problem:
  - keep firm operating even if liquidation exceeds operation value

In sum, agency costs of leverage

- Leverage can encourage insiders to take actions that...
  - increase shareholders' value
  - but reduce debt and firm's value ·
- Who bear the costs?
  - debt holders less willing to pay for new debt
  - less money to distribute to shareholders
- This represents another cost of increasing leverage
- Solutions: (see chapter 3)
  - issue debt with shorter maturity (drawbacks?)
  - "debt covenants": restrictions on actions (drawbacks?)

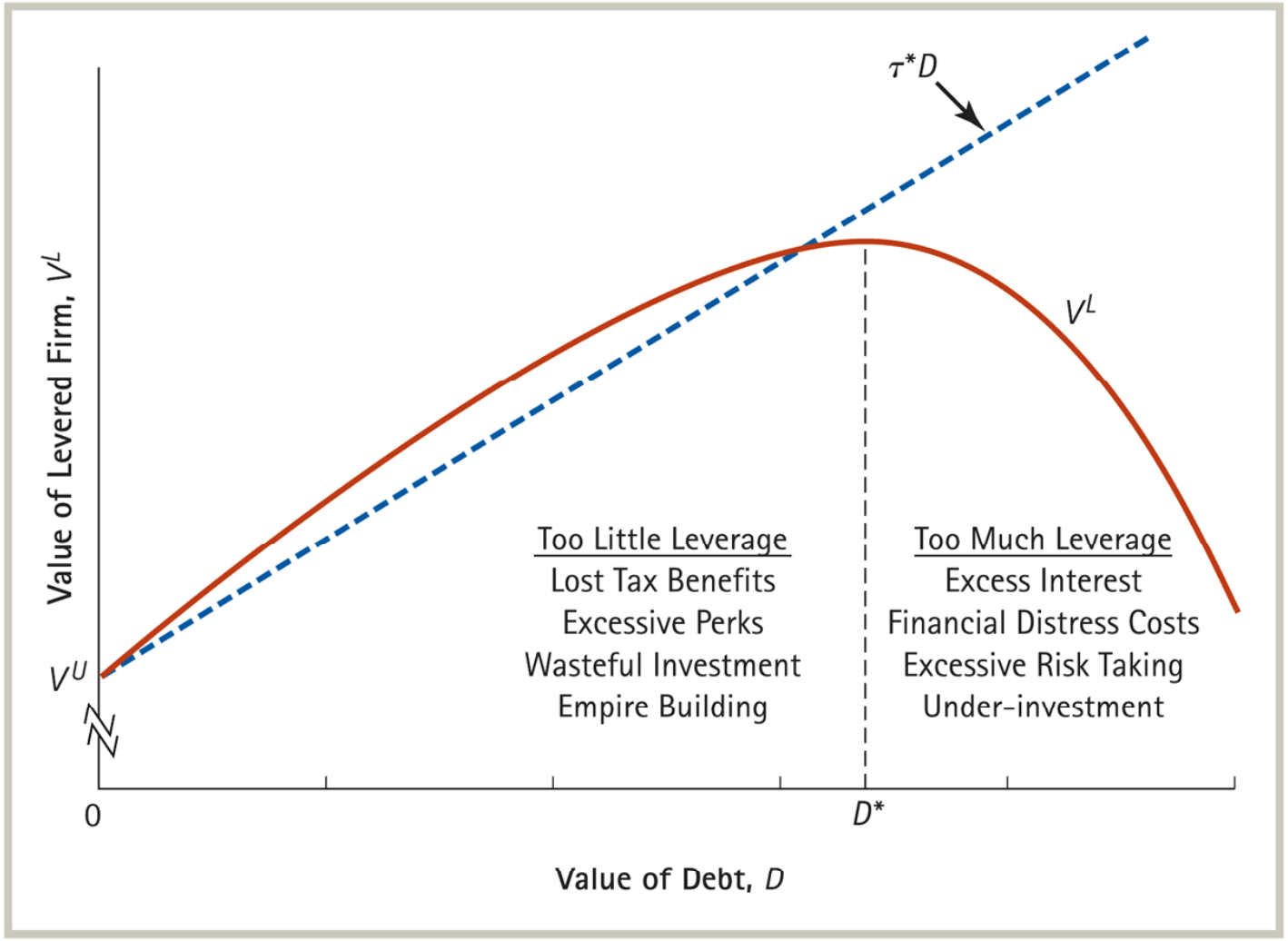
Conflicts of interest between ownership and control

- Separation of ownership and control: Managers...
  - own small fractions (median: 0.25% Jensen and Murphy,90)
  - are rarely dismissed (Warner et al., JFE 1988)
  - but control the corporation. (Why do we use them, then?)
- Managers care about…
  - Investors (equity and debt holders)
  - Customers and suppliers, employees
  - Themselves!
- Can capital structure help solving this potential interest conflict?

Too much or… too little leverage?

- Investment in negative NPV projects:
  - Perks
  - Empire building: increase size of the firm
  - Low-risk projects because of fear of job security
- Free cash flow (FCF) hypothesis (Jensen, AER 86):
  - Wasteful spending especially if large FCF available
- Leverage..
  - (i) obliges firm to make interest payments
  - (ii) reduces manager's ability to misbehave
  - (iii) forces debtholders to monitor more
- As a result, it increases the firm's value

Leverage with Taxes, Financial Distress, & Agency Costs



The Optimal Debt Level

- R&D-intensive firms
  - High R&D costs and future growth opportunities, low debt levels
  - Low current free cash flows and risky business strategies
- Low-growth, mature firms:
  - Stable cash flows and tangible assets often carry high-debt
  - High free cash flows with few good investment opportunities

Asymmetric information

Asymmetric information and credibility

- Asymmetric Information:
  - Parties have different information, for example, managers have superior information to investors regarding firm's future cash flows
- Transmitting positive information to investors:
  - Signing a contract with large penalties might be too costly or impossible
  - Launch an investor relations campaign might be useless (not credible)
  - Debt issue signals confidence about the firm future prospects:
    - Managers avoid increasing leverage if the firm is in bad shape
- Credibility Principle:
  - One's self-interested claims credible only if they are supported by actions that would be too costly if the claims were untrue

Signaling theory of debt

- In order to signal quality, managers have an additional incentive to increase their debt ratios:
  - If firm has good quality, no trouble paying debt interests
  - If not, financial distress and costs for the firm

- Important for the signal to be credible that
  - firms in bad shape cannot mimic behaviour of good firms
  - but indeed high debt ratio is costly for bad firms

Adverse selection and the lemons

- Adverse selection:
  - Buyers and sellers have different information
  - Average quality of assets in the market differ from average quality overall
- Lemons principle:
  - Seller has private information about the good's value
  - Buyers willing to pay less due to adverse selection

Selling Equity

- Firms that sell new equity have private information about the quality of the future projects:
  - Incentives to issue equity when stock is overvalued
- Buyers might only willing to buy the new equity at heavily discounted prices
- Insiders' job: convince investors that there are other reasons to sell equity costs are high
  - Willingness to diversify
  - Need of cash to fund new positive NPV investments
- Overall…
  - Stock price declines on the announcement of an equity issue

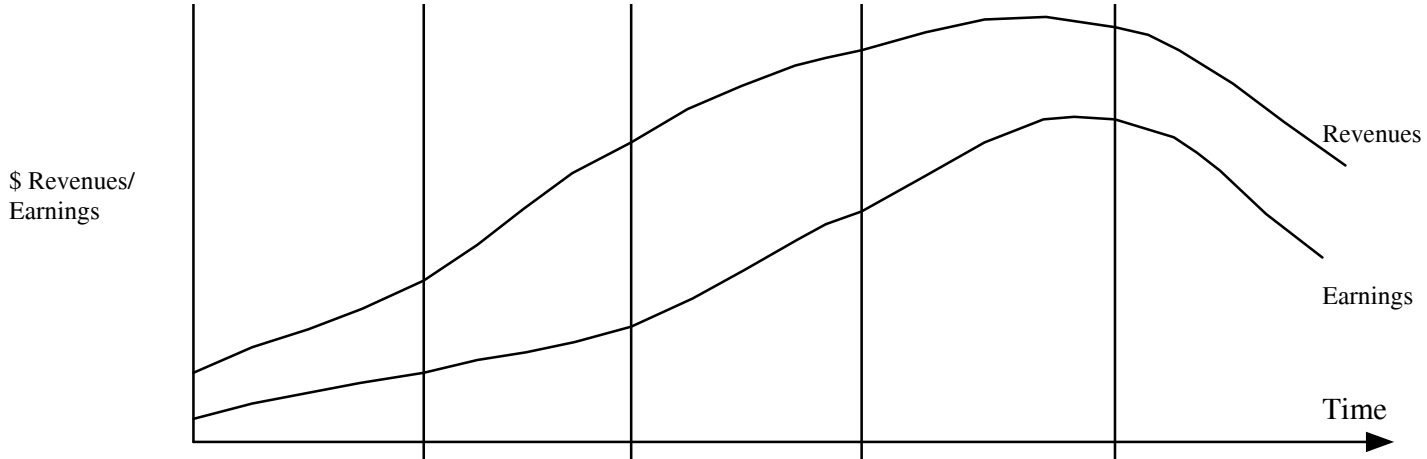
Pecking Order Hypothesis

- Managers prefer to fund investments by…
  - first using retained earnings
  - then debt
  - and equity only as a last resort
- Firms with more retained earnings use less debt
  - Not because of lower optimal debt ratios but
  - because of asym. info, external financing more costly

The bottom line

- With perfect capital markets…
  - Firm's capital structure alters the risk of equity
  - But not its value or the amount raised from outsiders
- Optimal capital structure depends on imperfections:
  - Taxes:
    - interest tax shield allows repayment without paying corporate tax
    - Each dollar of permanent debt gives payment worth τ
  - Bankruptcy costs:
    - Too much leverage might lead to bankruptcy and its associated costs
  - Agency costs:
    - Too much debt can induce excessive risk-taking or underinvestment
    - But with high free-cash flows, too little might lead to wasteful spending
  - Asymmetric information:
    - Increasing leverage can be used to signal confidence in the firm
    - Leverage better than equity to deal with adverse selection

Can we explain better financing choices along the life cycle?



External funding needs	High, but constrained by infrastructure	High, relative to firm value.	Moderate, relative to firm value.	Declining, as a percent of firm value	Low, as projects dry up.
Internal financing	Negative or low	Negative or low	Low, relative to funding needs	High, relative to funding needs	More than funding needs
External Financing	Owner's Equity Bank Debt	Venture Capital Common Stock	Common stock Warrants Convertibles	Debt	Retire debt Repurchase stock
Growth stage	Stage 1 Start-up	Stage 2 Rapid Expansion	Stage 3 High Growth	Stage 4 Mature Growth	Stage 5 Decline
Financing Transitions	Accessing private equity	Inital Public offering	Seasoned equity issue	Bond issues	