FIN 413
Corporate Finance

Capital Structure and Operating Strategy

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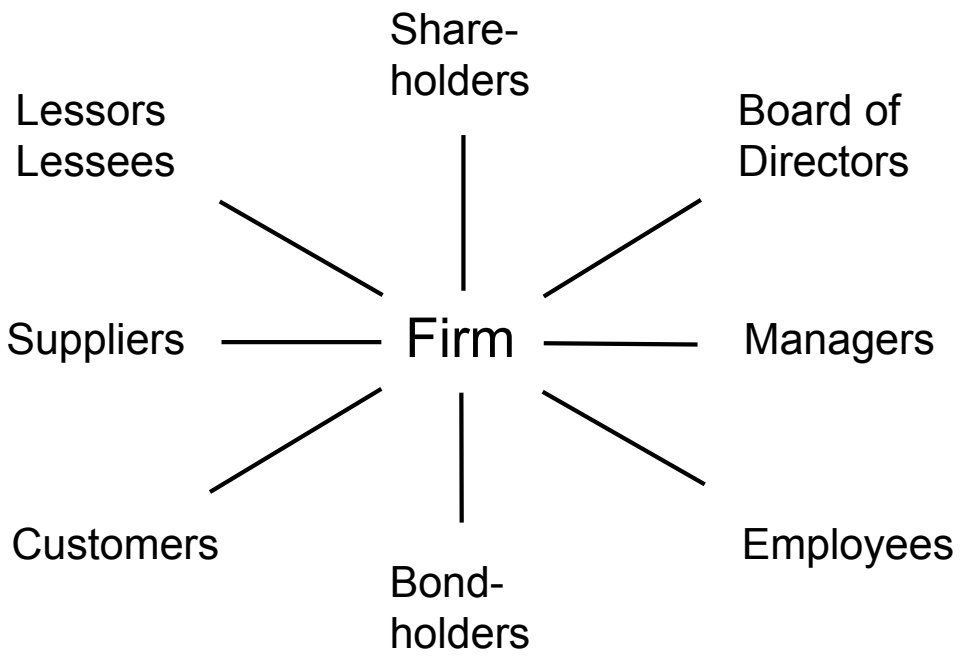
The Nexus of contracts Theory of the firm



Costs of financial distress

- Managers
- Employees
- Suppliers
- Customers

Costs of financial distress - example

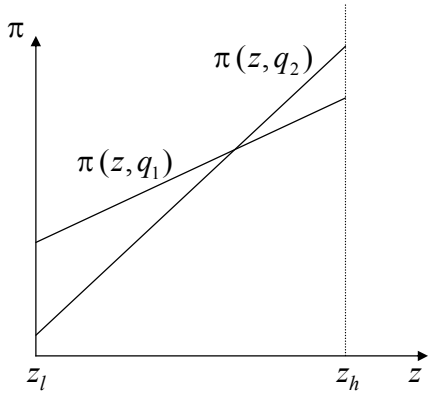
- In 1979, Chrysler offered rebates on its cars and trucks
- Average rebate was $300
- In 1979 Chrysler sold almost 1,500,000 cars and trucks
- The costs of financial distress related to customers were more than $400M

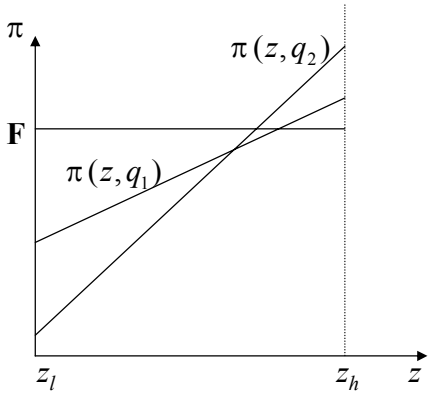
Financial distress and bargaining power

- Bargaining with unions

- Bargaining with government

Strategic benefit of debt





Strategic benefit of debt

• Leverage may make a firm's strategy more aggressive and the resulting optimal strategy of its rivals less aggressive. This may indirectly benefit the firm

Strategic benefit of debt - example

- Firms A and B produce identical products
- They compete in quantities
- The demand for the products is uncertain:
  - If the economy is good, the demand is P=90-qA-qB, where P is the equilibrium price, qA is the quantity produced by firm A, and qB is the quantity produced by firm B.
  - In the bad state of the economy, the demand is given by P=60-qA-qB.
- The good and the bad states of the economy are equally likely.
- The firms have to choose production quantities before observing whether the economy is good or bad.
- Fixed and variable production costs are zero.

Strategic benefit of debt - example

- Case 1: The firms are all equity financed
- Firm A's profit function
- Firm A's optimal quantity
- Firm B's optimal quantity
- Firms' equilibrium quantities
- Firms' values

Strategic benefit of debt - example

- Case 2: Assume that before the game begins, each firms issues debt with a face value of 800, and the firms' shareholders assume that in the bad state, they are going to go bankrupt.

- If this is the case, the shareholders don't take the profits in the bad state into account while choosing production quantities.

Strategic benefit of debt - example

- Firm A's shareholders' expected profits:
- Firm A's optimal quantity
- Firm B's optimal quantity
- Firms' equilibrium quantities

Strategic benefit of debt - example

- Profits in the good state
- Profits in the bad state
- Firms' expected profits (firm values)
- Shareholder value
- Debtholder value

Strategic benefit of debt - example

- Case 3: Now assume that only firm A issues debt with a face value of 800, while firm B remains all-equity financed. Firm A's shareholders continue to treat the bad state as default state.
- Firm A's shareholders' expected profits
- Firm A's optimal quantity
- Firm B's expected profits
- Firm B's optimal quantity

Strategic benefit of debt - example

- Firms' equilibrium quantities
- Firm A's expected profits (Firm A's value)
- Firm A's profits in the good state
- Firm A's profits in the bad state
- Firm A's shareholder value
- Firm A's debtholder value

Strategic benefit of debt - example

- Firm B's expected profits (Firm B's value)
- Firm B's profits in the good state
- Firm B's profits in the bad state

Strategic benefit of debt - example

If the firms' objective is maximizing ex-ante (before debt issuance) shareholder value, will each of them issue debt in equilibrium?

		Firm B	
		Issue debt	Not issue debt
Firm A	Issue debt	450, 450	700, 400
	Not issue debt	400, 700	625, 625

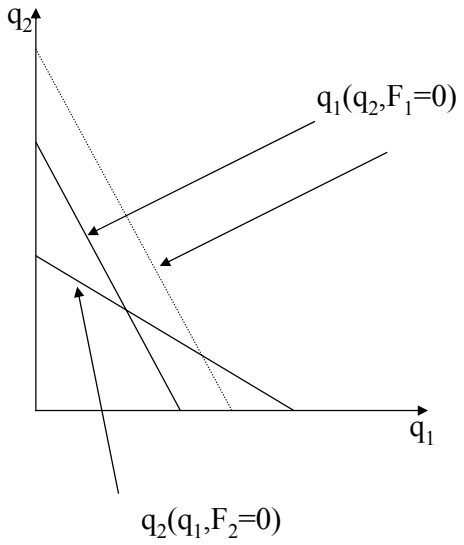
Strategic benefit of debt - example

If the firms could collude on debt levels (and somehow commit not to "cheat"), would they issue debt in equilibrium?

Firm B

Firm A		Issue debt	Not issue debt
	Issue debt	450, 450	700, 400
	Not issue debt	400, 700	625, 625

Strategic benefit of debt



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Strategic cost of debt

- In a static game where firms compete in quantities, debt may be strategically beneficial by forcing competitors to behave less aggressively

- What about dynamic games (long run)?

- Predation