

FINANCIAL DISTRESS

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- ▶ **Financial distress:** There is a mismatch between liquid assets and obligations of the firm
 - ▶ Temporary negative shock leaves firm unable to pay interest on debt
 - ▶ Lawsuit, accident

DISTRESS: OVERVIEW

- ▶ Financial and Economic Distress

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- ▶ Debt overhang and implications for creditors and shareholders
- ▶ Bankruptcy and economic implications
- ▶ Takeovers

FINANCIAL & ECONOMIC DISTRESS

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- ▶ **Managing distress: rectifying mismatch between short term obligations and liquid assets**
 - ▶ Reorganizing good firms who are in trouble
 - ▶ Dissolving bad firms

FINANCIAL & ECONOMIC DISTRESS

- ▶ Evidence
 - ▶ Gilson (1989): Management turnover much higher for economically distressed firms, higher still for financially distressed firms
 - ▶ DeAngelo and DeAngelo (1990): 78.6% of firms that were financially distressed cut dividends, even when covenants were non-binding

DISTRESS & LEVERAGE

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 - ▶ Direct costs: legal process of restructuring (court costs, advisory fees) (on average 2-3% of the assets)
 - ▶ Enron \$30m per month, \$750 in total
 - ▶ Worldcom (reorganisation to become MCI) \$657m
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 - ▶ Indirect costs: Loss of customers, suppliers, employees, fire sales of assets, ..

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- ▶ Then,...
 - ▶ How much interest will the bank charge if it wants an average return of 10%?
 - ▶ How much is this is due to the costs of bankruptcy?

M&M AND DISTRESS

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 - ▶ Probability, which:
 - ▶ increases with the amount of a firm's liabilities, relative to assets
 - ▶ increases with the volatility of a firm's cash flows and asset values

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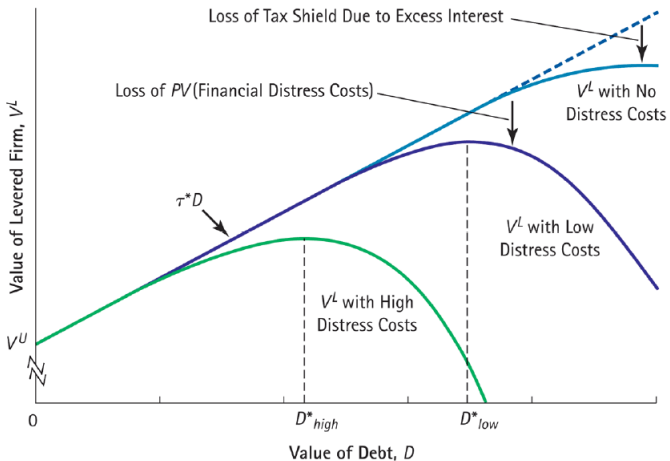
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 - ▷ Magnitude of costs once in distress, which depends on industry:
 - ▷ Technology: high (loss of customers, key personnel, lack of tangible assets being liquidated)
 - ▷ Real estate: low (assets can (in normal times) be sold relatively easily)

M&M AND DISTRESS

- ▶ Costs of distress affect optimal leverage



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- ▶ Scare off customers and clients

- ▶ Reputation

DEBT OVERHANG

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Good	0.5	100
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- ▶ A has \$15M in cash which it may use for investment or pay out as dividend
- ▶ With 10% risk-free rate, A should undertake the project:

$$NPV = -15 + \frac{22}{1.1} = \$5M$$

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- ▶ If project not taken shareholders get:

$$15 + 0.5 \times \left(\frac{100 - 35}{1.1} \right) = 44.5$$

- ▶ If project taken shareholders get:

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- ▶ What's happening?

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- ▷ Shareholders: may be reluctant to fund valuable projects because most of the benefits would go to the firm’s existing creditors

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 - ▶ New equity issue?
 - ▶ New debt issue?
 - ▶ Financial restructuring?
 - ▶ Outside bankruptcy
 - ▶ Under a formal bankruptcy procedure

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- ▶ Suppose old equity paid 15 to itself as dividend, then raised new equity
 - ▶ New equity must get a “fair” price, they are promised α of the firm:

$$15 = \alpha \frac{[0.5(100 + 22 - 35) + 0.5 \times 0]}{1.1} \Rightarrow \alpha = 37.9\%$$

- ▶ Old equity gets the original dividend and $1 - \alpha$ of the firm:

$$15 + (1 - \alpha) \frac{[0.5(100 + 22 - 35) + 0.5 \times 0]}{1.1} = 39.5 < 44.5$$

- ▶ Firms in financial distress may be unable to raise funds from new investors because most of the benefits would go to the firm's existing creditors

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- ▷ Will shareholders go ahead with the project?

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 - ▶ If project taken: $0.5 \frac{(98+8)}{1.1} = 48.2$
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- ▷ How can this be achieved in practice?

- ▷ The loan contract is modified so that the face value decreases to 24 but a covenant is added specifying that no dividends can be paid this year

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- ▶ In practice, perfect restructuring is not always possible

- ▶ What are limits to restructuring?
 - ▶ Banks vs. bonds
 - ▶ Few vs. many banks
 - ▶ Bank relationship vs. arm's length finance
 - ▶ Simple vs. complex debt structure (e.g., number of classes with different seniority, maturity, security, ...)

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- ▶ However, this may be prohibited by covenants

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- ▷ Junior debt must get a “fair” price, they are promised a face value **F**
- ▷ Because this debt is junior, it cannot get paid in the bad state since **total cash flows are 32 and face value of senior debt is 35**

$$15 = 0.5 \times \frac{F}{1.1} \Rightarrow F = 33$$

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- ▷ Because this debt is senior, it will be paid even in bad state, before old debt: it requires a lower face value and lower interest rate

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- ▷ **Optimal investment is undertaken**

CORPORATE BANKRUPTCY

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- ▶ The bankruptcy process plays a central role in economics:
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- ▶ Bankruptcy law provides a collective framework for simultaneously resolving all debts when debtors' assets are less than their liabilities:
 - ▶ rules for determining how much of the debtor's assets must be used to repay debt: **size of the pie** - the total amount paid to creditors
 - ▶ rules for determining how those assets are divided among creditors - **how the pie is divided**

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- ▶ 1984, there were approximately 62,000 business bankruptcy

- ▶ 2004, business bankruptcy filings had fallen in half to 34,000

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- ▶ Proceeds of liquidating the corporation's assets are used to repay creditors
- ▶ division of the pie follows the **absolute priority rule (APR)**:
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 - ▶ does not abolish incentive to compete; shifts incentives (compete to raise priority)
 - ▶ Creditors can raise their priority by shifting from unsecured to secured status
 - ▶ inefficient because firms delay filing for bankruptcy

DISTRESS: CORPORATE BANKRUPTCY - REORGANIZATION (CHAPTER 11 IN THE US)

- ▶ Managers of large corporations rarely choose Chapter 7. First opt for Chapter 11:
 - ▶ reorganized corporation retains most or all of its assets and continues to operate
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- ▶ Some protection for creditors as well: "best interest of creditors" test,

DISTRESS: CORPORATE BANKRUPTCY - EVIDENCE, BANKRUPTCY COSTS

- ▶ Ideal measure of the costs of bankruptcy would cover both direct and indirect costs
 - ▶ Most studies measure only the direct costs of bankruptcy, because bankrupt corporations must report these costs to the bankruptcy court
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 - ▶ Gilson and Vetsuypens (1994): turnover rates of top executives and directors were much higher for large corporations in Chapter 11 than for those not in bankruptcy
 - ▶ Hotchkiss (1995): one-third of sample firms that successfully reorganized required further restructuring within a few years

DISTRESS: CORPORATE BANKRUPTCY - EVIDENCE, DEVIATIONS FROM APR

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- ▶ How do deviations from the APR relate to the financial condition of corporations in Chapter 11?

$$\frac{EP}{UC} = \alpha + \beta \frac{UP}{UC}$$

EP: Amount paid to equity; UP: amount paid to unsecured creditor; UC: unsecured creditors' claims

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- ▶ $\beta > 0$: Deviations from APR
- ▶ $\beta \uparrow$ as creditors' payoff rate approaches 100%.
- ▶ Evidence: smooth relationship with a gradually increasing slope
 - ▶ $\alpha = 5$
 - ▶ $\beta \sim 0.3$

TAKEOVERS

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 - ▶ Friendly vs. hostile (with/without target management approval). Hostile:
 - ▶ Buy shares in market and/or public tender offers: Purchase shares directly from shareholders, overcoming management opposition for shares
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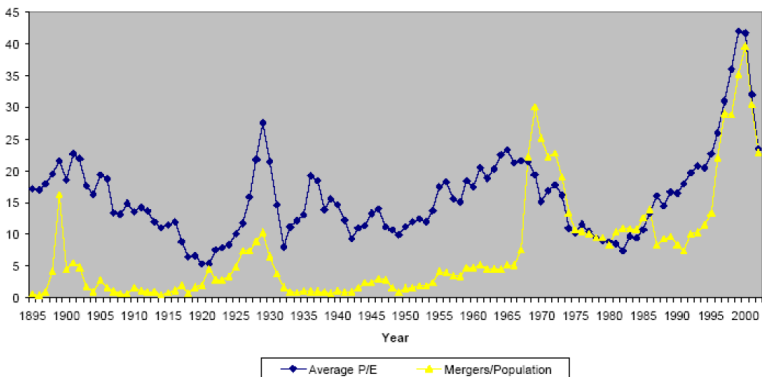
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 - ▶ Merger vs. acquisitions
 - ▶ Going private transactions (shares purchased and delisted)

DISTRESS: TAKEOVERS

► Pro-cyclicality of mergers



DISTRESS: MOTIVES FOR TAKEOVERS

- ▶ Tax gains
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- ▷ Operating synergies:
 - ▷ Improve productivity or cut costs, e.g. in R&D or advertising
 - ▷ Eliminate coordination and bargaining issues in case of a vertical merger
 - ▷ Increase in market power (vs. suppliers, customers,...)
 - ▷ Increase in bargaining power (vs. workers,...)
 - ▷ Diversification? (good for investors?)

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- ▶ Managerial gains: Removing inefficiencies due to
 - ▶ Unable or too conservative management
 - ▶ Excessive private benefit taking
 - ▶ Replace caring by ruthless managers (gains at a cost for employees)
 - ▶ Usually hostile leading to break-ups and sometimes using large amount of debt (leveraged buyout)
 - ▶ Not necessary to involve two firms nor even a change in management

DISTRESS: MOTIVES FOR NOT TAKINGOVER

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- ▷ Costs of taking over:
 - ▷ Hierarchical structure of organisation
 - ▷ Divisional rent seeking
 - ▷ Coordination problems in large organisations
 - ▷ Cost of integrating two companies with different production processes, accounting methods or corporate cultures
 - ▷ Misallocation of capital can also occur, decreasing value
 - ▷ Mergers reduce information content of stock markets

DISTRESS: TAKEOVERS, EVIDENCE

1. Analysis of stock returns around the time of tender or merger offer
2. Are diversified firms more valuable than non-diversified firms
3. Did profits (of the target) increase after merging?

DISTRESS: TAKEOVERS, EVENT STUDIES

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- ▶ Multiple bidder contest produce higher abnormal returns

DISTRESS: TAKEOVERS, EVENT STUDIES

- ▶ Caution with event studies: Market reaction can contain other (primarily positive) information about bidder and target
 - ▶ Bidders buying in cash instead of own shares experienced higher returns (again cash good and shares bad signals)
 - ▶ Targets on failed mergers trade at a premium

DISTRESS: TAKEOVERS, DIVERSIFICATION STUDIES

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- ▶ However, this depends on the period in time (Morck et al. 90) :
 - ▷ Diversifying acquisitions: lower returns in the 80's (-) than in the 70's

 - ▷ Non-diversifying acquisitions: higher returns in the 80's (7%) than in the 70's (1%)

DISTRESS: TAKEOVERS, ACCOUNTING STUDIES

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- ▶ Recent studies more positive (Andrade et al. 2001)