

# Capital Structure: Financial Distress and Information Issues

(Welch, Chapter 19-1)

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# Managerial CoC Perspective

- ▶ What determines  $E(R_{EQ})$  and  $E(R_{DT})$  from the manager's perspective?

# Maximize Price-Earnings?

- ▶ Should managers/owners maximize P/E?

# Basic Thought Experiment

- ▶ You own the entire firm today.
- ▶ You will sell it (e.g., in an IPO) tomorrow.
- ▶ Your goal is to maximize *your* wealth.
- ▶ Your tools are
  - ▶ the corporate setup,
  - ▶ the charter,
  - ▶ the capital structure,
  - ▶ etc. (anything).

# Corporate Setup

- ▶ If you design your **corporate setup** today in a way that, at any point in the future,
  - ▶ the firm takes a project that expects to lose \$1m in NPV (with probability  $p$ ); or, equivalently,
  - ▶ the firm will not take a project that expects to earn \$1m in NPV project (with probability  $p$ ),
- ▶ then how would this change your wealth today?

# IPO Proceeds

- ▶ Why should you, the *owner-entrepreneur*, care about the costs to creditors and shareholders in the distant future?
- ▶ Why care about the corporate charter?
- ▶ If the structure means the firm will not take all positive NPV projects *in the future*, who is *really* hurt?
  - ▶ time-consistency: today vs. tomorrow!

# Simple D-E Choice

- ▶ In a **perfect** market, assume a firm will be worth
  - ▶ \$60 with 20% probability, or
  - ▶ \$110 with probability 80%.
- ▶ Assume the interest rate is zero.
  - ▶ This only makes calculations quicker.
- ▶ Which capital structure is better for firm value—one that promises \$80 or one that promises \$40 in debt repayment?

## Special Case: Stupidity?

- ▶ Capital Structure was a special case.
- ▶ Stupidity did not matter in a PCM, because M&M meant investors could immediately undo stupidity.
- ▶ Not everything stupid in a really bad charter is undoable by investors later.

# Typical Financing Pyramid

- ▶ The term “financing pyramid” is usually meant to convey that firms have more (senior) debt than (junior) equity
- ▶ Should be more the case if debt is cheaper than equity;
  - ▶ think I-banks
- ▶ Tends to be more the case if firms have done poorly
  - ▶ think distressed firms, vs.
  - ▶ Tech and Pharma firms

# Chapter Outline

- ▶ This chapter discusses (non-tax-related) issues that could impact profits in the future, which can be influenced by choice of financing, incl.
  - ▶ Distress Costs
  - ▶ Debt Expropriation (and Risk-Shifting)
  - ▶ Moral Hazard
  - ▶ Inside Information

# Bankruptcy Institutions

- ▶ Article I, Section 8 of the U.S. Constitution enables the (Federal) Bankruptcy Code.
  - ▶ *Chapter 11* is reorganization.
  - ▶ *Chapter 7* is liquidation.
- ▶ A Federal bankruptcy court appoints the administrator and oversees legal expense reimbursements.
  - ▶ it's a lucrative "racket" for courts and lawyers!
  - ▶ reinforced by *best practice* claims...others do it, too!
  - ▶ often not able to contract out (e.g., arbitration)

# Deadweight Costs

- ▶ In an ICM, *if* there is a **dead-weight** cost when a firm goes bankrupt or is close to going bankrupt, what capital structure is best?
  - ▶ **Dead-weight** cost means *dissipative*, not *redistributive*.
  - ▶ Redistributive aspects do not matter. They are simply “priced in” *ex-ante*. Think payoff tables.

# Ex-Ante Concern For *Going Under*

- ▶ The following examples are always from *today's* perspective.
- ▶ Think **large** publicly-traded healthy S&P500 firm.
  - ▶ less relevant for small private and entrepreneurial firms.

# Realistic Large Firm

- ▶ This firm has assets of \$100 billion *today*.
- ▶ There is a 5% probability of bankruptcy.
  - ▶ Fewer than 5 Fortune-100 companies declared Chapter 11 in 2008-9 (WaMu Sep08 (\$328b in assets), Lehman Sep08 (\$691b), GM (\$91b).)
- ▶ If/When going bankrupt, the firm will have only \$20 billion, no longer \$100 billion.
- ▶ **Direct** bankruptcy costs will be 2% of *then* firm assets.

# Expected Bankruptcy Costs

- ▶ The *expected* cost of legal fees would/will be

$$\$20b \cdot 5\% \cdot 2\% \approx \$20m.$$

- ▶ \$20 million pays for a lot of lawyers, but it is only 0.02% of the \$100 billion firm value today.
- ▶ This force pulling capstruct towards equity is weak.

# Small and Private Firms

- ▶ Direct bankruptcy costs are much higher for small firms.
- ▶ Roughly, for firms under \$10 million in value, the legal process often takes *all* and leaves *nada* for unsecured creditors and shareholders.
  - ▶ Similar to class-action suits, where lawyers primarily serve one another.
  - ▶ The *Rule of Law* in the US has broken down for small and mid-size firms. “Possession” matters.

# Indirect Costs

- ▶ The *indirect* costs of bankruptcy can be much higher than the *direct* costs.
- ▶ Examples follow.

# What Happens To?

- ▶ If unbeknownst to you, the vendor goes bankrupt in 3 months:
  - ▶ What happens to your product warranty?
  - ▶ What happens to your paid ticket?
  - ▶ What happens to the car you purchased?

# Ex-Ante Distress Consequences

- ▶ If your customers are afraid of bankruptcy, and if there are no countervailing forces,
  - ▶ What security would this favor?
  - ▶ What would be the optimal capital structure?
  
- ▶ It need not be *actual* bankruptcy.

# Distress and Risk

- ▶ You are a fund trader. It is September now. What would you do if you realized that you are now underwater for the year?
- ▶ Would you take more or less risky bets?
- ▶ Would you consider taking negative NPV bets?

# Risk-Shifting

- ▶ Ex-post, *after* the firm has taken on a lot of debt, will equity prefer taking on more risky bets?

# Proper Asset Maintenance

- ▶ Your mortgage is modestly underwater.
  - ▶ e.g., you bought a house for \$1m with an \$0.8m mortgage, and its value has fallen to \$0.78m.
- ▶ You have just learned that your roof has a water leak. It will cost \$50k to replace it.

# Proper Divestment

- ▶ (RIM manufactured Blackberries, once the dominant mobile device.)
- ▶ As the RIM CEO, what should you do when you realize that iPhones have obsoleted Blackberries?
- ▶ Should you spend the money on more R&D (for Blackberry *Playbooks*)?
- ▶ Watch [Gregory Peck](#) vs. [Larry the Liquidator](#).

# Companies Rely on Stakeholder Trust

- ▶ Other distressing concerns can arise in financial distress:
  - ▶ customers may flee,
  - ▶ suppliers may flee,
  - ▶ talent may flee,
  - ▶ financiers may flee,
  - ▶ etc.

# Distress Costs Overall

- ▶ If distress costs are large
- ▶ What security would this favor?
- ▶ What would be the optimal capital structure?

# Convexity

- ▶ Means “accelerating” in this context.
- ▶ For modest debt amounts, far away from distress, distress costs are trivial.
- ▶ Convexity can create “self-fulfilling prophecies,” called “equilibria” by economists.

# Self-Fulfilling Prophecies

- ▶ If you are far from the debt threshold, you often internalize both losses and gains.
  - ▶ You probably take only positive NPV projects.
- ▶ As you get closer to the debt threshold, your risk-taking incentives increase.
  - ▶ You may take some mildly negative NPV projects.
- ▶ If you are underwater, your risk-taking incentives can become huge.
  - ▶ You may take really negative NPV projects.
- ▶ PS: This is also a standard-fare movie plot.

# Private Concern? Social Concern?

- ▶ Debt Ratio  $> 80\%$ :
  - ▶ *Financial firms* live constantly near distress!
  - ▶ is there a social concern?
- ▶ Debt Ratio  $< 50\%$ :
  - ▶ do they care? are they prepared?

# Competitive Forces

- ▶ Assume that distress makes firm more vulnerable to competitors.
  - ▶ How should this affect your capital structure today?
- ▶ Assume that distress makes your firm eager to fight entrants.
  - ▶ How should this affect your capital structure today?
  - ▶ Maybe just too clever.
- ▶ Importance depends on the situation.