

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 hurt?

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.

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

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!
- ▶ reinforced by *best practice*. . . others do it, too!

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.

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 towards equity is weak.

Small and Private Firms

Direct bankruptcy costs can be much higher for smaller 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*)?

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.

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.