

Is There Value in Risk Management for Corporations?

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Why is there even a question?

- Modigliani-Miller (MM) – late 1950's – “modern finance” (at least newer than modern art)
- Divide risk into diversifiable and systematic
 - Anything not directly correlated with economic cycle considered diversifiable
- Owners of companies (shareholders) can more cheaply diversify the diversifiable risk by owning a wide spread of companies
- So companies should not lower expected earnings by paying to hedge risk

What's Wrong with That?

- Carrying risk can sometimes reduce earnings – think of bond ratings, insurance ratings, etc.
- MM assume distressed firms have access to unlimited new capital with no extra costs or conditions
- But not so – at least they have higher borrowing costs
 - Paying for risk transfer to avoid costs of financial distress can increase expected long-term earnings
- Actuarial theory of firm value from de Finetti also in late 1950's made opposite assumption:
 - Distressed firm cannot raise new funds
 - Created all that ruin probability literature European actuaries talk about, and a lot of reinsurance
- Truth is probably somewhere in-between

Costs of Financial Distress

- Studies show distressed firms experience
 - Reduction in earnings
 - Reduction in capital expenditures
 - Delay in restructuring
 - Shareholders resist dilution, prefer to “roll dice”
 - Restrictive bond covenants
 - Curtailed growth and lost opportunities
- Many costs of financial distress “leak out of” realm of publicly traded firms
 - Profits or salaries for law firms, liquidation bureaus, etc.
 - So diversified shareholders don’t get them back

Raising Capital under Duress

- Issue bonds
 - Usually will require very high interest rates
 - A substantial recurring expense
- Issue stock
 - Will usually be at a steep discount to the already reduced market price
 - Reduces value for existing shareholders
 - Would add value at no cost to existing bondholders
 - Stockholders have final word but different interests
 - An agency-theory issue

Agency Theory

- Give your money to an agent to handle for mutual benefit with set incentives
- Usually conflicts of interest turn up anyway
- Management is an agent of shareholders
- Shareholders are agents of debtholders
- Once bonds are sold shareholders have it to use and may be less risk-averse with it
- Management might have different priorities of their own, depending on bonus plan
- Insureds are also debtholders which increases influence of the debtholders for insurers

Risk Transfer and Agency Theory

- Taking less risk might make management and bondholders less nervous
- In itself that can save firm money
- Also can be a signal to prospective bondholders that firm will not be too risky
- Agency conflicts increase under financial distress
- Shareholders suddenly have little to lose and may prefer rolling the dice to cost of funds
- Risk transfer thus a signal to debt holders that distress will be avoided

Insurer-specific Issues

- Debtholders are the customers
 - Reserves are main liability, owed to customers
- Ongoing relationship so management and shareholders have to be more accommodating to debtholders = customers
- Sales and profit margins can be hurt otherwise
- Mutual companies especially

Actuarial Model of Firm

- Firm value is expected present value of future payments to owners
- Payment made sooner has higher present value but increases risk of insolvency
- Balancing act to find right capital level and dividend policy

Impact on Claims Ratings

- S&P and Best's Ratings depend on financing available, including reinsurance
- Strength of financing directly relates to claims paying ability
- Higher rating improves access to markets and in some cases allows higher rate levels

Median Results by S&P Rating

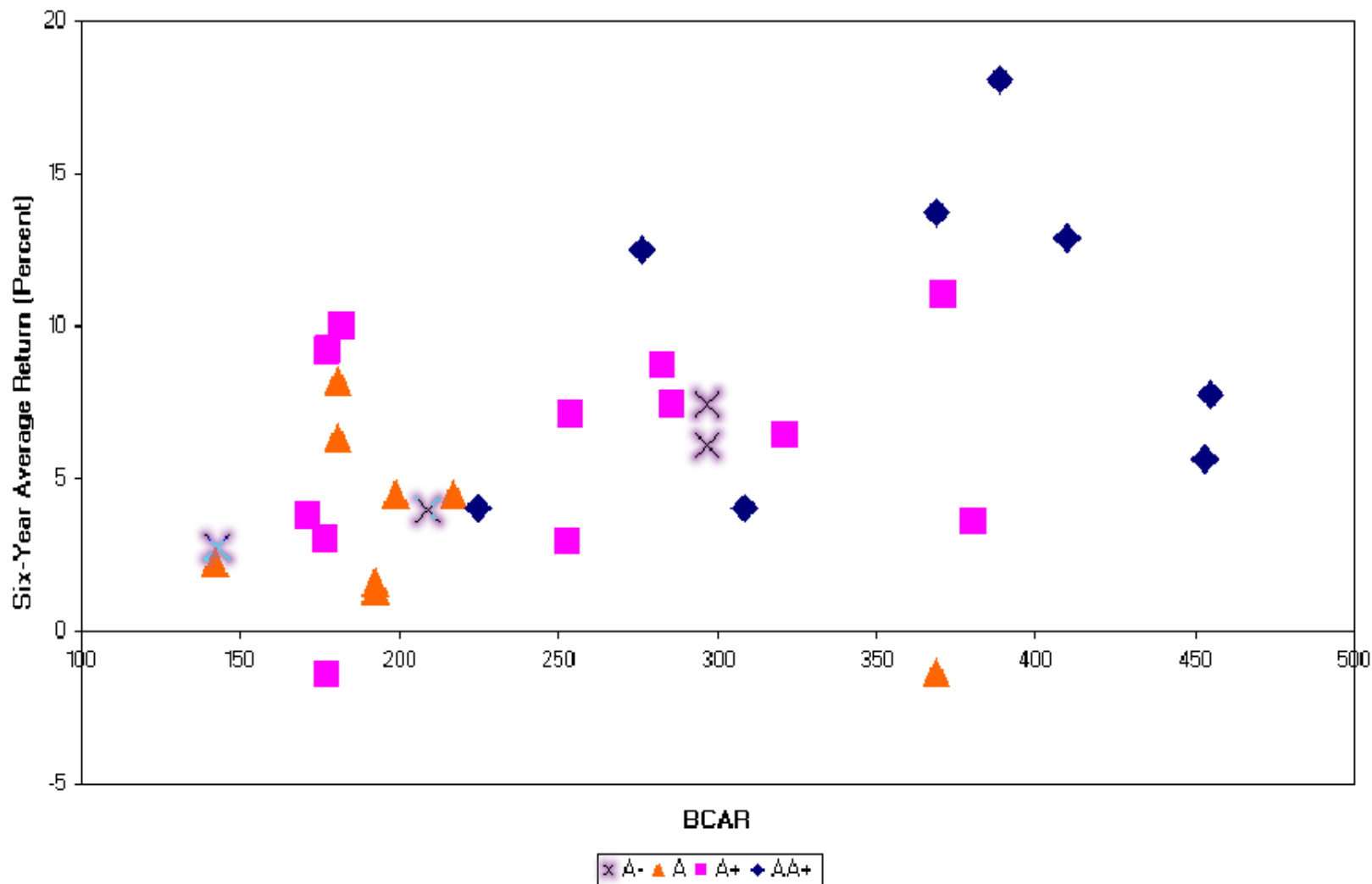
	AA	A	BBB
Surplus	\$5.62B	\$5.58B	\$1.32B
Debt %	9.7%	23.3%	25.7%
Return	11.8%	8.6%	7.4%

Findings of Some Pricing & Growth Studies

- Insureds demand price discounts of 10 – 20 times the expected cost of the chance of insurer default (Phillips, Cummins, Allen)
- Sommer:
 - 1% decrease in capital gives 1% loss in pricing
 - 1% increase in standard deviation of earnings leads to 1/3 of 1% decrease in pricing
- Epermanis and Harrington:
 - Ratings upgrade worth 3% in business growth
 - Downgrade can produce 5% to 20% drop
- Grace, Klein and Kleindorfer:
 - Higher rated homeowners insurers can charge more but state insolvency funds can distort this

Return Correlates with Best's BCAR Ratio

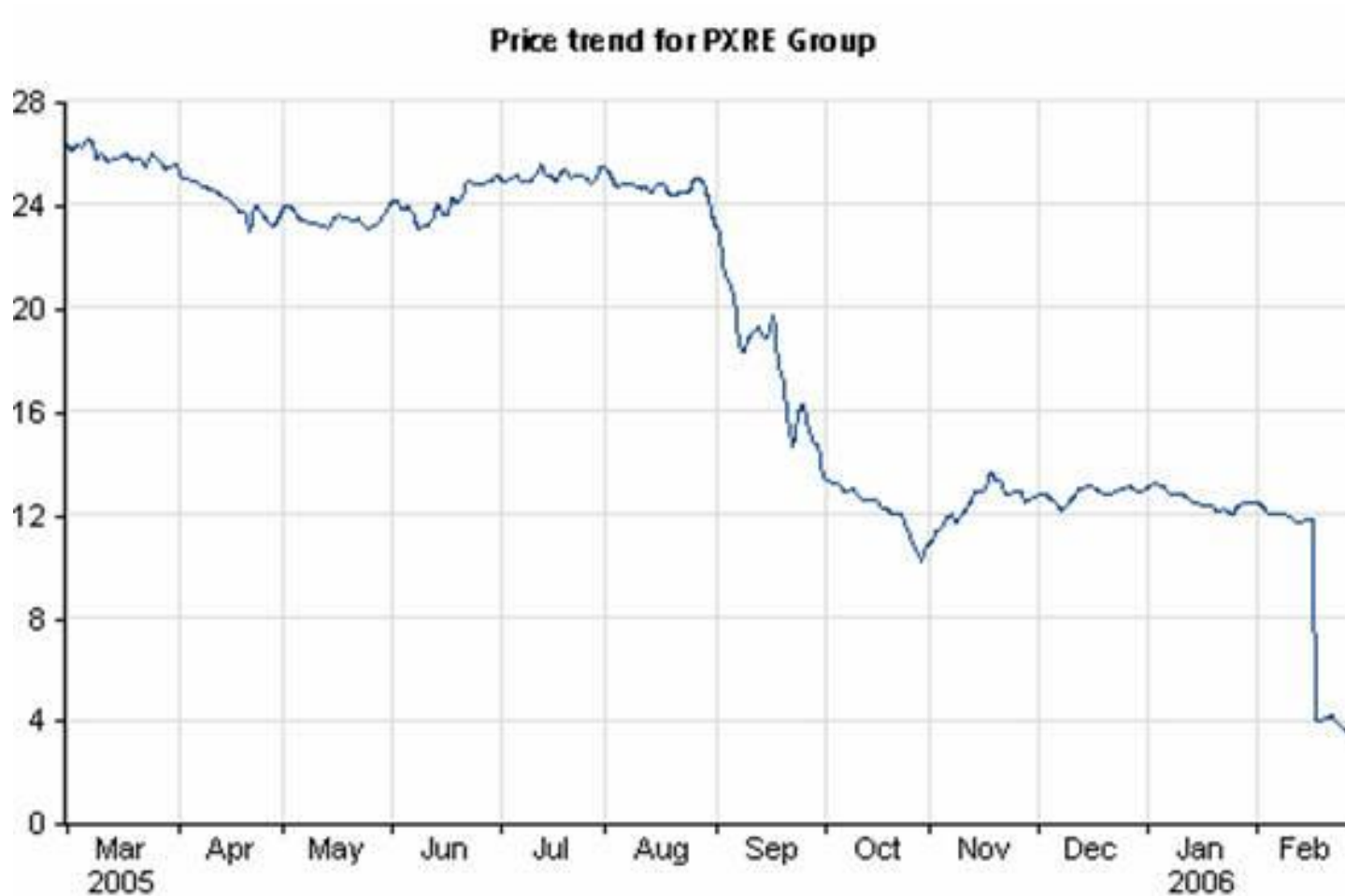
A measure, admittedly imperfect, of relationship of capital to exposure of the company



Stock Market is the Harshest Judge

Example – PXRe – Typical of Many

Best's: 04/29/05 A, 09/15/05 A u, 09/30/05 A- u,
12/21/05 A-, 02/16/06 B++, 02/24/06 B+ u



Similar for Financial Companies

- Empirical findings
 - Andrade and Kaplan study of distressed banks (1998)
 - Lost costs = (10% to 23% of pre-distress capital) x (prob. of distress)
 - Almeida and Philippon study of banks (2008) includes stock market risk reaction
 - (Cost after risk adjustment) ≥ 3 x (cost ignoring risk adjustment)
- For distressed insurers, market cap reaction often a multiple of financial loss
 - Similar to Almeida / Philippon findings

Hedging Strategies Observed

- More hedging and more cost-effective with:
 - Higher market-to-book ratio
 - Cause vs. effect?
 - Distress costs to shareholders likely higher
 - Higher R&D expenditures
 - Ongoing capital raising likely to be needed
 - View future value as higher than current so any distress costs would be leveraged
 - Firms with higher debt
 - Debtholder probably have more of a say, need to be kept happy
 - FX exposures
 - Not a risk they are trying to make money by taking
 - Often efficient to hedge
 - Less liquidity, less diversification, interest rate, weather and commodity exposure
 - Risks incidental to the business – airlines hedge oil prices but oil companies don't; gold mining companies are not helped by hedging gold price, etc.

Conclusions

- Insurers don't believe Modigliani & Miller anyway – wouldn't be corporate insurance
- Still knowing where it goes wrong helps understand the business
- There are good reasons to hedge, but also bad reasons
- E.g., with weak corporate governance, management tends to hedge more than firm value advantage would call for