Value Creation Through Risk Management: A Corporate Finance Perspective

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Context

- Emphasis in mathematical finance tends to focus on <u>tools and instruments</u> for risk management.
- Alternatively, efforts are devoted to the <u>application</u> of risk management concepts
- Today, I want to address a fundamental issue: how do we justify devoting resources, intellectual and financial, to the practice of <u>corporate</u> risk management? How does RM contribute to the creation of value? Why RM?

Context continued

- To justify RM is not a trivial task. The arguments against RM are quite cogent at a suitable level of abstraction:
- RM is basically useless since powerful (market-) forces are at work to re-align prices in both financial and product markets after an external schock, re-establishing profitability for flexible business organizations.
- Even more cogent is the argument that RM at the level of the firm is sub-optimal when shareholders are quite capable to manage risk through diversification
- Related to the above is the argument that ‘business is inherently risky and equity markets provide an appropriate reward to shareholders for bearing risk.’

The Focus of RM

or -which risks should be managed?

- Closer inspection provides the insight that business firms face two distinct sources of risk:
- Product and ‘business’ risks, based on uncertainties of customer acceptance, product quality, input costs, technological change and similar factors. All are -- to some extent at least -- subject to managerial action and represent indeed the competitive advantage of the firm.
- In contrast, there are risks that derive from financial markets, interest rates, exchange rates and traded commodity prices. Risks can be ‘sold’ into the market at close to zero expected cost.

The Essence of the Argument for Risk Management

- Because of market imperfections, such as agency costs, the cost of raising external funds, the cost of financial distress and and rising corporate tax rates, RM at the corporate level creates value.
- Other arguments for RM, such as the cost of hedging and information asymmetries between managers and shareholders turn out to be largely spurious in the presence of well informed, rational institutional investors.

Mitigating the Underinvestment Problem

- In a world of imperfect contracting, the interests of managers, shareholders, bondholders, and employees, might be at odds.
- In particular, firms with risky debt outstanding and low firm value may not purse optimal investment behavior because rational managers may choose <u>not</u> to invest even in projects with positive NPV's, as the realization of these investments primarily benefits bondholders.(Smith et al., 1990; Myers, 1977).
- RM can reduce the risk of investment projects – a smaller range of possible outcomes over all states of the world – which makes it therefore less likely that the firm finds itself in situations in which the underinvestment problem occurs (Smith, 1995; Bessembinder, 1991; Mayers and Smith, 1987).

Reducing The Asset Substitution Problem

- As shareholders have a call option-like claim on the firm's assets (e.g., Mason and Merton, 1985), Managers acting on behalf of shareholders have incentives to shift towards riskier investment projects
- Bondholders, anticipating this opportunistic behavior, protect themselves by demanding higher returns, or by designing restrictive debt covenants (Smith and Warner, 1979).
- Corporate risk management may prevent firm value from dropping off to levels at which there are strong incentives to increase risk largest (Smith, 1995; Campbell and Kracaw, 1990).

Behavior of Undiversified Managers

- Additional agency issues may arise because of the fact that shareholders can usually diversify away the idiosyncratic risk of their positions, whereas for managers this is often difficult.
- Such circumstances prompt managerial decisions, such as the engagement in conglomerate mergers or suboptimal debt levels, that benefit managers, by lowering the risk attached to their wealth positions, while they may not be beneficial to shareholders. (Bodnar et al., 1997; Berger and Ofek, 1995; Comment and Jarrell, 1995)
- Lastly, since RM reduces the risk attached to management's human capital, the level of management compensation might decrease as well (DeMarzo and Duffie, 1995).

Efficiency and Effectiveness of Management Compensation

- An important means to harmonize managers' and shareholders' interests consists of management compensation schemes, which tie remuneration to various measures of corporate performance, such as earnings or stock price movements.
- Compensation systems based on stock ownership may, induce risk avers behavior of undiversified managers; those based on stock options will induce risk seeking behavior (Bartram 2000).

Efficiency and Effectiveness of Management Compensation cont'd

- As a result, due to the influence of risks unrelated to management performance on share price, management compensation plans are rendered less effective, as they may reward poorly-performing and punish properly-performing managers.
- RM can reduce the impact of unrelated financial risks on firm value and thus strengthen the relationship between stock price and management performance. At the same time, it may also become easier to distinguish between efficient and inefficient managers (Stulz, 2002).

Coordination of Financing and Investment

- Discrepancies between current cash flows and investment opportunities will force a firm to carry cash balances, increase dividends and raise external funds. All of this is <u>costly</u>
- RM can minimize discrepancies between internal cash flows and planned investment expenditures by reducing the cash flow surplus when cash flows exceed investment expenditures and providing cash when cash flows lie below investment expenditures (Froot et al., 1994; Froot et al., 1993).
- Note, RM is limited to matching the availability of internal cash flows to the need for investment funds.

Bankruptcy and Financial Distress Costs

- Higher leverage increases firm value through the tax-advantage of debt.
- It also puts financial stress on the firm, as the interest and principal payments of debt constitute obligations to which bondholders are legally entitled to.
- As a result of these and other contractually fixed obligations to suppliers and employees, the firm may encounter financial distress and, ultimately, bankruptcy

Bankruptcy and Financial Distress Costs

cont'd

- Bankruptcy – and also the probability of future bankruptcy – creates substantial costs for the firm, which have a negative impact on firm value. These costs have two components: direct and indirect costs of financial distress (e.g., Ross et al., 1999).
- <u>Direct</u> costs are related to the costs incurred in the bankruptcy proceedings. In the US they are estimated to be 1-3 percent of total firm value (Weiss, 1990)
- Among these are cost of employee retention, replacement, customer concerns about warranties and spare parts, supplier reluctance to invest and carry inventory.
- Empirical evidence suggests that the <u>indirect</u> costs are substantially larger than the direct costs and can reach 20 percent of firm value (Cutler and Summers, 1989).

Reducing Corporate Taxes over Time

- When firms face convex tax regimes, they can lower their tax burden through corporate hedging by reducing the volatility of pre-tax income (Graham and Smith, 1999).
- The convexity of tax schedules can be due to marginal tax rates rising progressively with taxable income (Mayers and Smith, 1990).
- Further, tax regime convexity can be caused by limitations of special tax preference items, such as limits on the number of years to carry losses forward or backward. Thus, in case of low income or losses, a firm may not be able to completely exploit the benefits of such provisions (Stulz, 2002).

Conclusion

- Several surveys indicate that non-financial firms increasingly employ corporate risk management to shield their performance against financial risks, such as foreign exchange and interest rate risk, and even commodity price risks(e.g., Bodnar et al., 1998; Berkman et al., 1997).
- While the various arguments all require the existence o certain market ‘imperfections’, and while thargumnts are in part redundant and can even contradictory, depending on th assumptions used, corporate finance theory provides cogent arguments that RM creates value at the level of the firm.