A Theory of Risk Capital

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Risk capital gives financial firms the cushion they need to protect liability holders from unexpected losses. It reduces debt overhang that could limit borrowing capability and makes the costs of bankruptcy or firm distress more remote. However, adding risk capital can only benefit firms’ balance sheets if it is allocated efficiently, according to a study co-authored by Isil Erel of the Ohio State University Fisher College of Business.

The study, “A Theory of Risk Capital”, was co-written by Erel, Stewart C. Myers at MIT Sloan School of Management, and James A. Read Jr. at The Brattle Group Inc. in Cambridge, Mass. In the study, Erel, Myers, and Read focus on diversified firms with safe and risky businesses in their portfolios. The firms have customers and counterparties who are not willing to bear significant default risk.

Risk capital must be allocated to assess profitability, to make investment decisions, to price products and services, and to set compensation. Efficient risk-capital allocation has to satisfy two requirements, according to the study. First, there can be no risk that changes in the business portfolio would affect the credit quality of the firm’s liabilities. Also, firms have to avoid shifting risk capital from one business to another.

Firms meeting those requirements have to focus on their marginal default rate to allocate risk capital. The marginal default rate is the derivative of the value of the firm’s option to default with respect to a change in the business size, according to the study. The required amount of risk capital depends on the target credit quality and on the risk of the business portfolio. Businesses with the largest marginal default values should receive the most risk capital and be charged the most for the costs of risk capital. Also, risk-capital allocations should be updated frequently.
Operating with multiple business lines reduces the amount of risk capital required to achieve a given credit quality, according to the study. However, the study notes that there are some disadvantages. There is the risk that credit sensitivity will vary among some creditors, customers, and counterparties. One solution may be to give collateral to some liability holders. Another solution is to specialize rather than to diversify.

Firms’ usage of risk capital can help them expand. However, firms have to ensure that risk capital gives risky businesses in the portfolio “free passes” to expand, which would increase the default risk, according to the study. The possible consequence of expanding risky businesses is operating at a lower credit quality. To minimize effects on credit quality, firms should not use risk capital that is fixed in the short term. With a fixed amount of risk capital, risky businesses could only expand if risk capital is moved from safer business lines or if credit quality is degraded.

There are some disadvantages to risk capital. It is subject to corporate income tax and it may increase agency costs and monitoring costs paid by shareholders. Adding risk capital could give some liability holders better credit quality than they will pay for or that they need. Despite these disadvantages, financial firms must put up enough risk capital to maintain an acceptable credit quality for their obligations. Any asset or activity with uncertain returns requires risk capital. By focusing on marginal default values, credit quality, and risk within the business portfolio, firms can use risk capital efficiently to help improve their bottom lines.

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The Risk Institute at The Ohio State University Fisher College of Business brings together practitioners and researchers to engage in risk-centered conversations and to exchange ideas and strategies on integrated risk management. Through the collaboration of faculty, students and risk management professionals, The Risk Institute addresses risk at a broad cross section of industries and is dedicated to developing leading-edge approaches to risk management. Visit www.fisher.osu.edu/risk for more information.

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