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Volatility-based Effects on Shareholder Value: Alliance Activity in the Computing Industry

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We use an event-study analysis to understand how alliance activity affects firm risk. The risk measure is the implied volatility of a firm's stock price and the events are alliance announcements to the market. We build on the previous event-studies in the alliance literature that focus on the change in shareholder value by taking the first step in delineating what part of that value arises from the changes in the firm's risk. The analysis reveals that a number of factors within a firm's control can be used to manipulate risk exposure in an alliance, including the similarity of the firm's and the alliance's core activities, the governance form of the alliance, and the function of the alliance.

A primary goal of the firm is to increase shareholder value. Shareholder value is a firm's market value computed as the sum of its future net cash flows discounted by an expected rate of return. The expected rate of return is proportional to the firm's risk exposure due to shareholders' aversion to risk, where risk is the volatility of the future cash stream. Thus, a firm can fulfil its goal by taking actions that have a net effect of either: (1) increasing expected future cash flows without offsetting increases in the risk; or (2) decreasing such risk without offsetting decreases in cash flow.

A firm's alliance activity has the potential of affecting both cash flows and firm risk in beneficial ways. Alliance activity provides access to a new set of resources that may create new appropriable value, even to the point of being a basis of competitive advantage (Dyer & Singh, 1999). As well, firms can lower their exposure to technological, demand and competitive uncertainties through certain alliance types by sharing risky investments and creating options in uncertain environments (e.g., Bowman & Hurry, 1993; Hagedoorn, 1993; Kogut, 1991).

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The empirical evidence of net alliance benefits has been mostly supportive. For example, many event-study based analyses reveal significant positive cumulative abnormal returns—a sign that shareholders believe the alliance activity signalled by an announcement to the market will be valuable to the firms involved (e.g., Das, Sen & Sengupta, 1998; Koh & Venkatraman, 1991; McConnell & Nantell, 1985; Mohanram & Nanda, 1996; Park & Kim, 1997). However, the measure, cumulative abnormal returns (CAR), does not separate alliance-related cash flow changes from alliance-related risk changes. Such a separation of effects may be valuable. It may lead to finer adjustments in the choices that firms make in their alliance activity in order to better optimize the combination of both effects.

The focus in this paper is on the alliance-related risk effects calculated using an event-study methodology. We offer this as the first step in understanding the separate effects; we begin to unbundle the risk effect from the full alliance effect on shareholder value. We explore how the market-perceived risk changes when a firm chooses to engage in alliance activity, and specifically when the firm can select alliance characteristics including: (1) the relatedness of the alliance activity to the firm; (2) how the alliance is governed; and, (3) what function the alliance serves for the firm.

Theory

Sources of Risk

Firms face many types of risk from both outside sources and inside forces. Demand uncertainty is the risk entailed in the volatility of future sales of a product in the market; generally, new and unfamiliar products face greater demand uncertainty. Competitive uncertainty is the risk entailed in the volatility of future impacts of rival actions, such as entry, exit, price reductions, product introductions, etc. Regulatory uncertainty is the risk entailed in the volatility of future impacts of governmental rules affecting the firm's operations, taxation, inter-firm actions, etc. Other external sources of risk include: the uncertainty in the external progress of technologies underlying the firm's processes; the uncertainty in macro-economic conditions leading to changes in unemployment, interest rates and market returns; the uncertainty in the supply and price of many raw goods, like fuel; the uncertainty in the costs and effectiveness of distribution channels; the uncertainty of the complementary goods supply and demand; etc.

Besides the numerous potential sources of external risk, firms also face risks from inside. These are potentially less threatening because the firm has the potential to measure and control them directly. Technological uncertainty is the risk entailed in the probability that a firm's innovation may not work as required; generally, more radical innovations face greater technological uncertainty. Operations uncertainty is the risk entailed in the variance in a firm's output—in its quantity and quality—and in the cost efficiency of production. Bankruptcy uncertainty is the risk of the firm being unable to meet its debt obligations. Firms may face further risks due to the type of product created (e.g., risk of product liability litigation), how that product is created (e.g., risk of environmental damage), who it employs (e.g., risk of unionisation), and whether its employees are doing what they are supposed to do (e.g., risk of fraud, misappropriation, misuse of company resources, or criminal activity).