



Product market relationships and cost of bank loans: Evidence from strategic alliances

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ABSTRACT

This paper examines the relation between strategic alliances and non-financial firms' bank loan financing. We construct several measures to capture firms' alliance activities. The key finding is that borrowing firms with active alliance involvement experience lower cost of bank loans. The reduction of borrowing cost is strongest for financially unconstrained firms and firms with high G-index and intensive monitoring from institutional investors. We also relate various characteristics of alliance agreements to the cost of bank borrowing, and find evidence supporting market power hypothesis and organizational flexibility hypothesis. We further report that allying with a prestigious partner (i.e., S&P 1500 firms) provides certification effect that lowers bank loan cost. In addition, firms positioned in the center of the alliance network enjoy lower cost of bank loans. Lastly, we document that firms engaging in alliance activities expand their debt capacity and are less likely to use collaterals and covenants in their bank loan contracts.

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1. Introduction

As an inter-firm organizational form, the importance of strategic alliances in American industry has been increasing sharply (Lerner and Rajan, 2006). Commonly defined as voluntarily initiated organizational agreements between firms, corporate alliances bring together otherwise legally independent firms to provide access to complementary resources and strengthen their competitive positions (Baum et al., 2000; Gulati, 1995). Corporate alliances involve substantial relation-specific investments and long standing cooperative mechanisms (Baker et al., 2002; Garvey, 1995; Gay and Dousset, 2005), and such inter-firm collaborative activities create business networks that can be an important source of value (Jensen and Meckling, 1991). While a large management literature has explored the patterns, motivations and benefits for firms to enter into alliance agreements (Das et al., 1998; Eisenhardt and Schoonhoven, 1996; Gulati, 1995; Stuart et al., 1999), knowledge is still scant regarding the financial consequences of corporate alliance activities (Lerner and Rajan, 2006).

The main point of this paper is to investigate whether and to what extent non-financial firms' alliance activities affect their bank financing. Compared to mergers and acquisitions, strategic alliances offer another important option for firms to grow (Habib

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and Mella-Barral, 2006; Lindsey, 2008; Robinson, 2008). Existing studies have demonstrated that strategic alliances are associated with significant wealth effects by examining the announcement returns of alliance agreements (Bodnaruk et al., 2011; Chan et al., 1997). Explanations regarding the benefits provided by alliance involvement to partnering firms are multifold. For example, strategic alliance agreements can function as a device to enhance managerial incentives and mitigate the inefficiency of resource allocations, thus reducing the agency problem (Robinson, 2008). Strategic alliances also add value through increasing organizational flexibility (Bodnaruk et al., 2011; Chan et al., 1997). Firms engaging in inter-firm collaborative agreements can share and exchange valuable information, technology and know-how (Gomes-Casseres et al., 2006). Legally enforceable contracts between partnering firms and the network formed by prior alliance relationships can deter opportunistic behavior (Chan et al., 1997; Parkhe, 1993; Robinson and Stuart, 2007). Nonetheless, most of the existing literature focuses on the benefits of engaging in alliance activities accruing to equity holders. It is equally crucial to understand how other stakeholders (e.g., debt holders) perceive the economic meaning of alliance activities and response accordingly.

In this paper, we intend to fill the void in the literature. We collect a sample of U.S. public firms that received bank loans during 1991 to 2007 from Loan Pricing Corporation's Dealscan database. Relying on Thomson Financial SDC platinum (SDC) Strategic Alliance database, we identify whether our sample firms had engaged in any alliance partnerships within three years prior to the loan initiations. For borrowers involved in alliances, we trace each pair of partnership and construct several measures to capture various characteristics of firm alliance activities, and relate them to the cost of bank loans.

The key finding is that firms actively involved in alliance activities experience significantly lower cost of bank debt, compared to the group of firms without any alliance experience. To examine the potential endogenous choice of entering into alliance agreements, we use propensity score matching (PSM) method to form a matching sample from both treatment (i.e., firms with alliance experience) and non-treatment (i.e., firms without alliance experience) groups on a set of observable characteristics to remove relevant differences. Our main finding is robust using the propensity score-matched sample.

Entering into alliance agreements often requires a firm to ring-fence a sizable pool of resources, which will negatively affect a firm's short-term operational flexibility if the firm is financially constrained and thus unable to absorb shocks to short-term cashflows. Therefore, a trade-off exists between the capital commitment in the long-run and the operational flexibility in the short-run, depending on a firm's financial condition. To test this intuition, we investigate whether private lenders take into consideration the potential downside of alliance activities and factor it into the process of loan price formation. We classify our sample firms as "financially constrained" and "financially unconstrained" according to whether they have access to the commercial paper market (Almeida and Campello, 2007; Calomiris et al., 1994). We calculate the correlation between a firm's cash flow from current operations and its industry level median R&D expenditures to identify its hedging needs (Archarya et al., 2007). We find that financially constrained firms with alliance experience face higher cost of bank loans, which reveals a clear trade-off as we detail above. More strikingly, we find that the net marginal effect of having alliance experience on loan spreads is significantly different for constrained firms with high hedging needs and low hedging needs. For constrained firms with high hedging needs, the net marginal effect is positive, which means ring-fencing resources for long-run interfirm collaboration weakens a firm's ability to service the debt obligation and hoard liquidity assets to finance other future investment opportunities. Our results are robust when we further control for firms' access to long-term capital market.

We further investigate several channels through which alliance activities may benefit borrowing firms for lower cost of bank loans. We explore the interplay between alliances and other governance mechanisms and the effect on loan spreads. We find that engaging in alliance activities lead to reduction of loan cost for borrowing firms having weaker shareholder rights and higher institutional ownership. We posit that firms strategically entering into alliance agreements with certain characteristics can achieve increased market power or organizational flexibility. In line with our prediction, we find that firms engaging in related alliances, marketing alliances and joint venture agreements are associated with lower loan spreads. We also show that unrelated alliances and research & development (R&D) agreements result in higher loan spreads. Interestingly, we find that a borrower participating in joint R&D with a partnering firm in a dissimilar industry experiences low borrowing cost from banks. This result is consistent with the notion that alliances add organizational flexibility to an allying firm, which allows the firm to experiment with its partners' resources to explore technological opportunities in a new industry without immediate commitment (Balakrishnan and Koza, 1993; Doz, 1996).

Faced with uncertainty about borrowers, banks rely on the prominence of their affiliates to make judgments on the credit worthiness (Gande et al., 1997; Puri, 1996; Stuart et al., 1999). Consistent with this notion, we document that allying with S&P1500 companies significantly lowers the loan price, and the effect is strongest for firms lacking in reputational capital (i.e., non-S&P1500 firms). Moreover, we find that when both borrowers and partners are non-S&P1500 firms, there is an inverse U-shaped relation between the frequency of alliance participation and loan spreads. The result indicates that a borrowing firm can benefit from active involvement in alliance activities for lower cost of bank loans when both partnering firms lack reputational capital.

Although network analysis is somewhat new to finance literature, it has been well adapted to analyze the network among venture capitalists (Hochberg et al., 2007, 2010), the connection of stocks in the stock markets (Tse et al., 2010), and the social network among top executives (Fracassi and Tate, 2012). Our network measures capture the relative position of a firm in the product market network and yield striking results. Our findings indicate that borrowing firms central in the network receive lower cost of bank loans. We recognize that our network measures may capture the size effect in the sense that larger firms may participate in more alliances and tend to be in the central of the network. Similarly, our network measures may also capture other firm or industry characteristics. To address this issue, we employ a two-stage regression procedure following Yu (2008). In the first stage regression, we regress our network measures on firm size, proxy for growth opportunity, several industry

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