A. Jolink: Innovation by Combination: Start-up Alliances and the Impact of Venture Capital

Abstract

This study examines alliance formation of innovative start-ups and the impact of venture capital. Using a large database of almost 40.000 venture-backed firms, we find that sharing a common venture capital investor increases the probability that two firm form an alliance. We also find that neither the size of portfolio of the venture capitalist nor the amount of venture capital investors funding the alliance participants are significant factors influencing alliance formation. For innovative start-up firms, which are constrained in their resources, network and experience, VCs' hands-on experience with similar start-ups in their portfolio can help start-ups to form their first strategic innovation partnerships.

Introduction

A growing body of literature finds evidence that venture capital investors take on a value-added role for their portfolio firms supporting them in matters of business development, social network and formation of alliances (Gorman & Sahlman, 1989; Megginson & Weiss 1991; Sorenson & Stuart, 2001; Colombo et al. 2006). Lindsey (2008) has argued that sharing a common venture investor increases the probability that two firms form an alliance. Within this body of literature only small attention has been devoted to the question whether venture capital investors facilitates cooperative activities among their portfolio start-up firms. In particular, start-up firms can benefit from this value-added role, as these young firms are constrained in their social, technical and commercial resources (Gulati, 1998; Baum et al., 2000). Previous studies indicate that venture-backed technology-based start-ups more frequently form alliances than firms which are funded by US government grants (Hsu, 2006). Wang et al (2012) have found that venture capital firms treat alliance formation as a substitute for capital infusion with start-up firms, in part to mitigate risks. This does not answer the question whether sharing a common venture capitalist also substantially boosts the alliance behavior of start-ups, possibly aided by the size of venture capitalists' portfolios.

This article sets out to, first, replicate and extend earlier findings that alliances disproportionately more frequently occur if the partnering firms are funded by the same venture capital investor (Lindsey, 2008). We do so by extending the longitudinal dataset with worldwide alliances, formed by 36432 unique firms and information about 38180 VC financing rounds during a 10 year period (2003-2013). Second, in order to explore the effect of sharing a common venture capitalist on the formation of alliances for innovative start-up firms, a subsample of alliances is examined in which at least one of the allying firms is a start-up. We will control our outcomes for the size of venture capitalists' portfolio.

In the empirical section of this article, a sequenced conditional logistic regression model is introduced, making the probability of an alliance occurring to be interdependent to previously realized partnerships. The probability of each realization of an alliance is calculated based on the changing number of potential alliances over time which could have occurred instead of the realized partnership. Furthermore, three different predictor variables for venture capital financing are used to control the effect of sharing common venture capital investor on the formation of alliances.

The estimation results confirm that sharing a common venture capital investor has a statistical significant positive effect on the probability that two firm form an alliance. This result aligns with the findings of Lindsey (2008). Second, the results also show that if at least one of the partnering firms is a start-up, the likelihood of an alliance occurring significantly decreases. This is consistent with the expectations that start-ups have problems to form alliances, because they are not sufficiently developed to start cooperative activities, face high costs to find a feasible alliance partner and fear of expropriation of intellectual property through the partnership (Hsu, 2006). However, using the subsample of alliances where start-ups are involved, the results indicate that sharing a common venture capitalist increases the probability that two firms, of which at least one firm is a start-up, form an alliance.