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Acquisitions of start-ups by incumbent businesses A market selection process of "high-quality" entrants?

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ABSTRACT

We analyze the frequency and nature by which new firms are acquired by established businesses. Acquisitions are often considered to reflect a technology transfer process and to also constitute one way in which a "symbiosis" between new technology-based firms (NTBFs) and established businesses is realized. Using a micro-level dataset for Sweden in which we follow new entrants up to 18 years after entry, we show that acquisitions of recent start-ups are rare and restricted to a small group of entrants with defining characteristics. Estimates from competing risks models show that acquired start-ups, in particular by multinational enterprises (MNEs), stand out from entrants that either remain independent or exit by being much more likely to be spin-offs operating in high-tech sectors, having strong technological competence, and having weak internal financial resources. Our overall findings support the argument that acquisitions primarily concern NTBFs in market contexts where entry costs are large, access to finance is important and incumbents have valuable complementary capabilities and resources.

1. Introduction

New firms are vastly heterogeneous, and much research focuses on the question of what makes a successful start-up in terms of post-entry performance. Start-ups are subject to a market selection process, and analyses of their post-entry dynamics provide insights regarding which types of firms manage to get established in the market. In a summary introduction to a special issue on the post-entry performance of start-ups, Audretsch and Mata (1995) indeed maintain that "what emerges from the studies of the entry process is that it is what happens to firms subsequent to their entry that is at least as important as the entry process itself" (p. 415).

We focus in this paper on a particular aspect of post-entry dynamics that so far has received rather little attention in the empirical literature on start-ups, namely the frequency and nature by which established firms acquire recent start-ups. Based on a full population micro-level dataset for Sweden, we identify different types of new firms, which we follow up to 18 years after entry. We estimate competing risks models and test a number of hypotheses with regard to which types of entrants are acquired and by which types of acquiring firms. Our analyses provide new empirical insights into the interplay between recent start-ups and established businesses as evidenced by acquisitions.

Acquisitions reflect a specific form of market selection process, where established firms purposefully select particular entrants as acquisition targets. They constitute an interesting post-entry phenomenon to study in the context of start-ups for many reasons. From the perspective of new firms, selling the business to an incumbent firm and earning returns through the "market for ideas" has been advanced as a warranted commercialization strategy for start-ups (Gans and Stern, 2003). Many start-ups face difficulties in, for example, securing financing for their operations. Being acquired by a financially strong incumbent may be one means to ensure financing as well as continued development

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of the technology or idea the start-up is based on Utterback et al. (1988) and Graebner and Eisenhardt (2004). From the perspective of incumbent firms, acquiring new, innovative entrants is a way to complement in-house R&D and to strengthen and diversify technological capabilities (Granstrand and Sjölander, 1990; Ruckman, 2005; Desyllas and Hughes, 2008). Lindholm (1996b) holds that the growth of new technology-based firms (NTBFs) creates a market for technology that complements other types of technology markets. Many firms also report that acquisitions of small entrepreneurial entrants are an important part of their corporate strategy.[1]

The motives of the acquiring firms and the potential consequences for the acquired start-ups show that acquisitions could be a "win-win" post-entry event, reflecting a technology transfer process (Granstrand and Sjölander, 1990; Bonardo et al., 2010). In fact, one could argue that acquisition of start-ups by incumbents is one means by which the potential economy-wide effects of novelties developed by innovative entrants are realized. The literature on "entrepreneurship systems" (Lindholm, 1996a; Lindholm-Dahlstrand, 1997), as well as Baumol's (2002) argument of a "David-Goliath symbiosis," holds that innovative small firms and established businesses complement each other. A main idea in both Lindholm-Dahlstrand's and Baumol's frameworks is that the classic Schumpeterian discussion of "small versus large" in innovation is misleading. Instead, new entrepreneurial firms and incumbents have their respective advantages at different stages of the innovation process. New entrants bring in new technologies and innovations but may lack complementary resources to scale up, refine, and extend them. Larger established firms with global sales networks and resources can enhance or embed the novelties developed by the small entrants into existing products and production processes and bring them to a global scale. Acquisition of innovative entrants is one way in which this can happen. This type of interaction between entrants and established firms might naturally be conducive to the overall innovativeness and growth of the economy (Lindholm-Dahlstrand, 1997; Falck, 2009).[2]

Despite the role that interaction between new entrants and established businesses through acquisitions may play, there is a dearth of systematic studies that focus directly on assessing acquisition as a post-entry trajectory of start-ups. Most studies of the post-entry dynamics of recent entrants direct their attention to survival and growth in sales or employment (Santarelli and Vivarelli, 2007). Likewise, the literature on acquisitions (including mergers) typically focuses on larger and more established companies that are publicly traded (Veugelers, 2006; Hussinger, 2010). Recent M&A research focuses on the effect that M&A has on innovation of acquiring firms (Cefis and Marsili, 2015) as well as asymmetries in effects between acquiring and targets firms (Szücs, 2014). Other recent research focuses on how the technological overlap or relatedness of capabilities between the acquisition target and the acquiring firms influence M&A success (Sears and Hoetker, 2014; Hussinger, 2010) and characteristics of firms and CEOs who are inclined to acquire other firms (Malmendier and Tate, 2008). Although some recent papers focuses on M&A activity of also smaller firms, such as Patzelt et al. (2007), Cefis and Marsili (2015) and Hussinger (2010), analyzes that directly focuses on acquisitions of new rather than small firms are rare.

There are still increasing calls for empirical analyses of the interplay between established firms and new entrants. Haltiwanger et al. (2013), for example, analyze the role of "small versus large versus young" firms in creating jobs in the United States. One of their conclusions is that "we need to develop the data and associated analyses that will permit investigating the complex relationships between young and mature businesses" (p. 361). Similar to the arguments above, they further state, "It may be, for example, that the volatility and apparent experimentation of young businesses that we have identified is critical for the development of new products and processes that are in turn used by (and perhaps acquired by) the large and mature businesses that account for most economic activity" (p. 361).

We contribute in this regard with a systematic analysis of the frequency and nature of acquisitions of recent start-ups. Acquisition constitutes one type of interplay between start-ups and incumbent businesses related to transfer of technology and innovation. While the paper does not directly test for the "symbiosis" or "win-win" effect of acquisitions discussed above, we derive hypotheses concerning the characteristics of acquired start-ups and acquiring firms from this strand of literature, particularly research on "entrepreneurship systems" and on commercialization strategies of start-ups. We thus assess whether the patterns of acquisitions of start-ups are consistent with the conjectures in this literature. To this end, we focus on the influence that the technology profile, market context, and financial position of start-ups has on the probability of being acquired.

We identify the full population of independent start-ups in Sweden entering during the period 1991–2002 and follow them up to 18 years after entry (until 2009). Yearly information on the ownership structure of each entrant allows us to track whether and when a start-up is acquired by an established firm. We distinguish between three different types of acquiring firms (foreign multinational enterprises [MNEs], Swedish MNEs, and domestic enterprises), and also use established techniques to separate between different types of start-ups, namely spin-offs (pushed and pulled) and other types of new firms. This allow us to assess how acquisition probabilities vary across different types of start-ups.

Our analyses provide a number of stylized facts and results: First, acquisitions of recent start-ups are rare. The uncontrolled general probability of acquisition is around 5% up to 5 years after entry, while the probability of exit is about 60%. Second, acquisition targets are a small group of firms with defining characteristics. They are much more likely to be spin-offs with strong technological competence and weak internal financial resources operating in high-tech sectors. MNEs also appear to be more prone to target NTBFs. Third, compared to foreign MNEs, Swedish MNEs show a higher propensity to target NTBFs. This may be an indication that domestic MNEs, with supposedly better knowledge of and networks in the home country than their foreign counterparts, are in a better position to identify innovative domestic start-ups.

The econometric analyses support the idea that acquisitions constitute an important mechanism of market selection pertaining to "good" high-tech start-ups. In fact, our findings suggest a kind of "hierarchy" in market selection in terms of the technology profile of start-ups: highly technology-intensive start-ups are acquired by (or sold to) MNEs, medium technology-intensive firms are acquired by domestic enterprises, and others remain independent or exit. These characteristics of the acquisitions process are consistent with the literature on "entrepreneurship systems" of NTBFs (Lindholm, 1996a; Lindholm-Dahlstrand, 1997) and the literature on how commercialization strategies of NTBFs depend on market conditions (Norbäck and Persson, 2014; Gans and Stern, 2003). In essence we find that acquisitions primarily occur in

[1] In the late 1990s, for instance, Ericsson reported that it employed a strategy sometimes referred to as "the string of pearls strategy" to enter the internet protocol (IP) market (Glimstedt et al., 2007). This strategy focused on acquiring small and young innovative companies with advanced knowledge and competence in IP.

[2] Delmar et al. (2011) find that new technology-intensive firms started by entrepreneurs with a degree in science and engineering have positive effects on the growth of industries for which technology is important. Their result could potentially be explained by the described "symbiosis" between new technology-intensive entrants and incumbent businesses through acquisitions in high-tech sectors, driving the industry's overall growth.