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Does inward foreign direct investment improve the innovative performance of local firms?

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ABSTRACT

Over the past several decades, research in the fields of international business and strategy has devoted increasing attention to outward foreign direct investment (FDI). Despite extensive scrutiny of the firm-specific motivations for, and consequences of, outward FDI; we know relatively little about inward FDI, the impact of inward FDI on host country firms, and especially, how inward FDI affects the innovativeness of those firms. Extant theoretical arguments predict contrasting effects. One line of research highlights the benefits to host country firms. Another line of research highlights the deleterious consequences to host country firms. Utilizing data from 1799 Spanish manufacturing firms from 1990 to 2002, we investigate the relationships between industry-level and firm-level inward FDI and the innovative performance of host country firms. We find that FDI inflows into Spain are negatively associated with the ex post innovation of local firms. We contrast these findings with those using conventional measures of productivity.

1. Introduction

Scholars from a variety of disciplines have long examined the firm-specific motivations for, and consequences of, engaging in foreign direct investment (FDI) (e.g., Buckley and Casson, 1976; Cantwell, 1989; Kogut and Chang, 1991; Martin and Salomon, 2003; Morck and Yeung, 1991). This type of investment is referred to as outward FDI, and it is characterized by individual firms expanding beyond domestic borders to invest in foreign countries via greenfield, alliance, or acquisition (for a review see Caves, 1996).

Despite the extensive theoretical and empirical study of FDI, surprisingly, research in international strategy has centered almost exclusively on the antecedents and consequences of outward FDI for the firms making the investments. Relatively little research (with a few notable exceptions) has been directed at the impact of inward FDI on firms in the country receiving those investments. And what little we do know generally addresses the impact of inward FDI on the total factor, or labor, productivity of local firms (Aitken and Harrison, 1999; Blalock and Simon, 2009; Chung et al., 2003; Haddad and Harrison, 1993; Javorcik, 2004; Konings, 2001). We understand relatively little about how inward FDI affects innovativeness, a measure of learning that scholars suggest is vital to understanding the growth of economies (Grossman and Helpman, 1994; Salomon and Shaver, 2005). Because FDI is often viewed as a catalyst for economic development, and because countries increasingly compete to attract FDI, it is important for managers and policymakers to understand the impact of inward FDI not just on productivity, but also on innovation. To our knowledge, no study has examined the impact of inward FDI on the innovativeness of indigenous firms.

When it comes to the broader impact of inward FDI on the innovation of local firms, extant theory offers two plausible, yet competing, explanations. One line of reasoning suggests that inward FDI ought to lead to beneficial outcomes for local firms. The purported mechanism is through knowledge spillovers from foreign entrants to local firms, and/or through heightened incentives to innovate to compete with better-endowed foreign entrants. Another line of research casts doubt on the positive impact of inward FDI, suggesting instead that inward FDI might adversely affect local firm innovation. This research emphasizes how the increased competition that comes with foreign entry relegates domestic firms to less innovative market niches and/or crowds indigenous competitors out of the market.

The aim of this study is to address this debate by examining how inward FDI affects the innovative performance of local firms. Utilizing data from 1799 Spanish manufacturing firms from 1990 to 2002, we examine how their innovative output is influenced

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by industry- and firm-level FDI inflows. With respect to measures of innovation, we use patent application and product innovation counts. In both cases, we find that inward FDI is negatively related to the ex post innovative performance of Spanish firms. That is, Spanish firms, after having been acquired by foreign entrants, tend to apply for fewer patents. Additionally, indigenous firms operating in industries that receive greater FDI inflows introduce fewer ex post product innovations.

In a post hoc analysis, we contrast our findings with those using more conventional labor productivity and total factor productivity measures. In contrast with the innovation results, we find that inward FDI is positively related to ex post labor productivity and total factor productivity. We interpret this to suggest that while inward FDI facilitates efficient resource allocation in the local economy – helping inefficient firms (relative to the foreign entrants) improve – it is detrimental to the technological development of indigenous firms which is critical for long-term economic growth. These combined findings hold important implications for both policy and practice.

The paper proceeds as follows. In the next section we review the literature on the impact of inward FDI on host country firms. We subsequently generate competing hypotheses. We then describe the data, the methodology, and present results. The final section discusses the findings and concludes.

2. Theory and hypotheses

Although much of the research in international strategy has focused on the firm-specific antecedents and consequences of outward FDI, there is a literature in economics that has examined the impact of inward FDI on the host country economy, and its firms. Some scholars recognize the potential for beneficial knowledge spillovers from foreign entrants to host country firms. Others highlight how foreign entry increases local competition. Reflecting competing explanations, extant empirical results have been mixed. Findings have demonstrated both a positive effect of inward FDI on the productivity of local firms (Haskel et al., 2007; Keller and Yeaple, 2009) and a negative effect of inward FDI on the productivity of host country firms (Aitken and Harrison, 1999; Haddad and Harrison, 1993; Konings, 2001).

Regardless of the effect, the one thing these studies share in common is that they have centered almost exclusively on the impact of inward FDI on either the total factor productivity or labor productivity of local firms. Recent research in international strategy, however, suggests that the mixed empirical findings from economic studies might be influenced by the use of such productivity measures (e.g., MacGarvie, 2006; Salomon and Jin, 2008; Salomon and Shaver, 2005). In fact, Bloom and Van Reenen (2010: p. 204), channeling Abramovitz (1956), go so far as to suggest that, "Productivity differences at the firm level have long been a measure of our ignorance. . ." This is due to not just the way in which productivity is estimated, but also because a variety of factors influence productivity and it is difficult to isolate them. Instead, MacGarvie (2006) and Salomon and Shaver (2005) suggest that innovation represents a fruitful alternative to the standard measures of productivity. Although the expectation is that innovation will ultimately manifest as increased productivity, improved labor productivity and/or total factor productivity are not necessarily indicative of innovation, nor do they ultimately yield innovations. Moreover, because technological innovation is central to theories of economic growth (e.g., Grossman and Helpman, 1994), understanding the impact of inward FDI on innovation, and not simply labor or total factor productivity, aids our understanding of whether, and if so, how, inward FDI can act as a catalyst for development.

2.1. Inward FDI as a catalyst for innovation

Scholars have long recognized the potential for positive externalities from inward FDI in host economies (e.g., Caves, 1974; Kearns and Ruane, 2001). According to theory, such externalities should be driven by the following underlying mechanisms: increased competitive pressure that provides incentives for local firms to improve; an increase in the demand for upstream supply allowing for increased scale economies that reduce costs for all firms; and/or, the opportunity for local firms to benefit from knowledge transfer – learning state-of-the-art technologies from better-endowed foreign entrants.

As conventional industrial organization economics suggests, the entry of foreign rivals stimulates competition in host-country markets. Enhanced competition inhibits local firms from gaining monopolistic or oligopolistic profits, which induces local firms to take action to defend their markets and retain market share (Chung, 2001). As a response to foreign entry therefore, local firms attempt to improve their productivity in order to remain competitive. According to this reasoning, competition, via the market mechanism, improves the allocative and technical efficiency of firms (Blomström and Kokko, 1998).

Consistent with such an interpretation, Chung et al. (2003) found a positive relationship between the entry of Japanese automobile assemblers into the U.S. and productivity among U.S. auto component manufacturers. Although they found evidence that U.S. auto component manufacturers benefited broadly from the entry of Japanese auto assemblers, they failed to find any productivity improvements for local U.S. suppliers that provided automobile components directly to the Japanese assemblers. This led the authors to conclude that the productivity improvements were a result of enhanced competitive pressure rather than any direct knowledge transfer.

Although similar in many respects to the first mechanism, the second argument highlights the demand-side benefits of foreign entry in local factor markets (Rodríguez-Clare, 1996). The underlying rationale is that the presence of foreign entrants increases the demand for upstream goods. This allows local suppliers to reap the benefit of scale economies, and for local competitors to benefit from decreased input costs. In the aggregate, this increases the productivity of local firms.

As an example, Hobday (1995) discovered that multinational entry into various industries in Taiwan resulted in increased demand for intermediate goods, resulting in productivity increases among local firms. He attributed these productivity improvements to economies of scale, and quality standards imposed by foreign entrants.

The third mechanism through which foreign entry can improve the operations of domestic firms is through knowledge transfer – either directly or indirectly. Direct knowledge transfer from inward FDI can occur through the intraorganizational provisions of intangible assets from a parent firm to its foreign affiliates (Hobday and Rush, 2007) or through contract between foreign entrants and their local suppliers (Blalock and Gertler, 2008; Haskel et al., 2007; Keller and Yeaple, 2009). Indirect knowledge transfer can occur through unintended knowledge spillovers (Almeida and Kogut, 1999). Local firms can learn by observing and imitating foreign entrants, through formal and informal interactions with those competitors, and through intelligence gathering from third-parties that interact regularly with the foreign entrants. For example, domestic competitors can use foreign entrants as an operational benchmark, and even reverse-engineer their products to gain technological insights (Salomon, 2006).

There is empirical evidence that knowledge flows from foreign entrants to domestic firms. For example, the international strategy literature has long demonstrated that foreign parents transfer