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Reconceptualizing the spillover effects of foreign direct investment: A process-dependent approach☆

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ABSTRACT

Theory suggests that FDI spillovers are a function of the level of foreign presence. We extend this view by developing and testing the premise that variations in spillover effects are the result of differences in the process of foreign entry. Drawing from the concept of time compression diseconomies, we develop the constructs of pace and irregularity of foreign entry, and demonstrate that they negatively moderate the relationship between the level of foreign presence and the productivity of host-country firms. We also explain how and why the moderating role of the process of foreign entry is influenced by the intensity of R&D and technical knowledge in domestic industries. We find evidence that firms operating in low-tech sectors are better able to absorb fast foreign entry.

1. Introduction

International business theory suggests that host-country firms can realize substantial productivity gains from the very presence of multinational enterprises (MNEs) (Caves, 1974; MacDougall, 1960). Despite the appeal of this theoretical proposition, recent empirical work on productivity spillovers casts serious doubt on their net effect. Prior studies have produced mixed results with the estimated spillover impact ranging from positive and high to insignificant or even negative (Aitken & Harrison, 1999; Barbosa & Eiriz, 2009; Buckley, Clegg, & Wang, 2007; Liu, Siler, Wang, & Wei, 2000; Zhou, Li, & Tse, 2002). The inconclusive evidence indicate that there is no universal relationship between inward foreign direct investment (FDI) and the productivity of host-country firms, implying that FDI may be beneficial in some situations but not in others. Recognizing that this relationship involves important contingencies that are often poorly understood (Spencer, 2008), the international business literature has recently focused on a set of factors, such as the level of competition and export intensity, that may influence spillover effects (Blomström & Sjöholm, 1999; Buckley, Wang, & Clegg, 2007; Wang & Yu, 2007).

Yet, although industry conditions play a fundamental role in explaining variation in FDI spillovers (Buckley, Wang, & Clegg, 2006), the extant literature is largely silent on the relevance of the building-up process of foreign presence in a given industry. One convention, prevalent in this literature, is to attribute variations in firm productivity to differences in the *level*

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of the presence of foreign-invested firms in the same industry. By focusing on the level of foreign presence, however, previous studies fail to conceptualize the *process* of foreign entry and consider how this might lead to different productivity outcomes. This lack of understanding is important as host-country firms operating in industries with similar levels of foreign presence may experience considerably different spillover effects due to variations in the process-dependent evolution of foreign entry. More importantly, incomplete knowledge of the process of foreign entry may result in suboptimal FDI policies and make it difficult to develop theory about the conditions shaping the spillovers effects of foreign entry.

The current study is designed to address this lack of understanding. We advance prior work on FDI spillovers in two important ways. First, we introduce and develop a foreign entry approach that is process-dependent. Our overarching argument is that FDI spillovers are influenced not only by the *level* of foreign presence in an industry but also by the *process* of foreign entry which is defined as how quickly and regularly foreign firms enter an industry within a given time frame. To our knowledge, this is the first study that is designed to explicitly capture the process of foreign-entry and conceptualize how it influences the spillovers effects of FDI. Our approach offers a more complete account not only of the direct effects of the process of foreign entry, but also of its moderating role in shaping the relationship between the levels of foreign presence and productivity. Such moderating effects play a significant role in understanding the industrial context under which the magnitude of spillover effects varies.

Second, previous analyses provide valuable insights about the impact of industry heterogeneity on FDI spillovers (Buckley, Wang, & Clegg, 2007; Kokko, 1994; Liu, Siler, Wang, & Wei, 2000), indicating that industry characteristics influence the relationship between the level of foreign presence and the productivity of host-country firms. Our contribution lies in developing and testing the proposition that the strength of the moderating role of the process of foreign entry varies between industries depending on their characteristics. To be specific, we examine how FDI spillovers are influenced by the interaction between the level of foreign presence, the process of foreign entry, and the intensity of R&D and technical knowledge in host-country industries. The process-dependent perspective developed in this study complements the traditional approach to FDI spillovers and has important implications for constructing theory about the mechanisms through which spillover effects occur.

2. Theoretical framework and hypotheses development

MNEs generate spillovers to host-country firms through various channels (Crespo & Fontoura, 2007; Eden, Levitas, & Martinez, 1997; Hamida & Gugler, 2009). First, demonstration effects arise from the interaction between local firms and MNEs. According to previous studies, local firms may improve their productivity by imitating the product and process technologies, organizational routines and managerial practices that foreign investors bring with them. The second channel involves backward and forward linkages. Firm productivity increases when MNEs help local suppliers and distributors set up production facilities or provide them with technical assistance and training. The third channel concerns employees' mobility and the transfer of knowledge occurs when well-trained employees from MNEs move to local firms or set up their own companies. Finally, spillovers may also arise from higher levels of competition since the entry of technologically advanced MNEs forces local firms to improve their technologies and use existing resources more efficiently.

2.1. Spillover effects of foreign entry: a process-dependent approach

Prior studies measure spillover effects as the impact of foreign presence on the productivity of host-country firms. This is, however, a static approach as it assumes that spillovers will arise from the presence of foreign firms regardless of *how* the presence in an industry is actually built up over time. We propose that the strength of spillover channels depends not only on the level of foreign presence but also on the process of foreign entry. Our conceptualization of the process of foreign entry focuses on two key constructs, namely the *pace* and *irregularity* of foreign entry. We develop the premise that these constructs act as two moderating mechanisms in the relationship between inward FDI and the productivity of host-country firms.

The *pace* of foreign entry, as opposed to the 'level' of foreign presence, is a time-dependent industry-specific construct that refers to the pace at which foreign presence is built up in an industry within a given time period. Although our approach differs from the internationalization literature where pace refers to the speed of international expansion by an individual MNE (Vermeulen & Barkema, 2002; Wagner, 2004), the terms "pace of foreign entry" and "pace of internationalization" are two sides of the same coin. They reflect foreign entry from the standpoint of host countries and MNEs, respectively.

The construct of *irregularity* captures changes in the rhythm at which foreign presence is built up in a host industry within a given period. In studying the relationship between firms' internationalization and performance outcomes, Vermeulen and Barkema (2002: 642) argue that the rhythm of internationalization negatively moderates the performance outcomes of internationalization because "firms following an irregular expansion path will encounter time compression diseconomies sooner than firms that expand in a rhythmic pattern". We apply this logic to the study of FDI spillovers and assert that an irregular pace of foreign entry negatively moderates the spillovers that may accrue from foreign presence.

2.2. The moderating role of pace of foreign entry

Fast foreign entry into a host industry is likely to be accompanied by fast international expansion of individual MNEs. MNEs that enter foreign markets quickly suffer from diseconomies of time compression (Vermeulen & Barkema, 2002). A