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Are there demonstration-related spillovers from FDI? Evidence from Switzerland[☆]

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ABSTRACT

This paper examines whether there are signs of demonstration-related spillovers from foreign direct investment (FDI). It hypothesizes that the size and the extent of such benefits vary according to the level of the absorptive capacity of local firms. Using detailed firm data from Swiss manufacturing and services/construction, we find strong evidence for demonstration-related spillovers when (a) local firms are not far behind the technological frontier of the industry with a technological gap slightly greater than one, and (b) local firms demonstrate high investment in the absorptive capacity. The results are found to be more consistent in manufacturing than services/construction.

1. Introduction

The MNC is an important agent in host countries, in so far as it is able to affect substantially their economic development as it is largely assumed to be the provider of knowledge, capital, capabilities and markets, the creator of jobs, the supplier of foreign currency, the competition stimulator, etc. (Dunning, 1992, 1993). Most host countries (developed and developing) have liberalized their FDI regulations and have been encouraging the inflow of FDI by, for example, providing generous investment and/or tax incentives, enforcing the patent regime, etc. (Dunning & Gugler, 2008; Dunning & Lundan, 2008; Oxelheim & Ghauri, 2003; UNCTAD, 2003). Their main motivation is the prospect of acquiring new technology which may spill over to local firms and improve their performance (Buckley, Clegg, & Wang, 2003; Cantwell, 1991; Caves, 1974; Dunning, 1992) – the creation, diffusion, and commercialization of technological innovations is one of the main characteristics of MNCs (Gugler & Dunning, 1994). Blomström and Kokko (1998, p. 249) argue that spillover effects occur when ''*the entry or presence of MNC affiliates lead to productivity or efficiency benefits in the host country's local firms and the MNCs are not able to internalize the full value of these benefits*''. Spillovers may occur either in the foreign affiliates' own industry or in other industries—among the affiliates' suppliers or customers.

Spillovers are grouped into competitive disciplinary effects and knowledge spillovers. The competitive effects, or rather the incentives for competition, operate through either a more efficient use of existing technology and resources or an

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assimilation of foreign technologies.[1] While knowledge transfer effects may result from the introduction of new know-how to local firms, by among other things, demonstrating new technologies and training workers who later work for local firms.

The number of empirical studies assessing the incidence of intra-industry spillovers to local firms is growing fast[2](among others Barbosa and Eiriz, 2009; Ben Hamida, 2007; Buckley, Clegg, & Wang, 2002; Dimelis, 2005; Haddad & Harrison, 1993; Kokko, 1994; Kokko, Tansini, & Zejan, 1996; Konings, 1999; Liu and Wei, 2006; Perez, 1997; Ruane and Ugour, 2005; Yeaple and Keller, 2003).[3] So far, results have been mixed for both developed and developing countries. One of the reasons is that the share of foreign to total sectorial activity (e.g. foreign employment/sales share) that has frequently been used by scholars to measure spillover benefits does not seem appropriate to capture much of the competition (Kokko, 1996) and worker mobility effects (Ben Hamida, 2006a); it can only hold the whole information about spillovers through demonstration effects (Ben Hamida, 2007).

Another reason for the apparently contradictory findings from the country studies is that the absorptive capacity of local firms may influence the incidence of spillovers (Perez, 1998; Wang & Blomström, 1992), from which only firms with high absorptive capacity are likely to benefit, whereas insufficient absorptive capacity may hinder critical learning processes at the firm which, in turn, will be unable to exploit the technological opportunities arising from foreign presence (Cohen & Levinthal, 1989). The firm's level of absorptive capacity depends upon its existing level of technological competence as well as the learning and investment efforts undertaken to be able to make productive use of foreign knowledge. This theoretical argument has been broadly taken into account by most empirical studies, so as to be able to determine significant spillover effects (Damijan, Majcen, Knell, & Rojec, 2003; Girma, 2003; Kinoshita, 2001; Liu, Siler, Wang, & Wei, 2000). Nevertheless, most studies, except those of Narula and Marin (2003) and Ben Hamida (2007), disregard the importance of learning and investment efforts in determining the absorptive capacity of a local firm and retain in most cases its existing level of technological capacity or its technological gap vis-à-vis the foreign firm as proxies.

A further possible explanation of the negative or insignificant spillover results is that the size and the extent of spillovers depend largely upon the interaction effects between the mechanisms by which they occur and the existing technological levels of local firms. That is, relatively high technology firms are highly likely to benefit from spillovers through demonstration and/or competition effects, while low technology firms, which are not in a position to compete with foreign firms, gain a lot from other forms of spillovers such as worker mobility, since this channel provides some personnel assistance which can help local firms to better understand and implement the foreign technology (Ben Hamida, 2007; Mody, 1989).

This paper attempts to analyze empirically the intra-industry spillovers from FDI using firm-level data from both manufacturing and services/construction industries in Switzerland. It intends to propose some components for a research agenda on spillover benefit from MNCs which deserve more attention. We pursue the idea that the foreign share variable does not allow for measuring the whole of the spillover benefits according to the ways they occur, and that these effects may vary with respect to different levels of absorptive capacity of local firms. In particular, due to the lack of Swiss data, we focus on testing the size and the extent of spillovers through demonstration effects expressed in terms of foreign sales share. We test such effects according to the diverse levels of technological capacity of local firms to observe the distribution of spillovers between local firms at different technological levels. And we make use of a thorough measure of local absorptive capacity in which the learning and investment efforts of local firms come with their existing technological capacities.

We recognize that Switzerland is a particularly interesting example for this study. First, it is experiencing increasing flows of inward FDI over time— Switzerland is one of the smaller European countries which, like Austria and Norway, has recorded sharp increases in inward FDI over recent years, mainly in 2003, which even surpassed those of outward investment (OECD, 2004). Second, Switzerland is regarded as having achieved competitive technological levels in many industries and then it possesses a sufficient level of absorptive capacity to efficiently exploit spillovers.[4] Third, Switzerland has an open and welcoming attitude towards FDI (UNCTAD, 2006). Swiss government authorities, especially cantons, attempt to attract MNCs to invest in Switzerland using substantial fiscal and financial incentives; favorable tax treatment is provided for many forms of foreign investment (Sermet, 2003).[5] Fourth, to date, there has been no investigation of the potentially beneficial spillover effects of MNCs – the rationale for promoting FDI – on Swiss economy. Therefore, it is promising to study these effects and assess their key determinants for Swiss firms, so as to give insights to Swiss policy makers about how to promote these benefits as well as to draw general conclusions.

Our empirical results show that only mid technology firms gain benefits from spillovers through demonstration effects. The size of these benefits is higher for manufacturing firms than for services/construction firms. In addition, only firms which largely invest in absorbing foreign technology benefit from spillovers.

[1] It is noteworthy that in the short run the competition effects could have a negative sign (crowding-out effects or market stealing effects). These negative effects occur when foreign firms with superior technology force local firms to exit, since they divert demand away from them (Damijan, Kostevc, Rojec, & Jaklič, 2007).

[2] Although the effects via vertical linkage are also of great importance and worthy of being explored, the focus in this paper is on studying the intra-industry spillovers.

[3] Meta-analyses of spillover studies are presented in Görg and Strobl (2001) and Meyer and Sinani (2005).

[4] MNCs tend to concentrate their activities in more dynamic and competitive industries (Rugman & Verbeke, 2003).

[5] Recently, after the failure to attract the American MNC "Amgen" to set up an affiliate in Switzerland, Joseph Deiss "the head of economic department in Switzerland" claimed that concerted efforts to reinforce the attractiveness of Switzerland to foreign MNCs by developing clusters is essential to increasing the competitive power of the Swiss economy (Nussbaum, 2006).