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Revisiting the external impact of MNCs: An empirical study of the mechanisms behind knowledge spillovers from MNC subsidiaries

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ABSTRACT

The majority of studies of knowledge spillovers from the presence of multinational corporations (MNCs) have focused on whether or not, rather than how knowledge spillovers occur from MNC subsidiaries to local host country firms. Using survey data from 210 MNC subsidiaries in Sweden, a composite model is developed examining the impact of two different environmental conditions on the occurrence of knowledge spillovers arising from innovation transfer within MNCs. We distinguish between horizontal knowledge spillovers (i.e., to competitors) and vertical knowledge spillovers (i.e., to customers and suppliers), and emphasise the conceptually important distinction between the two. The former are largely unintentional by nature whereas the latter can be considered as intentional knowledge diffusion. The results show that competitive pressure in the recipient subsidiary's local environment gives rise to unintentional knowledge spillovers, whereas it is negatively related to intentional knowledge diffusion. The results also support the notion that the degree of embeddedness of in a subsidiary's business network in the host country is positively related to intentional knowledge diffusion. An important finding of the study is that there is a positive relationship between intentional knowledge diffusion and unintentional knowledge spillovers.

1. Introduction

With the expectation that inward foreign direct investment (FDI) will serve as a channel for knowledge and technology transfer to the host country, attracting foreign investment is a highly ranked task on the agenda of national policy makers. Knowledge spillovers, i.e., the unintentional transfer of knowledge between firms, are widely believed to benefit firms in the host country, resulting in, e.g., productivity growth among domestic firms. Traditionally, the multinational corporation (MNC) is ascribed superior technologies and management skills that allow it to compete successfully against indigenous firms. Through the intra-organisational transfer of knowledge, MNC subsidiaries can benefit from the knowledge and competence developed within different parts of the MNC. However, the MNC cannot capture all the economic rents from its operations (cf. Caves, 1974) because of the difficulty of controlling the unwanted diffusion of intangible assets, such as knowledge. Thus, the proprietary knowledge of the MNC may also come to benefit firms that are located in the near proximity (cf. Jaffe, Trajtenberg, & Henderson, 1993).

Traditionally, research on knowledge spillovers has largely been dominated by economists (e.g., Aitken & Harrison, 1999; Blomström & Kokko, 2003; Blomström & Sjöholm, 1999; Görg & Strobl, 2001; Haddad & Harrison, 1993) and political scientists (e.g., Moran, 2001). Apart from some early studies investigating the link between multinational corporations, FDI

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and host country development (Caves, 1974; Dunning, 1993), international business (IB) scholars have mainly focused on gaining an understanding of the internal workings of the MNC, e.g., the role of foreign subsidiaries as creators and disseminators of knowledge within the MNC (Bartlett & Ghoshal, 1989; Holm & Pedersen, 2000). This has been done at the expense of studying how the intra-MNC transfer of competitive capabilities can impact on the host countries of the MNC subsidiaries. Although there has been a renewed interest in studying FDI-induced knowledge spillovers from an international business perspective (e.g., Altomonte & Pennings, 2009; Buckley, Clegg, & Wang, 2002; Buckley, Clegg, & Wang, 2007; Buckley, Wang, & Clegg, 2007), these studies also rely on econometric models that attempt to generalize whether or not knowledge spillovers occur. Accordingly, ‘‘revisiting’’ the external impact of multinational corporations is an important issue for IB research (Ghauri & Yamin, 2009, p. 105; Kolk & van Tulder, 2010). Moreover, calls have been made for researchers to not only examine the occurrence of knowledge spillovers from MNCs but to investigate how they occur (Javorcik, 2007; Spencer, 2008). According to Görg and Strobl (2005, p. 695), an important drawback of many empirical studies of FDI-induced knowledge spillovers is the treatment of specific mechanisms by which spillovers supposedly occur as a ‘‘black box’’.

As is custom in the spillover literature, we distinguish between horizontal knowledge spillovers, i.e., the effect on local competitors, and vertical knowledge spillovers, i.e., the effect on local customers and suppliers (for an overview, see Meyer, 2004). However, it is important to note that, whereas the former are largely unintentional, the latter are often of an intentional nature (cf. Mudambi, 2002). Much of past research on knowledge spillovers has neglected the conceptually important distinction between the intentional and unintentional nature of knowledge spillovers. With the aim of addressing this limitation and the gap identified in extant research as described above, a composite model is developed to investigate the effect of two different environmental conditions on the occurrence of intentional and unintentional knowledge spillovers. The first condition relates to the perspective of the local environment as an ‘‘aggregated force’’ (Holm, Holmström, & Sharma, 2005) and emphasises the impact of competitive pressure on the occurrence of knowledge spillovers (Blomström & Sjöholm, 1999; Kokko, 1992; Porter, 1990). The second condition relates to the view of the environment as consisting of a network of business relationships (cf. Håkansson, 1989; Johanson & Mattsson, 1987).

The next section reviews the literature on the impact of MNCs on their host countries. This is followed by the development of hypotheses and a presentation of the model. In the subsequent section, the method and data collection are discussed, after which the results of the empirical analysis are presented. The last section contains a concluding discussion, including implications for management and policy, and issues for future research.

2. MNC presence and knowledge spillovers from subsidiary to location

The rationale for attracting FDI has been debated by academics and policy makers alike. In the 1970s, many governments considered inward FDI to be detrimental to the host country's welfare and economic development. However, early empirical studies show improvements in productivity in domestic industries as a result of foreign direct investment (e.g., Blomström, 1986; Caves, 1974; Globerman, 1979). Today there is widespread agreement that MNCs and the international transfer of technology can stimulate host country development (Dunning, 1992; Dunning & Narula, 2004; Markusen & Venables, 1999). Besides direct macroeconomic effects of MNC presence in terms of, e.g., capital formation, employment, and trade, an argument is that MNCs introduce superior technology that will ‘‘spill over’’ to local firms. These benefits can be manifested in terms of improved productivity and access to skills and technological knowledge. A vast body of econometric literature refers to such FDI-induced effects as knowledge spillovers (see Meyer, 2004, for an overview). Although there are studies that conclude that the evidence for spillovers from FDI is rather weak or even negative (Djankov & Hoekman, 2000; Girma, Greenaway, & Wakelin, 2001; Görg & Greenaway, 2003; Konings, 2001), the findings of a large amount of research reveal that MNCs have a positive effect on their host country (e.g., Aitken & Harrison, 1999; Blomström & Kokko, 1998, 2003; Blomström, Kokko, & Zejan, 2000; Haddad & Harrison, 1993; Lim, 2001). In general, MNCs seem to have a beneficial effect in developed economies (Blomström, Globerman, & Kokko, 1999; Branstetter, 2006) where the domestic firms actively conduct R&D, thus developing their ability to absorb new technologies (Crespo & Fontoura, 2007; Hamida & Gugler, 2009).

2.1. The intentional and unintentional nature of knowledge spillovers

In this paper it is argued that knowledge spillovers may occur as a result of intra-MNC transfer of innovations. The underlying idea is that knowledge diffusion is geographically confined (cf. Almeida, 1996; Almeida & Kogut, 1999; Audretsch & Feldman, 1996; Jaffe et al., 1993) and that proximity matters for the absorption of knowledge spillovers (Branstetter, 2006; Sanna-Randaccio & Veugelers, 2007). When reviewing the literature, two primary categories of knowledge spillovers can be identified: horizontal and vertical knowledge spillovers. Horizontal knowledge spillovers often refer to the leakage of knowledge to firms in the same industry and may thus affect the subsidiary's local competitors in terms of, e.g., improvements in productivity by imitating the technologies of the MNC subsidiaries operating in the local market. Horizontal spillovers can also occur if the establishment of MNC operations forces local firms to use existing resources more efficiently or to search for new technologies (Blomström & Kokko, 1998; Kokko, 1992). Horizontal knowledge spillovers can therefore be manifested in local competitors' reactions in terms of imitative and/or innovative behaviour.

Vertical knowledge spillovers, on the other hand, can be viewed as the diffusion of knowledge that the MNC subsidiary deliberately realises to local suppliers and customers (Javorcik, 2004; Moran, 2001; Mudambi, 2002). It has been pointed out that vertical knowledge spillovers often occur through the linkages and relationships that the MNC subsidiaries have