Journal of Development Economics 91 (2010) 242–256

Contents lists available at ScienceDirect

Journal of Development Economics

journal homepage: www.elsevier.com/locate/devec

Does foreign direct investment promote growth? Exploring the role of financial markets on linkages ☆

Laura Alfaro [a,b,*], Areendam Chanda [c], Sebnem Kalemli-Ozcan [b,d], Selin Sayek [e]

[a] Harvard Business School, 263 Morgan Hall, Boston, MA 02163, United States
[b] NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138, United States
[c] Louisiana State University, Baton Rouge, LA 70803, United States
[d] University of Houston, 4800 Calhoun Road, Houston, TX 77004, United States
[e] Bilkent University, TR-06800 Bilkent, Ankara, Turkey

ARTICLE INFO

Article history:
Received 23 June 2008
Received in revised form 19 May 2009
Accepted 24 September 2009

JEL classification:
F23
F36
F43
O40

Keywords:
FDI spillovers
Backward linkages
Financial development
Economic growth

ABSTRACT

Do multinational companies generate positive externalities for the host country? The evidence so far is mixed varying from beneficial to detrimental effects of foreign direct investment (FDI) on growth, with many studies that find no effect. In order to provide an explanation for this empirical ambiguity, we formalize a mechanism that emphasizes the role of local financial markets in enabling FDI to promote growth through backward linkages. Using realistic parameter values, we quantify the response of growth to FDI and show that an increase in the share of FDI leads to higher additional growth in financially developed economies relative to financially under-developed ones.

1. Introduction

Within policy circles, there is a widespread belief that foreign direct investment (FDI) enhances the productivity of host countries and promotes economic development. This notion stems from the fact that FDI may not only provide direct capital financing but also create positive externalities via the adoption of foreign technology and know-how. Yet, the empirical evidence on the existence of such positive productivity externalities is sobering.[1]

The macro empirical literature finds weak support for an exogenous positive effect of FDI on economic growth. Findings in this literature indicate that a country's capacity to take advantage of FDI externalities might be limited by local conditions, such as the development of local financial markets or the educational level of the country, i.e., *absorptive capacities*. Borensztein, De Gregorio, and Lee (1998) show that the technology FDI brings translates into higher growth only when the host country has a minimum threshold of stock of human capital. Alfaro, Chanda, Kalemli-Ozcan and Sayek (2004) provide evidence that only countries with well-developed financial markets gain significantly from FDI in terms of their growth rates.

In terms of the micro empirical evidence, most of the studies using firm level panel data find no effect of foreign presence or they find negative productivity spillover effects from multinational enterprises (MNEs) to the developing country firms.[2] Positive spillover effects are found only for developed countries.[3] Based on these negative results, a new generation of studies argues that since multinationals would like to prevent information leakage to potential local competitors, but would benefit from knowledge spillovers to their local suppliers, FDI spillovers

☆ An earlier version of this paper circulated under the title "FDI Spillovers, Financial Markets and Economic Development."

* Corresponding author. Harvard Business School, 263 Morgan Hall, Boston, MA 02163, United States. Tel.: +1 617 495 7981.
E-mail address: lalfaro@hbs.edu (L. Alfaro).

[1] See Blomstrom and Kokko (1998), Gorg and Greenway (2004), Lipsey (2002), Barba Navaretti and Venables (2004), and Alfaro and Rodriguez-Clare (2004) for surveys of findings.

[2] See Aitken and Harrison (1999). An earlier generation of papers, starting with the pioneering work of Caves (1974), focused on country case studies and industry level cross sectional studies. These studies found a positive correlation between the productivity of a multinational enterprise and average value added per worker of the domestic firms within the same sector.

[3] Haskel, Pereira and Slaughter (2002), for example, find positive spillovers from foreign to local firms in a panel data set of firms in the U.K.; Gorg and Strobl (2002) find that foreign presence reduces exit and encourages entry by domestically owned firms in the high-tech sector in Ireland.

0304-3878/$ – see front matter © 2009 Elsevier B.V. All rights reserved.
doi:10.1016/j.jdeveco.2009.09.004

ought to be between different industries. Hence, one must look for vertical (inter-industry) externalities instead of horizontal (intra-industry) externalities. This means the externalities from FDI will manifest themselves through forward or backward linkages, i.e., contacts between domestic suppliers of intermediate inputs and their multinational clients in downstream sectors (backward linkage) or between foreign suppliers of intermediate inputs and their domestic clients in upstream sectors (forward linkage).[4] Javorcik (2004) and Alfaro and Rodriguez-Clare (2004), for example, find evidence for the existence of backward linkages between the downstream suppliers and MNEs in Lithuania; and Venezuela, Chile, and Brazil, respectively. Paralleling the macro evidence, Villegas-Sanchez (2009), using firm level data from Mexico, shows that domestic firms only enjoy productivity increases from FDI if they are located in financially developed regions. She further shows that domestic firms located in regions where access the credit is more problematic will experience a negative spillover effect from FDI.

The purpose of this study is twofold. First, in a theoretical framework, we formalize one mechanism through which FDI may lead to a higher growth rate in the host country via backward linkages, which is consistent with the micro evidence found by the recent-generation studies described above. The mechanism depends on the extent of the development of the local financial sector. This channel is also consistent with the macro literature cited above that shows the importance of absorptive capacities.[5] We are not aware of any other study that is consistent with both micro and macro empirical evidence. In the second half of the paper, using realistic parameter values, we use the model to quantitatively gauge how the response of growth to FDI varies with the level of development of the financial markets. To the best of our knowledge, the paper is unique in this respect.

Our model is a small open economy characterized by two layers of industries. The downstream industry involves the production of a final consumption good by combining two intermediary goods/production processes, which are distinguished by their ownership — domestic or foreign (multinationals). These production processes, which are competitive, in turn, combine skilled labor, unskilled labor, and a range of differentiated inputs to produce their output. The latter differentiated inputs which form the second upstream industry layer are characterized by monopolistic competition. As with product variety endogenous growth models, the rate of expansion in the range of intermediates is the driver of economic growth.[6]

To operate a firm in the intermediate input sector, entrepreneurs must develop a new variety of intermediate input, a task that requires upfront capital investments. The more developed the local financial markets, the easier it is for credit constrained entrepreneurs to start their own firms. The increase in the number of varieties of intermediate inputs leads to positive spillovers to the intermediary processes that constitute the final good sector. As a result, financial market development allows backward linkages between foreign and domestic firms to turn into FDI spillovers.[7] Our model also implies the existence of horizontal spillovers in the final goods sector since the greater availability of intermediate inputs not only benefits the foreign firms but also raises the total factor productivity of the domestic firms in the final goods sector, thus creating a horizontal spillover as an indirect result of the backward linkage (e.g. Merlevede and Schoors, 2007).

In our model, however, increases in foreign presence (proxied either by higher share of foreign firms in the economy or higher firm specific productivity of the existing ones), will also lead to a reallocation of resources away from domestic firms to the foreign firms. Therefore, the instantaneous effect will be a decline in domestic firms' share in final output. Assuming that foreign owned firms have higher firm specific productivity, the long run growth rate will be higher.[8] In the long run, both domestic and foreign firms will benefit from the higher growth rate. However, in the short-run, the horizontal spillovers in the final goods sector, which indirectly result from the backward linkages between the foreign firm and the intermediate goods sector, exist only for the surviving domestic firms. Thus our setup can shed light on why empirical studies fail to find evidence of positive horizontal spillovers for developing countries and even find negative spillovers in some cases.

Instead of these changes in the relevant market size for foreign and domestic firms, there can also be a crowding out effect, where foreign firms aggravate the existing credit constraints and cause domestic firms to exit. Indeed, Harrison and McMillian (2003) find that in the Ivory Coast for the period 1974–1987, borrowing by foreign firms aggravated domestic firms' credit constraints. However, Harrison et al. (2004) found that foreign investors tended to "crowd in" domestic enterprises. Harrison and Rodriguez-Clare (forthcoming) argue that these contrasting results point to the policy complementarities such as complementarities with financial markets.

We then use the model to provide benchmark estimates on the effects of FDI on growth. We find that, a) holding the extent of foreign presence constant, financially well-developed economies experience growth rates that are almost twice those of economies with poor financial markets, b) increases in the share of FDI or the relative productivity of the foreign firm leads to higher additional growth in financially developed economies compared to those observed in financially under-developed economies, and finally, c) growth effects are larger when goods produced by domestic firms and MNEs are substitutes rather than complements. The exercise highlights the importance of local conditions such as market structure and human capital, the so-called absorptive capacities, for generating the positive effect of FDI on growth. By varying the relative skill endowments–while assuming that MNEs use skilled labor more intensively–we obtain results consistent with Borensztein, De Gregorio, and Lee (1998) who highlight the critical role of human capital.

The recent evidence from the work of Javorcik and Spatareanu (2005), among others, supports both our assumptions and findings. Their survey evidence reveals that one of the reasons multinationals in the Czech Republic, for example, do not source higher percentage of inputs domestically is the fact that local firms lack funding for investment necessary to become suppliers.[9] Javorcik and Spatareanu (2007) take one step forward and examine, using data from the Czech Republic, the relation between a firm's liquidity constraints and its supply linkages with multinational corporations. The empirical analysis indicates that Czech firms supplying MNEs are less credit constrained than non-suppliers. A closer inspection of the timing of the effect, however, suggest that this result is due to less constrained firms self-selecting into becoming MNE suppliers rather that benefits derived from the supplying relationship. Their findings suggest that well developed financial markets may be needed in order to take full advantage of the benefits associated

[4] Hirschman (1958) argues that the linkage effects are realized when one industry may facilitate the development of another by easing conditions of production, thereby setting the pace for further rapid industrialization. He also argues that in the absence of linkages, foreign investments could have limited or even negative effects in an economy (the so-called enclave economies).

[5] See Alfaro, Chanda, Kalemli-Ozcan and Sayek (2004) and Harrison and McMillian (2003) for descriptions of various interactions between financial markets and foreign and domestic firms.

[6] The setup in our model–a final good produced by two production processes which in turn use other factors of production–is not uncommon. For example, Acemoglu (1998) has a similar setup where the final good is produced by two production processes — one skill-intensive and another unskilled intensive which in turn use a range of intermediate inputs. Markusen and Venables (1999) and Rodríguez-Clare (1996) adopt similar structures also in a FDI context.

[7] In our model, linkages are associated with pecuniary externalities in the production of inputs. In contrast to knowledge spillovers, pecuniary externalities take place through market transactions.

[8] This is the standard market size effect that leads to higher growth rates in endogenous growth models. Since foreign firms have a productivity advantage, increasing their share raises the marginal product of the intermediate inputs. This increasing the latters' profitability and encourages the introduction of more varieties of intermediates.

[9] They found that multinationals source on average 48.3% of inputs from Czech enterprises.