
Can Survey Evidence Shed Light on Spillovers from Foreign Direct Investment?

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Although some economists remain skeptical of the existence of positive externalities associated with foreign direct investment (FDI), many countries spend large sums attracting foreign investors in the hope of benefiting from knowledge spillovers. Data collected through enterprise surveys conducted in the Czech Republic and Latvia suggest that the entry of multinationals affects domestic enterprises in the same industry or in upstream or downstream sectors through multiple channels. Some of these channels represent true knowledge spillovers while others have positive or negative effects on domestic producers in other ways. The relative magnitudes of these channels depend on host country conditions and the type of FDI inflows, which explains the seemingly inconsistent findings of the literature. The focus of the debate should shift from attempting to generalize about whether or not FDI leads to productivity spillovers to determining under what conditions it can do so. JEL codes: F21, F23, O24, O33

In the view of many policymakers, particularly those in developing countries, foreign direct investment (FDI) is not only a source of capital and additional employment but primarily a channel through which new technologies and know-how are transferred across international borders. Policymakers hope that knowledge brought by foreign affiliates will spill over to domestic firms and increase the competitiveness of their economies. This belief has led many countries to use externalities associated with FDI as a justification for providing fiscal and financial incentives to foreign investors.

The fact that large sums are often spent attracting FDI and the importance of technology transfer have led many academics to search for evidence of knowledge

spillovers from FDI. Their conclusions have been mixed. Early cross-section studies of intraindustry spillovers find a positive association between industry-level productivity and FDI; the conclusions of recent firm-level panel analyses are more ambiguous (see the literature surveys by Görg and Strobl 2001; Lipsey 2002; Saggi 2002; and Görg and Greenaway 2004). The meta-analysis of Görg and Strobl (2001) shows that cross-sectional studies tend to overstate the intraindustry spillover effects, possibly because the studies are unable to control for unobservable industry heterogeneity. Among firm-level panel analyses, those focusing on industrial countries are more likely to report positive findings on intraindustry spillovers than those using developing country data. More recent work examining interindustry spillovers has produced more encouraging results by providing evidence consistent with the existence of knowledge spillovers from multinationals to supplying industries (see Javorcik 2004 and Blalock and Gertler 2008). A review of the case study literature concludes that while the majority of case studies support the existence of FDI spillovers, under some circumstances such spillovers are unlikely to take place (Moran forthcoming).

Critics of globalization and academic skeptics have interpreted these mixed results as reflecting “extravagant claims about positive spillovers from FDI” that are not corroborated by the “sobering evidence” (Rodrik 1999, p. 37). They suggest that one dollar of FDI is worth no more than a dollar of any other kind of investment and that there is thus no case for special treatment of FDI.

Despite the mixed evidence, governments all over the world have continued their efforts to attract FDI inflows. The 1990s witnessed an explosion in the number of national investment promotion agencies. Between 1990 and 2005, the number of such agencies increased from 11 to 63 in developing countries and from 3 to 20 in developed countries. In 2004 alone, 59 of 108 countries surveyed in the World Bank’s Census of Investment Promotion Agencies offered some type of incentives to foreign investors (Harding and Javorcik 2007).

The contrast between the views of academic skeptics and the actions of governments has left observers wondering whether academics have simply failed to uncover spillovers that indeed exist or whether the generosity with which governments treat foreign investors is not really warranted. This article contributes to this debate by presenting information collected through enterprise surveys conducted in the Czech Republic and Latvia. Enterprise surveys can provide useful evidence that complements case studies and econometric analyses. Survey evidence is less prone than case studies to the criticism of not being representative and difficult to generalize. And in contrast to econometric analyses, which often treat the mechanism behind spillovers as a black box, surveys can capture the multiple channels through which spillovers take place.

The survey evidence presented here illustrates the myriad channels (including both real and pecuniary externalities) through which FDI inflows affect the

performance of domestic producers in a host country. Some of these channels are true knowledge spillovers, others exert a positive effect on domestic producers through demand shocks; some may have a negative impact on the observed performance of local firms. The methodologies employed in most econometric studies are unable to distinguish between the various channels. To complicate matters further, the relative magnitude of these channels depends on host country conditions and the type of FDI inflows, which may explain the seemingly inconsistent findings of the literature.

The article is structured as follows. The next section briefly describes the enterprise survey data used. Section II focusses on intraindustry spillovers. Sections III and IV discuss the effects of foreign entry on upstream and downstream industries. The last two sections present suggestions for future research and some policy recommendations.

The Data

The article draws on three enterprise-level surveys commissioned by the World Bank: in 2003 and 2004 in the Czech Republic and in 2003 in Latvia (for more details, see FIAS 2003, 2004; and World Bank 2007). The surveys were conducted by professional polling companies through face-to-face interviews at respondents' workplaces. All respondents were guaranteed full anonymity. The 2003 survey in the Czech Republic included 391 local manufacturing companies and 119 multinationals. About 20 percent of respondents were located in Prague, with the rest distributed across all regions of the country. The 2004 survey covered 466 domestic firms, 266 of them in the manufacturing sector and 200 in the service sector. The survey also included 167 multinationals. Seventeen percent of respondents were located in Prague. The Latvia survey covered 407 manufacturing firms, 11 percent of which had received FDI. About half of the interviewed firms were located in Riga, with the rest distributed around the country. All of the companies surveyed were private.

While one of the main goals of the Czech surveys was to learn about the implications of foreign entry for local firms, the Latvian survey contained only a limited component pertaining to this issue. This article therefore relies primarily on the Czech data, supplementing them with information from Latvia when possible.

Relying on survey data may be subject to the criticism that respondents may not answer the questions truthfully. This is unlikely to be a serious concern in this case, as all three surveys were conducted by highly reputable polling firms that guaranteed full anonymity to respondents. Respondents were free to decline being interviewed or to answer a particular question.

While some pitfalls are associated with reliance solely on survey data to investigate economic phenomena, enterprise surveys constitute an additional source of information that complements and enriches the conclusions of econometric evidence and the extensive case study literature on FDI spillovers. Survey data also help make sense of the seemingly contradictory evidence produced by statistical analyses, suggesting new directions for future research.

Intraindustry Spillovers

The entry of multinationals may affect local firms operating in the same sector through several mechanisms. The first mechanism relies on real externalities, such as the diffusion of knowledge through the demonstration effect. As local firms observe the actions of their foreign competitors, they learn about new technologies (some of which can be embodied in machinery or inputs that are relatively easily available for purchase), new marketing techniques, and new types of products. Local firms can also hire workers trained by multinationals. By doing so, they can find out about new management strategies and benefit from the training multinationals provided to their former employees. The diffusion of knowledge should have an unambiguously positive effect on local firms.

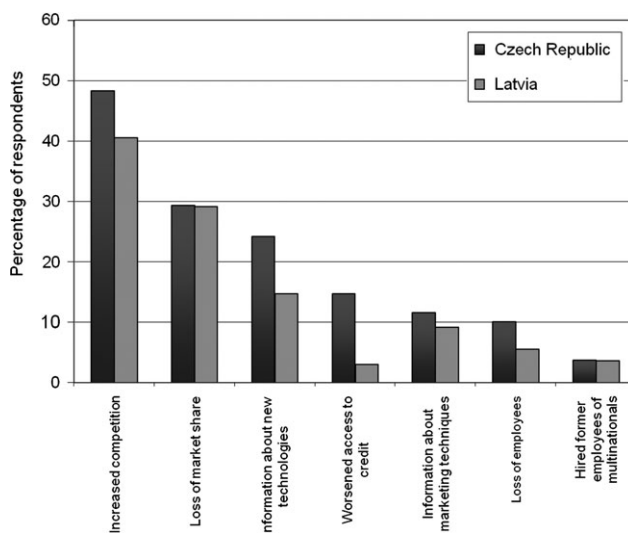
The second mechanism takes the form of pecuniary externalities and can be referred to as a competition effect. The entry of multinational firms increases the level of competition within the industry as long as some share of their output is sold in the host country. Even host countries with liberal trade regimes may experience an increase in competition. Producing locally reduces transportation costs and, in emerging markets, labor costs. It allows multinationals to reduce the price of their products relative to the prices they charged before entering the host country. In the long run, increased competition provides incentives for domestic producers to improve their performance; it also leads to exit of the worst performers and an increase in the average productivity level in the industry. In the short-to-medium run, however, weaker firms may experience a decline in observed performance as their market share shrinks.

Multinationals may also poach the best workers from their local competitors and make access to credit more difficult (because they may be lower-risk borrowers than their local competitors).¹ Both channels create negative pecuniary externalities that affect local firms. While pecuniary externalities have a negative impact on the affected firms, they lead to more efficient outcomes for the economy as a whole. As a result of increased competition in product, labor, and credit markets, resources are reallocated from less efficient firms to firms that are better positioned to benefit from them. This in turn may benefit consumers through lower prices.

The third mechanism may work by affecting demand for intermediates. As Rodriguez-Clare (1996) notes, if multinational entry increases demand for intermediates, it may result in the expansion of upstream industries. A greater variety of inputs available will in turn benefit downstream industries, including the industry of multinational entry. Demand for intermediates may increase even in the presence of a liberal trade regime, as local sourcing may lead to saving on transportation costs and remove uncertainty about the timing of delivery (which is particularly important in host countries with poorly functioning customs service). The converse is also possible. If expansion of multinationals forces local firms to exit and multinationals use local inputs less intensively, a negative effect would be observed in upstream sectors as well as industries using these inputs.

The results of surveys from the Czech Republic (2003) and Latvia (2003) provide evidence of all the above mechanisms. Firms in both countries reported learning about new technologies and marketing techniques from multinationals (figure 1). In the Czech Republic, local firms seemed to benefit equally from direct competitors and multinationals operating in their sector with whom they were not competing. Moreover, both firms experiencing loss of a market share and those unaffected by foreign entry reported positive knowledge externalities associated with FDI (table 1).

Figure 1. Perceived Effects of FDI Inflows into the Same Industry by Survey Respondents in the Czech Republic and Latvia



Source: Javorcik and Spatareanu (2005).

Table 1. Knowledge Flows from Entry of Multinationals into Sector (percent of Czech firms reporting)

Item	From multinationals in the same sector that are		As a result of foreign entry into the same sector respondents	
	Competitors	Noncompetitors	Lost market share	Did not lose market share
Learning about new technologies	26	22	23	25
Learning about new marketing techniques	12	11	11	12
Benefiting from knowledge of employees trained by multinationals	5	2	3	4

Note: The sample size included 327 answers.

Data source: FIAS (2004).

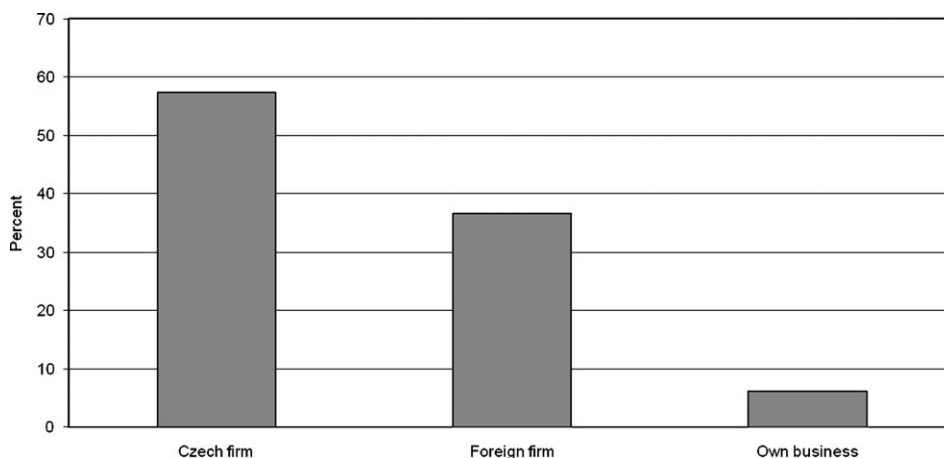
Survey respondents also reported benefiting from the knowledge of workers who had previously been employed by multinationals (figure 1). This channel of spillovers is less prevalent, however, because domestic firms may have a hard time competing with multinationals in wages. However, multinationals reported that when their employees leave, they usually find employment in local firms (figure 2).

Local respondents also reported an increase in competition resulting from foreign entry. Among domestic producers 41–48 percent said that foreign entry increased the level of competition in their industry; a smaller, though significant, percentage (29 percent) reported losing market share to the foreign entrants. Survey respondents mentioned that they had lost employees to multinational entrants, although this phenomenon did not seem to be very widespread. Finally, some respondents believed that entry of multinationals worsened their access to credit (see figure 1).

The survey suggests both positive and negative effects on the demand for upstream production from the entry of multinationals. On the one hand, 18 percent of respondents reported benefiting from foreign entry by becoming suppliers to multinationals operating in their sector. On the other hand, 21 percent of respondents whose Czech clients had been acquired by foreign investors stopped supplying these clients. Of those who continued the business relationship, five firms reported having to comply with higher quality requirements.

An important message to take away from these results is the difference in the reported effects of FDI inflows. While domestic firms in both countries reported similar patterns with respect to increases in competitive pressures and loss of market share, the benefits of knowledge spillovers were much more prevalent in the Czech Republic. Twenty-four percent of Czech firms, but only 15 percent of Latvian

Figure 2. Place of Employment of Former Employees of Multinationals in the Czech Republic



Note: Eighty-two multinational firms responded to the question.

Data source: FIAS (2004).

firms, reported learning about new technologies from multinationals. The difference in the ability to learn about marketing techniques was much less pronounced. Whether these differences stem from differences in the composition of FDI inflows or differences in local firms' ability to absorb knowledge spillovers, the key message is that host country conditions affect the extent of knowledge spillovers.

The vast majority of econometric studies cannot distinguish between the mechanisms described above; many studies do not even include rudimentary controls for the level of competition. It is therefore not surprising that the literature has produced seemingly inconsistent results on intraindustry spillovers. Rather than interpreting a study with a marginal improvement in the methodology as invalidating all earlier findings, it would be more productive to focus on ways of isolating individual mechanisms.

Some progress has already been made in this direction. Görg and Strobl (2005) use Ghanaian data on whether or not the owner of a domestic firm had previous experience in a multinational, which they relate to firm-level productivity. Their results suggest that firms run by owners who worked for multinationals in the same industry immediately before opening their own firm are more productive than other domestic firms. Crespi and others (2007) combine self-reported data on sources of new knowledge from UK innovation surveys with information on firm-level total factor productivity. They find that competitors are one of the key sources of knowledge contributing to firm performance. They also show that reported knowledge flows from competitors are positively correlated with the presence of multinationals in the same industry.

Spillovers To Upstream Sectors

While multinationals have a strong incentive to prevent knowledge leakage to their competitors, they may want to transfer expertise and know-how to their suppliers. Passing on information about new technologies or business practices (such as quality control processes or inventory management techniques) to suppliers reduces input costs, increases input quality, and thus benefits multinationals. If the benefits of knowledge transfer are not fully reflected in lower quality-adjusted prices, the actions of multinationals result in knowledge spillovers.

As Pack and Saggi (2001) show in a theoretical model, even if technology transferred by a multinational to a developing country supplier diffuses to other firms in the supplying industry and benefits competitors of the multinational, both the developing country supplier and the multinational can benefit. In the absence of knowledge diffusion in the supplying industry and entry in the buying industry, the developing country supplier and the multinational are in a bilateral monopoly. They impose a pecuniary vertical externality upon each other by charging a price above marginal cost; the double marginalization problem thus exists. Knowledge diffusion in the supplying industry stimulates new entry and brings the input price closer to marginal cost, benefiting the multinational. Entry into the industry of the multinational brings the downstream price closer to marginal cost, increases output, and benefits the developing country supplier. As a result, as long as the competition resulting from diffusion in the supplying industry and entry into the industry of the multinational are not too severe, both firms gain from diffusion that leads to entry in the downstream market.

Several recent studies find evidence consistent with spillovers to upstream sectors. Using firm-level panel data from Lithuania, Javorcik (2004) shows that the total factor productivity of Lithuanian firms is positively correlated with the extent of potential contacts with multinational customers in downstream sectors. A one standard deviation increase in foreign presence in the buying sectors is associated with a 15 percent rise in the productivity of Lithuanian firms in the supplying industry. The productivity effect occurs from investments with joint foreign and domestic ownership but not from fully owned foreign affiliates. This finding is consistent with the evidence of an increase in local sourcing undertaken by jointly owned projects. Evidence supporting FDI spillovers to upstream sectors has also been found in other countries (see Javorcik and Spatareanu 2008 on Romania, and Blalock and Gertler 2008 on Indonesia).

Even in the case of spillovers to local suppliers, however, one should not expect a uniform effect across countries or across industries within a country, for several reasons. First, the decision to purchase inputs locally will be driven by the host country's trade regime, efficiency, and the predictability of its customs service and transport costs. The choice of input source also depends on whether a multinational

Table 2. Determinants of Sourcing Patterns by Multinationals

<i>Determinant</i>	<i>Share of multinationals responding (percent)</i>
<i>Reason for importing inputs from abroad</i>	
Using company's global suppliers	46
Implementing decision of parent company	37
Unavailability of particular products from local firms	36
Desire to purchase higher-quality inputs	30
<i>Reason for buying inputs from other multinationals operating in host country</i>	
Using firm's global suppliers	45
More competitive prices	45
Savings on transport costs	34
Benefits of proximity	30
Higher-quality products	29
Products not available from local firms	29
<i>Reason for buying inputs from local suppliers</i>	
Low prices	71
Benefits of proximity	64
Savings on transport costs	56
Savings on import duties	44

Note: The sample size included 327 answers.

Data source: FIAS (2004).

follows a centralized sourcing arrangement in order to benefit from volume discounts or access to customized inputs (UNCTAD 2001). Indeed, using the company's global suppliers was the main reason multinationals operating in the Czech Republic reported using imported inputs. In other cases the decision reflected the fact that particular inputs or inputs of sufficient quality were not available locally (table 2).

Because it may take time to develop relationships with local suppliers, one would expect new FDI projects to be less likely to use locally produced inputs than would investors with longer experience in the host country. This is confirmed by Belderbos, Capanelli, and Fukao (2000), who find that the proportion of inputs sourced locally by Japanese multinationals increases with the number of years of operation in a given host country. In sum, in situations in which upstream sectors in the host country are underdeveloped or the multinational has very specialized input needs or relies on centralized input sourcing, the scope for spillovers to upstream sectors may be limited.

Second, even if multinationals source inputs in the host country, they may buy them from other multinationals operating there. It is relatively common for producers of parts and components to follow their clients to a new host country. In such a situation, FDI inflows would affect supplying industries only by stimulating FDI inflows into upstream sectors, which in turn would lead to intraindustry effects in upstream sectors (described in the previous section).

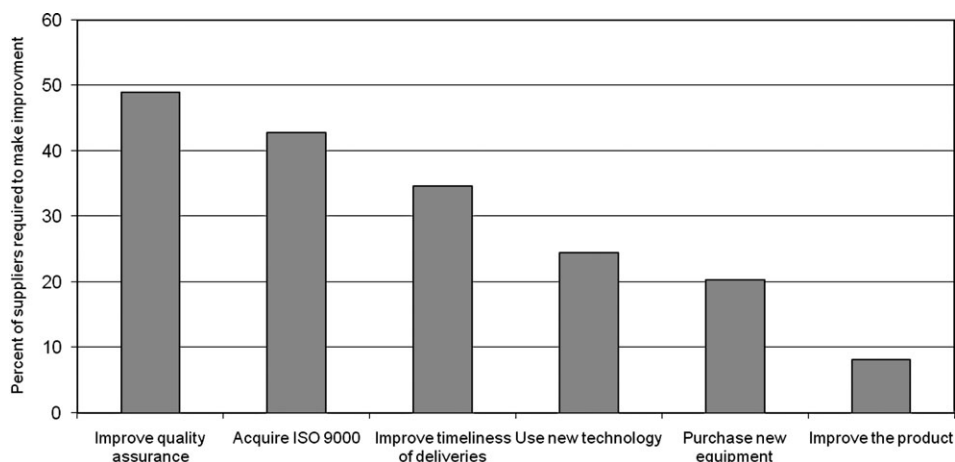
Third, in situations in which either a world-class supplying industry already exists or only basic inputs with limited technological content are needed, there is little scope for knowledge transfer. Multinationals may simply award contracts to the best local producers, and upstream benefits may be limited to increasing the demand for inputs and allowing upstream producers to benefit from economies of scale. The extent of these benefits hinges on multinationals increasing the overall demand for inputs (rather than replacing the demand from local competitors they forced to exit) and the production technology in upstream industries. The benefits of scale economies in the form of lower prices may be passed on to local input users in the sector of the multinational or other sectors.

Fourth—and more interesting from a development perspective—by imposing higher standards on their suppliers for product quality, technological content, or on-time delivery, multinationals may induce local producers in upstream sectors to make improvements. Is this situation different from firms learning about buyer expectations in foreign markets? Most likely it is, because information costs are much lower. Multinationals operate in the same country; contacting them does not require knowledge of a foreign language or entail high travel or communications costs. In some cases, a multinational may even be the party that initiates contact with a potential local supplier. Another difference is the prevalence of technical audits, which tend to be less widespread for export transactions. Some 20 percent (37 of 187) of Czech suppliers reported undergoing such an audit before signing a contract with a multinational; in some cases two or three audits were performed. The technical audits, while not considered by multinationals as a form of assistance, may be invaluable to local suppliers, as they may point out operational deficiencies of which they had not been aware.

Before signing a purchase order, multinationals often explicitly require future suppliers to make certain improvements. In the Czech Republic this was the case for more than a quarter of all suppliers surveyed (49 of 190). Almost half of the audits took place six months or more before the contract was signed. The most frequent requirements were improvements to the quality assurance process, acquisition of a quality certification (such as an ISO 9000), improvements to the timeliness of deliveries, use of a new technology, or purchase of new equipment (figure 3). The fact that improvements to the product were less frequent is consistent with the evidence suggesting that having a suitable product is in most cases a precondition for starting a dialogue with a potential multinational client.

The prospect of receiving a contract from a multinational also seems to induce local suppliers to undertake improvements on their own. Thirty-six percent of Czech suppliers reported making improvements with the explicit purpose of finding a multinational customer. These improvements included investing in new machinery and equipment, improving product quality, conducting staff training,

Figure 3. Types of Changes Required by Multinationals from Potential Suppliers in the Czech Republic



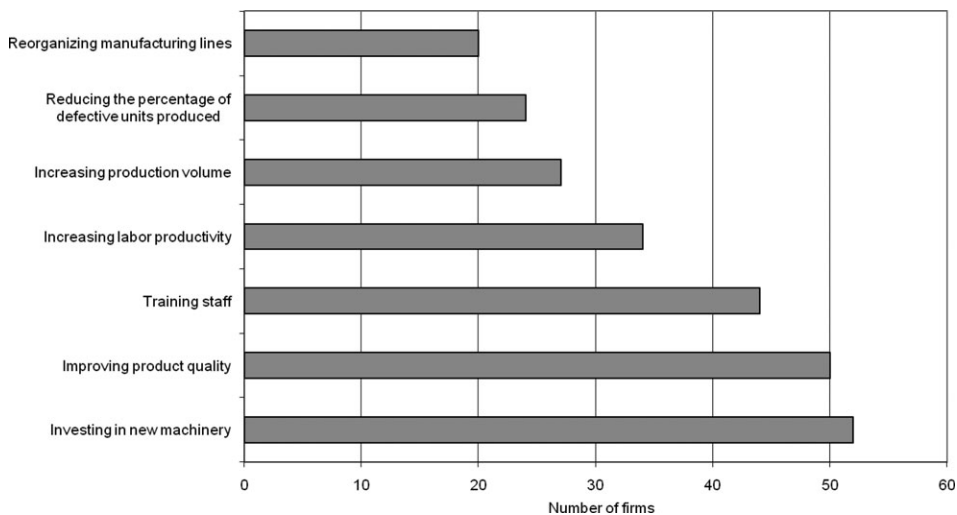
Data source: World Bank (2007).

increasing production volume, reducing the share of defective units produced, and reorganizing manufacturing lines (figure 4). Forty percent of Czech companies with ISO 9000 certification reported obtaining it in order to be able to supply multinational companies.

Fifth, multinationals often offer assistance to their current or prospective suppliers. To the extent that the cost of this assistance is not reflected in the lower prices multinationals pay for inputs, this assistance constitutes a knowledge externality. Forty percent of Czech suppliers surveyed in 2004 reported receiving some type of assistance from their multinational customer. The most common types of assistance extended was personnel training, advance payment, leasing of machinery, provision of inputs, and help with quality assurance and organization of production lines (figure 5).² The survey also indicated that multinationals offer assistance throughout their relationship with their suppliers. Assistance is often offered even before the contract is signed; it may also be provided both before and after completion of the first delivery.

The picture emerging from the survey of Czech firms is that the relationship between multinationals and local suppliers in a given country may entail many circumstances described above. The nature of the relationship may depend on the industry in question, characteristics of the multinational, and the level of sophistication of existing suppliers. As in the case of intraindustry effects, the relative importance of different mechanisms may differ depending on the country in question. Thus if two econometric studies focussing on different countries or the same country in different time periods find seemingly contradictory results, that does

Figure 4. Improvements Undertaken by Czech Firms in Order to Supply a Multinational

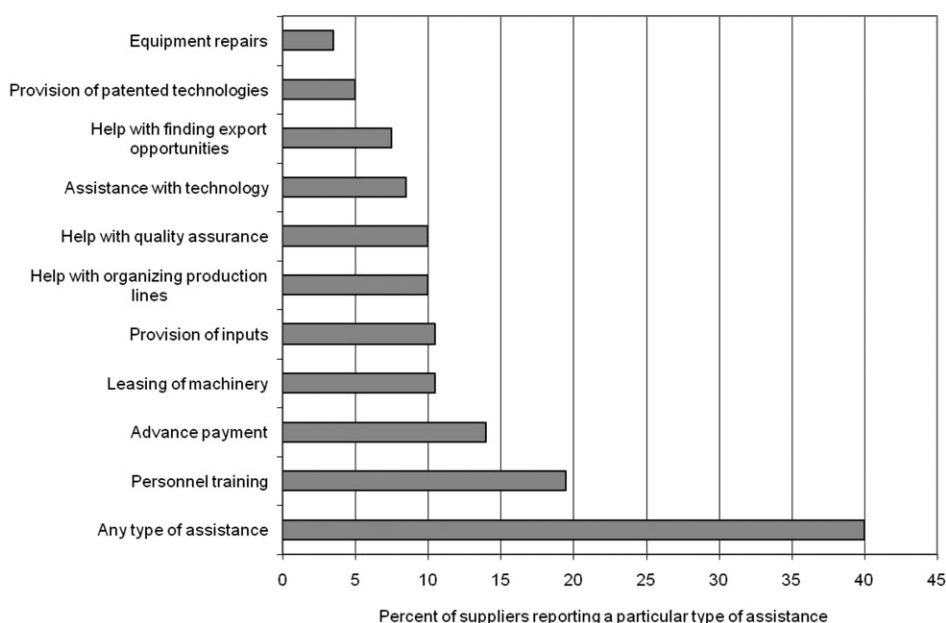


Data source: World Bank (2007).

not necessarily mean that one study casts doubt on the validity of the other study's methodology or that only one study has uncovered "the true relation." Expectations of multinationals as well as host country conditions may well have changed over time, with each study describing the reality of a given time period.

Finding a positive relation between the change in the presence of multinationals and productivity improvements in supplying sectors is consistent with the existence of knowledge spillovers, but it does not prove that such spillovers exist, for several reasons. First, in some cases it may reflect the efforts of suppliers to improve their performance in the hope of receiving contracts from multinationals. This is a case of a positive demand shock (entry of a multinationals) but not a knowledge spillover.³ Second, using industry-level deflators does not allow for an accurate adjustment of supplier's sales prices and thus may lead to overstating productivity improvements (if suppliers enjoy higher prices than other producers) or hide such effects (if multinationals require mandatory price cuts over the course of a relationship with a supplier). In the Czech Republic, for example, 37.5 percent of suppliers were required by their multinational customers to lower their prices by 1–30 percent (figure 6). To complicate matters further, mandatory price cuts affected both suppliers that benefited from the assistance extended by a multinational and those that did not receive such assistance. In sum, to understand the impact of multinationals on local suppliers it is necessary to go down to the level of suppliers rather than rely on industry-level information from the input–output matrix.

Figure 5. Types of Assistance Received by Czech Suppliers from Multinational Customers



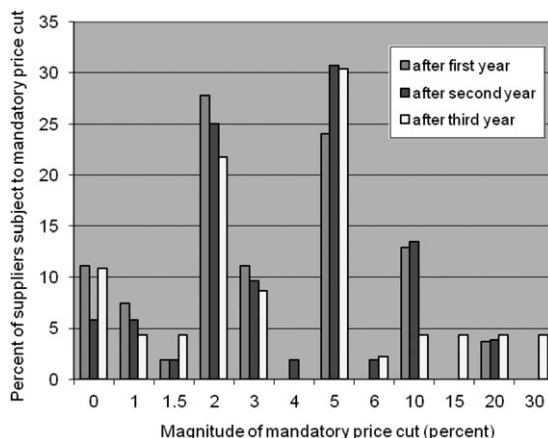
Data source: World Bank (2007).

Spillovers To Downstream Sectors

Starting with the theoretical contribution of Ethier (1982), researchers have argued that access to a greater variety of inputs raises the productivity of downstream industries. Access to a larger range or higher-quality inputs is one of the oft-cited arguments in favor of trade liberalization. A similar argument could be made for FDI inflows: entry of multinationals may have a positive impact on the performance of downstream sector by making new or more suitable inputs available to local producers.

No study has produced convincing and robust evidence in support of this channel of FDI spillovers. One difficulty in investigating this question empirically is that many multinationals produce primarily for exports; local enterprises in downstream sectors are thus rarely exposed to intermediates sold by these multinationals. However, even if the export orientation of multinationals (that is, the share of production sold abroad) is taken into account, as it is in Javorcik (2004), there is no evidence of productivity spillovers to downstream sectors. One possible explanation is that inputs tend to be accessible through imports; entry of multinationals is thus likely to play a smaller role relative to imports. To isolate the effect

Figure 6. Price Cuts Imposed on Czech Suppliers by Multinationals



Note: The percentage of suppliers subject to a price cut in a particular period is defined relative to the number of suppliers subject to a price cut at any time during the relationship with the multinational.

Data source: World Bank (2007).

of FDI, one would need to carefully control for the availability of imported inputs, which is almost never done in the studies of FDI spillovers.

Although the firm-level surveys cited in this article did not focus on this channel of FDI spillovers, they provide some evidence that its importance may be limited. In the 2003 Czech survey, 11 percent of respondents reported benefiting from foreign presence in their sector through access to inputs produced by multinationals; within this group two-thirds reported that these inputs had previously not been available in the Czech Republic.⁴ The figures are similar to those from the 2004 Czech survey, in which 10 percent of suppliers reported that multinationals had helped them with input provision. Inputs purchased from multinationals may have a greater effect on the user's productivity if they are accompanied by additional information or assistance on how to use them, which may be more difficult to obtain from producers located abroad. However, the 2003 survey indicated that only 6 percent of Czech firms within the group mentioned above received free assistance on how to use inputs purchased from a multinational.

The most likely source of spillovers to downstream industries may be the service sector, for two reasons. First, virtually all formal enterprises use basic services, such as telecommunications and banking; improvements in these sectors are therefore likely to affect all industries. Second, the performance of downstream sectors is tied more directly to the quality and availability of services supplied by providers operating domestically than it is for physical intermediate inputs. That is because the nature of the service industry and barriers to trade in services

mean that the scope for using cross-border trade to substitute for domestically produced service inputs is limited. Limited cross-border tradability of services also means that foreign service providers sell most of their output in the host country.

Foreign entry into the service industry may improve and expand the set of available producer services and introduce international best practices. It may also induce domestic competitors to make similar improvements. In Mexico, for example, Wal-Mart introduced cutting-edge retail practices (central warehousing, an appointment system, use of palletes), which significantly cut distribution costs. These practices were quickly adopted by other domestic retail chains competing with Wal-Mart (Javorcik, Keller, and Tybout 2006).

A greater choice of service providers may affect the performance of the manufacturing sector in three ways. First, entry of internationally successful players into service industries may lead to higher quality and greater reliability of services. Electricity provision or international phone communications may become more reliable as a result of new investments in infrastructure; credit decisions may be made more quickly as competition among banks increases. These improvements will limit disruptions to production and decrease the operating costs in downstream manufacturing sectors.

Second, new services may become available as a result of foreign entry. Examples include new financial instruments, multimodal transport services, and digital value-added services in telecommunications. The availability of such services may allow manufacturers to introduce productivity-enhancing changes to their operations, such as receiving production orders online or setting up online bidding systems for suppliers.

Third, liberalization of services may lead to wider access to services, by increasing the availability of business services to smaller firms or expanding Internet coverage into rural areas, for example. Improved access may in turn enhance the competitiveness of smaller or remotely located enterprises. To the extent that these improvements are not reflected in prices of services, they may be considered spillovers.

The 2004 Czech survey reveals that local entrepreneurs had positive perceptions of opening the service sector to foreign entry. A vast majority of respondents reported that liberalization contributed to improvements in the quality, range, and availability of services inputs. The positive perceptions ranged from 55 percent of respondents asked about the quality of accounting and auditing services to 82 percent for telecommunications. With regard to the variety of products offered, the positive views of liberalization ranged from 56 percent of respondents evaluating accounting and auditing services to 87 percent of respondents asked about telecommunications. The corresponding figures for the effect on service availability ranged from 47 percent in accounting and auditing to 80 percent in telecommunications (figure 7).

Arnold, Javorcik, and Mattoo (2007) formally examine the link between FDI in services and the performance of domestic firms in downstream manufacturing. Using firm-level data from the Czech Republic for 1998–2003, they measure the presence of FDI in services by the share of service output provided by foreign affiliates. They employ two definitions. The first considers the output of any firm with at least 10 percent of foreign equity as foreign; the second weights the output of each provider by the foreign equity share. The manufacturing–services linkage is captured using information on the degree to which manufacturing firms rely on intermediate inputs from service industries. The econometric results indicate that opening services to foreign providers leads to improved performance of downstream manufacturing sectors. This finding is robust to several econometric specifications, including controlling for unobservable firm heterogeneity and other aspects of openness and instrumenting for the extent of foreign presence in service industries. The magnitude of the effect is economically meaningful: a one standard deviation increase in foreign presence in service industries is associated with a 3.8 percent increase in the productivity of manufacturing firms relying on service inputs.

In sum, the evidence suggests that while foreign entry in manufacturing sectors is likely to have a limited effect on downstream sectors, opening service industries to FDI may result in significant gains to downstream industries.

Future Research

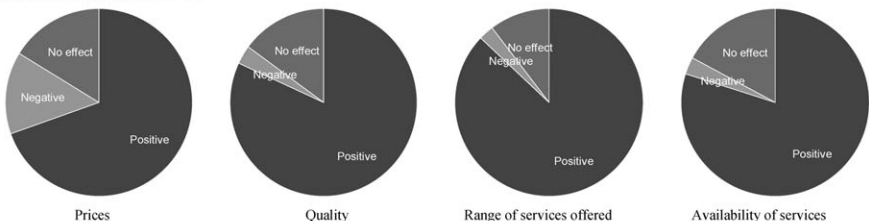
The survey evidence presented here has several implications for the direction of future research on FDI spillovers. First, it suggests that the focus of the debate should shift from attempting to generalize whether or not FDI spillovers exist to determining the conditions under which they are likely to do so. The nature and magnitude of FDI spillovers depends on the conditions in the host country, which determine both the type of FDI inflows as well as the extent to which local firms are likely to be affected (positively, negatively, or both) by foreign entry. Examining FDI spillovers in the context of one country at a time is unlikely to be very productive. What is needed is a multicountry study based on comparable high-quality, firm-level panel data. Such data would allow for examination of host country characteristics as determinants of both FDI inflows and spillovers from FDI. Conducting a meta-study focussing on the host country business environment and level of development could be another promising avenue for future research.

Second, more effort should be directed at understanding the exact mechanisms behind the observed patterns. Rather than correlating the performance of host country firms with the presence of multinationals in their or other sectors, researchers should look at the flows of workers between the two types of firms, identify

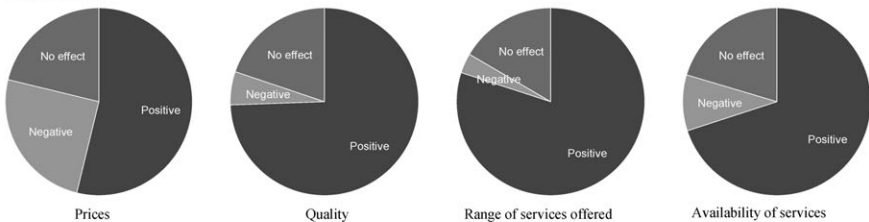
Figure 7. Perceptions of Opening Service Industries to Foreign Providers by Survey Respondents in the Czech Republic

Perceived impact of liberalization of ...

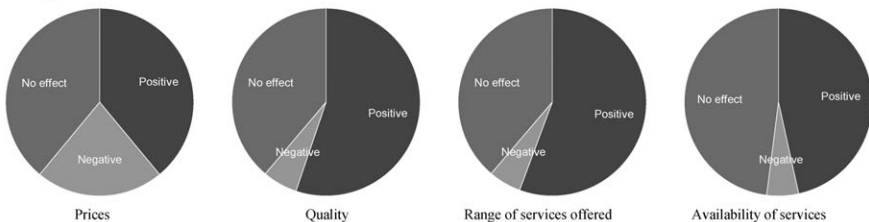
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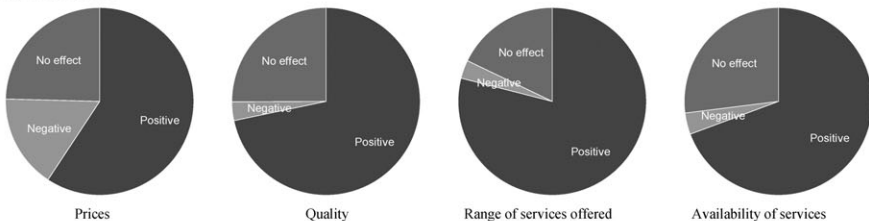
banking sector on



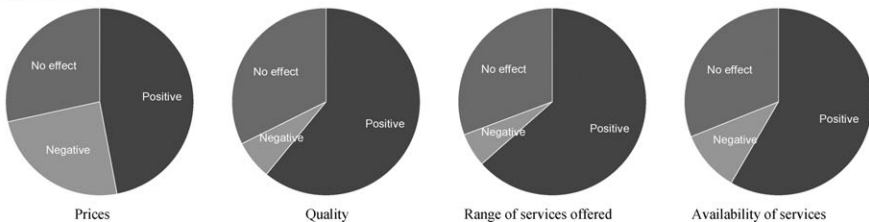
accounting sector on



insurance sector on



transport sector on



Source: Arnold, Javorcik, and Mattoo (2007), based on data from World Bank (2007).

domestic suppliers of foreign customers, consider the effect of foreign presence on the entry of new firms and their characteristics, and ask firms detailed questions about the sources of innovation. Some researchers have already pursued this line of study, but more work is needed. While it creates new challenges in terms of finding appropriate econometric strategies, collecting data, and overcoming the fear of relying on surveys, this area of research probably has the greatest potential.

Third, the scope of investigations should be extended to encompass the service sector. Anecdotal evidence suggests that the movement of service industry professionals to executive positions in other firms may constitute an important spillover channel to other service firms and to the manufacturing industry. For instance, McKendrick (1994) reports that local banks and financial institutions in Latin America and South Asia are filled with “alumni” of Citibank and BNP. Moreover, because the nature of the sector and trade barriers limit cross-border trade in services, opening service industries to foreign providers may constitute an important channel of spillovers to downstream manufacturing.

Conclusions: What Policy Advice Can Researchers Offer?

Many countries offer foreign investors more favorable treatment than they give domestic producers. Are such policies justified? The argument for special treatment for FDI is usually based on market failure. The presence of positive externalities associated with FDI constitutes an example of a market failure and may serve as a justification for subsidizing FDI. Given the difficulties in assessing the benefits of such externalities, however, it is easy to extend subsidies beyond levels that can be justified based on the magnitude of spillovers. According to Haskel, Pereira, and Slaughter (2007), this was the case in the United Kingdom, which extended incentives to foreign investors that exceeded the value of spillovers on a per job basis. Overpaying is even more likely if countries compete in offering FDI incentives.

Another justification for subsidizing FDI is based on information asymmetries. Domestic investors, who are better informed about investment opportunities in their country, have no incentive to share this information with potential foreign entrants. In such a situation, a capital-importing country would raise welfare by subsidizing foreign capital inflows (Gordon and Bovenberg 1996).⁵ However, if the first handful of FDI projects or entry of a prominent multinational serves as a signal to other investors that a particular country is a good location for FDI, the justification based on the information asymmetries may apply only to the initial period after opening to FDI.

Another way of dealing with information asymmetry is to provide information through investment promotion agencies. The activities of such agencies include

building an image of the host country as a good place to do business, reaching out to prospective investors through seminars and missions, participating in trade shows and one-to-one direct marketing, and helping committed investors cut through bureaucratic procedures. As obtaining information on investment opportunities and the required procedures tends to be more difficult in developing countries than in industrial economies, investment promotion should be particularly effective in a developing country context.

Investment promotion efforts in developing countries appear to be effective. A recent study by Harding and Javorcik (2007) relies on the fact that most investment promotion agencies target particular sectors in their efforts to attract FDI, a strategy investment promotion professionals believe represents best practice. If investment promotion is effective, one would expect to see a greater increase in FDI inflows in priority sectors than in other sectors. This is indeed what Harding and Javorcik (2007) show. They find that sectors explicitly targeted by investment promotion agencies in developing countries saw FDI inflows double following targeting. No such pattern was observed for nontargeted sectors during the same period. They conclude that investment promotion is a viable policy option for developing countries that have sound business climates and wish to attract FDI inflows.

Notes

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1. In a firm-level analysis of Côte d'Ivoire, Harrison and McMillan (2003) find that borrowing by foreign firms exacerbates the credit constraints faced by domestic firms.
2. Not all of the types of assistance listed are associated with knowledge flows.
3. Javorcik (2004) explicitly controls for changes in demand from downstream sectors.
4. The question should have asked about inputs available from multinationals in any sector, not just the sector in which the respondent operates.
5. The same argument applies to foreign portfolio flows.

References

- Arnold, Jens, Beata S. Javorcik, and Aaditya Mattoo. 2007. "Does Services Liberalization Benefit Manufacturing Firms? Evidence from the Czech Republic." Policy Research Working Paper 4109. World Bank, Washington, D.C.
- Belderbos, Rene, Giovanni Capannelli, and Kyoji Fukao. 2000. "The Local Content of Japanese Electronics Manufacturing Operations in Asia." In Takatoshi Ito, and Anne O. Krueger, eds., *The*

- Role of Foreign Direct Investment in East Asian Economic Development*. Chicago, IL: University of Chicago Press.
- Blalock, Garrick, and Paul J. Gertler. 2008. "Welfare Gains from Foreign Direct Investment through Technology Transfer to Local Suppliers." *Journal of International Economics* 74(2):402–21.
- Crespi, Gustavo, Chiara Criscuolo, Jonathan Haskel, and Matthew Slaughter. 2007. "Productivity Growth, Knowledge Flows and Spillovers." Department of Economics, Queen Mary, University of London.
- Ethier, Wilfred. 1982. "National and International Returns to Scale in the Modern Theory of International Trade." *American Economic Review* 72(3):389–405.
- FIAS (Foreign Investment Advisory Services). 2003. "Latvia: Toward a Knowledge Economy: Upgrading the Investment Climate and Enhancing Technology Transfers." International Finance Corporation and World Bank, FIAS, Washington, D.C.
- . 2004. "Czech Suppliers of Multinational Corporations: Benefits and Challenges." International Finance Corporation and World Bank, FIAS, Washington, D.C.
- Gordon, Roger, and Lans Bovenberg. 1996. "Why Is Capital So Mobile Internationally? Possible Explanations and Implications for Capital Income Taxation." *American Economic Review* 86(5): 1057–75.
- Görg, Holger, and David Greenaway. 2004. "Much Ado about Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment?" *World Bank Research Observer* 19(2):171–97.
- Görg, Holger, and Eric Strobl. 2001. "Multinational Companies and Productivity Spillovers: A Meta-analysis." *Economic Journal* 111(475):723–39.
- . 2005. "Spillovers from Foreign Firms through Worker Mobility: An Empirical Investigation." *Scandinavian Journal of Economics* 107(4):693–709.
- Harding, Torfinn, and Beata S. Javorcik. 2007. "Developing Economies and International Investors: Do Investment Promotion Agencies Bring Them Together?" Policy Research Working Paper 4339. World Bank, Washington, D.C.
- Harrison, Ann, and Margaret McMillan. 2003. "Does Direct Foreign Investment Affect Domestic Firms' Credit Constraints?" *Journal of International Economics* 61(1):73–100.
- Haskel, Jonathan E., Sonia C. Pereira, and Matthew J. Slaughter. 2007. "Does Inward Foreign Direct Investment Boost the Productivity of Domestic Firms?" *Review of Economics and Statistics* 89(3): 482–96.
- Javorcik, Beata S.. 2004. "Does Foreign Direct Investment Increase the Productivity of Domestic Firms? In Search of Spillovers through Backward Linkages." *American Economic Review* 94(3): 605–27.
- Javorcik, Beata S., and Mariana Spatareanu. 2005. "Disentangling FDI Spillover Effects: What Do Firm Perceptions Tell Us?" In T. Moran, E. Graham, and M. Blomstrom, eds., *Does Foreign Direct Investment Promote Development?* Washington, D.C.: Institute for International Economics.
- . 2008. "To Share or Not to Share: Does Local Participation Matter for Spillovers from FDI?" *Journal of Development Economics* 85(1–2):194–217.
- Javorcik, Beata S., Wolfgang Keller, and James Tybout. 2006. *Openness and Industrial Response in a Wal-Mart World: A Case Study of Mexican Soaps, Detergents and Surfactant Producers*. NBER Working Paper 12457, Cambridge, Mass.: National Bureau of Economic Research.
- Lipsey, Robert. 2002. *Home and Host Country Effects of FDI*. NBER Working Paper 9293. Cambridge, Mass.: National Bureau of Economic Research.
- McKendrick, David. 1994. "Building the Capabilities to Imitate Product and Managerial Know-how in Indonesian Banking." *Industrial and Corporate Change* 3(2):513–35.

- Moran, Theodore. (forthcoming). "How to Investigate the Impact of Foreign Direct Investment on Development and Use the Results to Guide Policy." Brookings Trade Forum, Washington, D.C.
- Pack, Howard, and Kamal Saggi. 2001. "Vertical Technology Transfer via International Outsourcing." *Journal of Development Economics* 65(2):389–415.
- Rodriguez-Clare, Andres. 1996. "Multinationals, Linkages, and Economic Development." *American Economic Review* 86(4):852–73.
- Rodrik, Dani. 1999. "The New Global Economy and Developing Countries: Making Openness Work." Overseas Development Council Policy Essay 24. Washington, D.C.
- Saggi, Kamal. 2002. "Trade, Foreign Direct Investment and International Technology Transfer: A Survey." *World Bank Research Observer* 17(2):191–235.
- UNCTAD (United Nations Conference on Trade and Development). 2001. "The World of Investment Promotion at a Glance: A Survey of Investment Promotion Practices." United Nations Advisory Study 17. UNCTAD/ITE/IPC/3, Geneva.
- World Bank. 2007. "Services Policies, Economic Performance, and Trade Agreements: Exploratory Analyses of ECA Transition Economies." World Bank, Europe and Central Asia Region, Washington, D.C.