New Kids on the Block:
Adjustment of Indigenous Producers to FDI Inflows

Beata S. Javorcik*

I. Introduction

The past several decades have witnessed a spectacular increase in international trade and foreign direct investment (FDI) both in developed and developing countries. While a large literature has investigated the adjustment process taking place in the aftermath of trade liberalization, there is much less systematic evidence on how countries adjust after receiving large inflows of FDI.

This purpose of this note is to summarize the existing empirical evidence on how indigenous producers are affected by the presence of foreign investors and how they respond to new opportunities and challenges created by FDI inflows. As the existing knowledge on this subject is still limited, the note points to potentially fruitful areas for future research.

The note starts with a brief review of the arguments for why indigenous producers should be affected by FDI. There is a consensus in the literature that multinational corporations (MNCs) are characterized by large endowments of intangible assets which translate into superior performance. This means that MNCs present formidable competition for indigenous producers in any host country, while at the same time being a potential source of knowledge spillovers (section II). To substantiate this view, the note presents empirical evidence from Indonesia indicating that new foreign entrants taking the form of greenfield projects exhibit higher productivity than domestic entrants or mature domestic producers. Further, the note reviews evidence on foreign acquisitions of Indonesian plants which suggests that such acquisitions lead to large and rapid productivity improvements taking place through deep restructuring of the acquisition targets (section III).

Next, the note discusses findings of enterprise surveys and econometric firm-level studies which suggest that FDI inflows increase competitive pressures in their industry of operation (section IV) and lead to knowledge spillovers within and across industries (section V). In section VI, the implications of inflows of FDI into service sectors are reviewed. In particular, it is argued that presence of foreign service providers may increase the quality, range and availability of services, thus benefiting downstream users in manufacturing industries and boosting their performance. The focus then shifts to global retail chains and their impact on the level of competition in the supplying sectors. The last section concludes with suggestions for future research.

* University of Oxford and CEPR, Department of Economics, Manor Road Building, Manor Road, Oxford OX1 3UQ, United Kingdom. Email: beata.javorcik@economics.ox.ac.uk.

II. Why should we expect indigenous producers to be affected by FDI?

A basic tenet of the theory of the multinational firm is that such firms rely heavily on intangible assets in order to successfully compete in distant and unfamiliar markets. These assets, named ownership advantages by Dunning (1983), can take the form of new technologies and well-established brand names, know-how, management techniques, etc. The theory further postulates that intangible assets, developed in headquarters, can be easily transferred to foreign subsidiaries and their productivity is independent on the number of facilities in which they are employed. The multinational thus offers the world increased technical efficiency by eliminating the duplication of the joint input that would occur with independent national firms (Markusen 2002). In a similar view, recent theoretical work focusing on heterogenous firms predicts that only most productive firms can afford the extra cost of setting up production facilities in a foreign country and thus multinationals come from the upper part of the productivity distribution of firms in their country of origin (Helpman et al. 2004).

The data confirm that multinationals are responsible for most of the world's research and development (R&D) activities. In 2003, 700 firms, 98 percent of which are multinational corporations, accounted for 46 percent of the world's total R&D expenditure and 69 percent of the world's business R&D. Considering that there are about 70,000 multinational corporations in the world, this is a conservative estimate. In 2003, the gross domestic expenditure on R&D by the eight new members of the EU at 3.84 billion dollars[1] was equal to about half of the R&D expenditure of the Ford Motor (6.84 billion), Pfizer (6.5 billion), DaimlerChrysler (6.4 billion) and Siemens (6.3 billion) during the same year. It was comparable to the R&D budget of Intel (3.98 billion), Sony (3.77 billion), Honda and Ericsson (3.72 billion each) (see UNCTAD 2005). Aggregate data reveal a similar pattern–more than 80 percent of global royalty payments for international transfers of technology in 1995 were made from subsidiaries to their parent firms (UNCTAD 1997).

Even though most of the R&D activity undertaken by multinational corporations remains in their home country, recent years have witnessed a growing internationalization of R&D efforts. According to the data collected by UNCTAD (2005) in their 2004-5 survey of the world's largest R&D investors, the average respondent spent 28% percent of its R&D budget abroad in 2003, including in-house expenditure by foreign affiliates and extramural spending on R&D contracted to other countries. Consider that 62.5 percent of business R&D conducted in Hungary was undertaken by foreign affiliates. The corresponding figure for the Czech Republic was 46.6%, while in Poland and Slovakia foreign affiliates accounted for 19% of business R&D.

It has also been demonstrated that multinational companies tend to invest more in labor training than local firms in host countries.[2] A significant portion of outlays on employee training

[1] The group includes the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. As the 2003 figures were not available for Lithuania and Slovenia, the 2002 data were used for these countries.

[2] For instance, according to the survey described by Kertesi and Köllö (2001), foreign-owned firms in Hungary spent 14.2 percent of their investment on training, as compared to 2.4 percent in the case of domestic firms.

is associated with technology transfer from the parent company to its foreign subsidiaries. It is not uncommon for staff from headquarters to conduct training in subsidiaries or for subsidiary staff to be trained at headquarters (Ramachandaram 1993).

The combination of large endowments of intangible assets and high investment in staff training has three implications. First, foreign affiliates should exhibit superior performance relative to indigenous producers and thus should directly contribute to increasing the productivity level of the host country. Second, inflows of FDI should lead to increased competitive pressures in their sector of operation in the host country. And third, presence of FDI is likely to benefit indigenous producers through knowledge spillovers.

III. Are foreign affiliates different from indigenous producers?

This section aims to substantiate the claims about superior performance of foreign affiliates by drawing on the empirical evidence from Indonesia. First, we compare the characteristics of new FDI greenfield projects to those of new Indonesian entrants and mature Indonesian producers. Then, we present evidence on how foreign ownership affects the performance of acquired Indonesian plants.

Our exercise is based on the plant-level information from the Indonesian Census of Manufacturing. The census surveys all registered manufacturing plants with more than 20 employees. The sample covers the period 1983-2001 and contains more than 308,439 plant observations, of which about 5.5 percent belong to foreign-owned plants. The average spell a plant remains in the sample is about 11 years.

In the first part of the exercise, which draws on Arnold and Javorcik (2009a), the following empirical specification is estimated:

$$Y_{it} = \alpha + \beta_1 \text{ Foreign greenfield entrant}_{it} + \beta_2 \text{ Domestic entrant}_{it} + \beta_3 \text{ Other foreign affiliate}_{it} + \gamma_j + \delta_r + \varphi_t + \varepsilon_{it} \quad (1)$$

where Y_{it} is one of a series of outcome variables pertaining to plant i observed at time t. Foreign greenfield entrant is an indicator variable taking the value of one for plants which are no more than three years old and which at the moment of establishment had a foreign ownership share of at least 20 percent of total equity. Such plants are identified on the basis of foreign ownership and age.[3] The variable is equal to zero in all other cases. Domestic entrants are defined as domestic plants in the first three years of their operations. The category other foreign affiliate encompasses all establishments with a foreign ownership share of at least 20 percent of total equity, which are not foreign greenfield entrants. Thus, the comparison group in this exercise is

Similarly, a World Bank study focusing on Malaysia also showed that foreign-owned firms provide more training to their workers than domestic enterprises (World Bank 1997).

[3] The information on foreign ownership and age, needed to identify greenfield projects, is available starting in 1975.

the mature indigenous producers. To capture differences between industries, regions and time periods, the specification also includes 4-digit industry fixed effects (γ_j), 27 province fixed effects (δ_r) and year fixed effects (φ_t).

If foreign ownership is indeed associated with superior performance, this pattern should already be observable among new greenfield entrants who should exhibit different characteristics from new domestic establishments. As evident from Table 1, this is indeed the case. New greenfield projects exhibit higher total factor productivity (TFP) and labor productivity levels as well as a higher TFP growth than both new and mature Indonesian producers. They are also larger in terms of output and employment. They pay higher wages and employ a larger proportion skilled workers. They are more capital intensive and invest more in general as well as in machinery. They export a larger share of their output and are more reliant on imported inputs. In all cases, the difference between domestic and foreign entrants is statistically significant.

The performance of new foreign entrants is, however, dwarfed by the TFP and labor productivity of mature foreign affiliates. The difference between the two groups is statistically significant. In contrast, when compared to mature foreign affiliates, new greenfield projects appear to have higher investment outlays in general as well as higher investment outlays on machinery. They have a higher capital-labor ratio and experience a faster productivity growth. They also appear to be more connected to international production networks, as evidenced by a higher reliance on export markets and imported inputs. They have a lower capacity utilization which is not a surprise for startup operations.

The magnitudes of the estimated coefficients are economically meaningful. For instance, while new domestic entrants are on average 7 percent less productive than mature Indonesian producers, new greenfield operations exhibit on average a 4 percent higher TFP level and for mature foreign affiliates the premium reaches 36.6 percent. The share of output exported by new indigenous producers is 3 percentage points higher when compared to mature Indonesian plants. This figure is an impressive 35 percent points for the new foreign entrants and 21 percentage points for mature foreign affiliates.[4]

As the majority of global FDI flows take the form of acquisitions rather than greenfield projects, the next question one would like to ask is whether foreign ownership leads to an improved performance in the acquired establishments. This view is confirmed by the empirical analysis of Arnold and Javorcik (2009b) who use the data mentioned above and control for the selection of acquisition targets by combining propensity score matching with a difference-in-differences approach. They show that foreign ownership leads to significant productivity improvements in

[4] If entrants (domestic and foreign) were defined as plants in the first two years of their operation, we would find that domestic entrants are characterized by lower TFP and labor productivity than foreign entrants and mature Indonesian plants. Foreign entrants would be found to outperform mature Indonesian plants in terms of labor productivity but would not be significantly different in terms of TFP. If entrants were defined as plants in the first year of their operation, the conclusions would be the same as those just stated except for foreign entrants exhibiting lower TFP than mature domestic producers.

the acquired plants. The improvements become visible in the acquisition year and continue in subsequent periods. After three years, the acquired plants exhibit a 13.5 percent higher productivity than the control group. The rise in productivity is a result of restructuring, as acquired plants increase investment outlays, employment and wages. Foreign ownership also appears to enhance the integration of plants into the global economy through increased exports and imports. Similar productivity improvements and evidence of restructuring are also found in the context of foreign privatizations

The profound changes taking place in the acquired plants, documented by Arnold and Javorcik (2009b), do not extend to all aspects of plant operations. FDI does not appear to induce increases in the skill intensity of the labor force (defined as the share of white collar workers in total employment) or the capital-labor ratio.

How can we reconcile an increase in TFP, labor productivity and wages with no evidence of changes to skill composition or the capital-labor ratio? One possibility is that new foreign owners introduce organizational and managerial changes that make the production process more efficient by reducing waste, lowering the percentage of faulty product and using labor more effectively.[5] Another possibility is that while foreign owners do not alter the skill composition of labor, they are able to attract more experienced and motivated workers.[6] They may also substitute expatriate staff for local managers and introduce pay scales linked to performance in order to motivate their staff.[7] This possibility is in line with the earlier observation that acquired plants hire a large number of new employees and raise the average wage. Further, foreign owners may invest more in staff training, which is consistent with international experience mentioned earlier. Yet another possibility is that the use of higher quality inputs or more suitable parts and components translates into higher productivity.[8] This possibility is supported by the observation of FDI leading to a greater reliance on imported inputs.

III. Does FDI increase competitive pressures in the host country?

The superior performance of foreign affiliates documented in the previous section suggests that inflows of FDI are likely to increase competitive pressures in the host country, provided that at

[5] A relevant example of organizational changes introduced by a foreign investor in its Chinese affiliate is presented in Sutton (2005). According to the interviewed engineer, what mattered was not the obvious alternation to the physical plant, but rather inducing a shift in work practices. This shift involved a move away from traditional notions of inspection at the end of the production line to a system in which each operator along the line searched for defects in each item as it arrived and as it departed. The idea of such constant monitoring was in part to avoid adding value to defective units. More importantly, this system allowed for a quick identification and rectification of sources of defects.

[6] About 10 percent of Czech firms surveyed by the World Bank in 2003 reported that they lost employees as a result of FDI entry into their sector (Javorcik and Spatareanu 2005).

[7] Lipsey and Sjöholm (2004) find that foreign affiliates in Indonesia pay higher wages to workers with a given educational level relative to domestic producers.

[8] For instance, a lower percentage of faulty inputs translates into fewer final products that must be rejected at the quality control stage.

least part of their output is destined for the host country market. This view is supported by two types of evidence.

First, the most direct (though subjective) evidence comes from enterprise surveys where managers are directly asked about the implications of FDI inflows into their sectors. As reported by Javorcik and Spatareanu (2005), 48 percent of Czech firms interviewed believed that the presence of multinationals increased the level of competition in their sector. The same was true of two-fifth of Latvian enterprises. Almost thirty percent of firms in each country reported losing market share as a result of FDI inflows.

Increased competitive pressures resulting from FDI inflows are likely to lead to adjustments similar to those documented in the literature on tariff liberalization (e.g., Pavcnik 2002): exit of the least productive indigenous firms and expansion of better performers. While no direct evidence of such adjustment is available for episodes of large FDI inflows, it is interesting to note that Czech firms reporting in a 2003 survey rising competitive pressures as a result of foreign entry experienced a faster productivity growth and a larger increase in employment in 1997-2000 than other firms (Javorcik and Spatareanu 2005). This pattern is consistent with the idea that only firms able to make improvements were able to withstand increased competition and survive. In contrast, Czech firms reporting loss of a market share, which they attributed to foreign presence in their sector, experienced a much larger decline in employment and a slower TFP growth than other firms, which supports the idea that weaker performers decline in the face of increased competition.

The second piece of evidence comes from firm-level panel studies, some of which have documented a negative relationship between the presence of foreign affiliates in the sector and the performance of indigenous producers. Such a pattern has, for instance, been found by Aitken and Harrison (1999) in Venezuela. The authors' interpretation of this finding was that the expansion of foreign affiliates took part of the market share away from local producers, forcing them to spread their fixed cost over a smaller volume of production and resulting in a lower observed TFP. As pointed out by Moran (2007) , during the time period considered in the study, Venezuela was pursuing an import substitution strategy, thus indigenous producers were not exposed to significant competition from abroad. Thus it is not surprising FDI inflows could have had a large negative effect on market shares of indigenous producers.

Though this issue has not been formally investigated, the magnitude of the increase in competitive pressures resulting from FDI inflows is likely to depend on host country characteristics. It will be limited in countries with liberal trade regimes, and quite large in countries with restrictive trade policies.

IV. Does FDI lead to knowledge spillovers?

The combination of large endowments of intangible assets and high investment in staff training, both of which characterize multinational companies, suggest that FDI can potentially lead to knowledge spillovers in a host country. The existence of such spillovers is supported by several types of evidence.

First, evidence of knowledge spillovers appears in enterprise surveys. For instance, according to Javorcik and Spatareanu (2005), 24 percent of Czech firms and 15 percent of Latvian firms reported learning about new technologies from multinationals operating in their sector. The difference in the ability to learn about marketing techniques was much less pronounced (about 12 percent of respondents in each country). 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 second type of evidence on spillovers from FDI comes from studies asking whether the movement of employees from MNCs to local establishments benefits the productivity of the latter. This is a very promising area for future research, though due to high data requirements, there exist only a few studies on this topic. 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. Using employer-employee data from Norway (though Norway is not a developing country, the study is worth mentioning here), Balsvnik (2008) finds that hiring workers with MNC experience boosts the productivity of domestic firms (controlling for other factors, including the total number of new employees). In a related study, Poole (2009) argues that if movement of labor is a spillover channel, we should observe that workers in domestic establishments with a greater share of employees with MNC experience should enjoy higher wages. Using a matched employer-employee data set from Brazil, she finds results consistent with the existence of such spillovers. Namely, *ex-ante* identical workers in establishments with a higher proportion of workers with some experience at a multinational firm earn higher wages, though this effect is statistically significant only in some industries.

The third type of evidence on spillovers from FDI comes from firm-level panel studies. While the identification of knowledge spillovers within an industry is complicated by the existence of the competition effect mentioned in the previous section, spillovers through linkages to the supplying sectors seem (at least *a priori*) to be easier to capture. Evidence consistent with productivity spillovers benefiting upstream producers has been found in Lithuania by Javorcik (2004) and Indonesia by Blalock and Gertler (2008). Such evidence, though convincing, relies on input-output matrices to capture linkages between MNCs and their suppliers rather than information on actual relationships between indigenous producers and multinationals. Ideally,

the literature should move towards identifying MNC suppliers and analyzing the causal relationship between doing business with MNCs and supplier performance.

The limited information available suggests that MNC suppliers are different from other indigenous producers. Controlling for industry affiliation and year fixed effects, Javorcik and Spatareanu (2009a) find that Czech firms supplying MNCs tend to be 13 percent larger in terms of employment and 18 percent in terms of sales value, though they do not experience a faster sales growth. They tend to have higher TFP levels (14 percent premium) and labor productivity measured as value added per worker (23 percent premium). They also appear to be more capital intensive (17 percent) and pay higher wages (12 percent). Controlling for firm size does not change these conclusions (see Table 2).

Further, Javorcik and Spatareanu (2009a) find that while more productive firms self-select into supplying relationships with multinationals, the results from the instrumental variable approach are suggestive of learning from the relationships with MNCs. As these conclusions are based on a small sample, they should be treated with caution and tested using a larger data set.

From the perspective of policy makers more interesting is the observation that Czech firms supplying MNCs are less credit constrained than non-suppliers. A closer inspection of the timing of the effect suggests that this result is due to less constrained firms self-selecting into becoming MNC suppliers rather than the benefits derived from the supplying relationship (Javorcik and Spatareanu 2009b).

This result is not surprising, as survey evidence suggests that supplying MNCs often requires significant investment outlays and obtaining costly quality certifications (e.g., ISO 9000). For instance in a survey of Czech enterprises, 40 percent of all respondents reporting having such an ISO certification, obtained the certification in order to become suppliers to multinationals.

The above evidence is suggestive of well functioning credit markets being important in facilitating business relationships between local firms and MNCs, though they *do not* suggest that a well developed financial market is a *sufficient* condition for such relationships to take place. Other factors, such as a certain level of sophistication of the local manufacturing sector, may be needed in order for these relationships to materialize.

V. FDI in services

Most of the barriers to FDI today are not in goods but in services (UNCTAD, 2004), reflecting the unwillingness of governments, particularly in the developing world, to allow unrestricted foreign presence in what they believe are "strategic" sectors. For instance, even though economies in South East Asia, such as Malaysia and Thailand, which have reaped huge benefits from the liberalization of trade and investment in goods continue to maintain

restrictions on foreign ownership in services ranging from transport to telecommunications. India, which is emerging as a highly competitive supplier of a range of skilled labor-intensive services, still restricts foreign ownership in banking, insurance, telecommunications and retail distribution.

Yet FDI in services presents a large source of potential gains for the host country. The nature of many service industries and the existing barriers to trade in services mean that the scope for using cross-border trade to substitute for domestically produced service inputs is limited. Therefore, competitiveness of manufacturing sectors is tied more directly to the quality and availability of services supplied domestically than it is the case for physical intermediate inputs. As virtually all enterprises use basic services, such as telecommunications and banking, improvements in these services are likely to affect all industries.

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 about FDI inflows, especially into service industries.

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 palettes), which significantly cut distribution costs. These practices were quickly adopted by other domestic retail chains competing with Wal-Mart (Javorcik, Keller, and Tybout 2008).

Survey data from the Czech Republic reveal that local entrepreneurs have 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 (Arnold et al. 2007).

Arnold et al. (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 services output provided by foreign affiliates. 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.

FDI inflows into services, and more specifically into the wholesale and retail sector, may also lead to an increased competition in the manufacturing industries in a host country. Global retail chains with their extensive supplier networks spanning multiple countries, if not continents, are much better positioned than smaller national chains to put pressure on indigenous suppliers. This view is supported by the results of a case study of the soap, detergent and surfactant (SDS) producers in Mexico. According to Javorcik et al. (2008), entry of Wal-Mart into Mexico changed the way that SDS producers and other suppliers of consumer goods interacted with retailers. By exercising its bargaining power, Wal-Mart squeezed profit margins among the major brands, offering them higher volumes in return. It also engaged the most efficient small-scale local producers as suppliers of store brands, thereby creating for itself a residual source of SDS products that could be used in bargaining with the major (multinational) branded suppliers. Those local firms that were not efficient enough to meet Wal-Mart's terms lost market share, and many failed. At the same time, the limited set of producers that survived grew, and with prodding from Wal-Mart they became more efficient and innovative, adopting innovations first introduced into the market by their multinational competitors.

This view finds further support in the results of Javorcik and Li (2008) who examine how the presence of global retail chains affects firms in the supplying industries in Romania. Applying a difference-in-differences method and the instrumental variable approach, the authors conclude that expansion of global retail chains leads to a significant increase in the TFP in the supplying industries. Presence of global retail chains in a Romanian region increases the TFP of firms in the supplying industries by 15.2 percent and doubling the number of chains leads to a 10.8 percent increase in total factor productivity. However, the expansion benefits larger firms the most and has a much smaller impact on small enterprises.

VI. Future Research

The evidence presented in this note has several implications for the direction of future research on the adjustment process taking place in the aftermath of FDI inflows. 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 be present and investigating under what conditions their positive effect on indigenous firm performance will be dwarfed by

the increased competition resulting from foreign presence. Examining the impact of FDI in the context of one country at a time is unlikely to be very productive. What is needed is a multi-country study based on comparable high-quality, firm-level panel data that could take into account host country characteristics. Conducting a meta-study focusing 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 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 also 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 large benefits to downstream manufacturing, though at the same time increasing competitive pressures. Of course, allowing foreign services providers without undertaking complementary reforms (competition, regulation) is unlikely to be productive. More research is certainly needed to assess the conditions under which a host country can maximize the benefits from FDI in services.

Bibliography

Aitken, Brian and Ann Harrison (1999). Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela. American Economic Review v89, n3: 605-618.

Arnold, Jens Matthias and Beata S. Javorcik (2009a). Gifted Kids or Pushy Parents? Foreign Direct Investment and Plant Productivity in Indonesia, University of Oxford, Department of Economics Discussion Paper No. 434.

Arnold, Jens Matthias, Beata S. Javorcik and Aaditya Mattoo. (2006). Does Services Liberalization Benefit Manufacturing Firms? Evidence from the Czech Republic, World Bank Working Paper No. 4109.

Arnold, Jens Matthias and Beata S. Javorcik (2009b). Gifted Kids or Pushy Parents? Foreign Direct Investment and Plant Productivity in Indonesia, Journal of International Economics, forthcoming

Blalock, Garrick and Paul J. Gertler (2008). Welfare Gains from Foreign Direct Investment through Technology Transfer to Local Suppliers. Journal of International Economics v74 v2: 402-421.

Dunning, John H. (1993). Multinational Enterprises and the Global Economy. Wokingham, England: Addison-Wesley Publishing Company.

Ethier, Wilfred (1982). National and International Returns to Scale in the Modern Theory of International Trade. American Economic Review 72: 389-405

Görg, Holger and Eric Strobl (2005). Spillovers from Foreign Firms through Worker Mobility: An Empirical Investigation Scandinavian Journal of Economics 107(4): 693-709

Helpman, Elhanan, Marc J. Melitz and Stephen R. Yeaple (2004). Export Versus FDI with Heterogeneous Firms, American Economic Review 94(1): 300-316

Javorcik, Beata S. (2004). Does Foreign Direct Investment Increase the Productivity of Domestic Firms? In Search of Spillovers through Backward Linkages, American Economic Review v93, n3: 605-627.

Javorcik, Beata S. (2004). Can Survey Evidence Shed Light on Spillovers from Foreign Direct Investment? World Bank Research Observer, 23(2).

Javorcik, Beata S. and Yue Li. (2008). Do the Biggest Aisles Serve a Brighter Future? Global Retail Chains and Their Implications for Romania, World Bank Working Paper No. 4650.

Javorcik, Beata S. and Mariana Spatareanu (2005). "Disentangling FDI Spillover Effects: What Do Firm Perceptions Tell Us?" in Does Foreign Direct Investment Promote Development? T. Moran, E. Graham and M. Blomstrom, eds., Institute for International Economics.

Javorcik, Beata S. and Mariana Spatareanu (2009a). Tough Love: Do Czech Suppliers Learn from Their Relationships with Multinationals?, University of Oxford, mimeo.

Javorcik, Beata S. and Mariana Spatareanu (2009b). Liquidity Constraints and Linkages with Multinationals, World Bank Economic Review, forthcoming.

Kertesi, G. and J. Köllö. (2001). A gazdasági átalakulás két szakasza és az emberi töke átértékelödése, (Two phases of economic transformation and the revaluation of human capital). Közgazdasági Szemle 47: 897-919.

Lipsey, Robert E. and Fredrik Sjöholm (2004). Foreign direct investment, education and wages in Indonesian manufacturing Journal of Development Economics, 73(1): 415-422.

Markusen, James (2002). Multinational Firms and the Theory of International Trade, Cambridge: MIT Press.

Moran, Theodore (2007). How to Investigate the Impact of Foreign Direct Investment on Development and Use the Results to Guide Policy. Georgetown University mimeo.

Poole, Jennifer. (2009). Knowledge Transfers from Multinational to Domestic Firms: Evidence from Worker Mobility, University of California Santa-Cruz, mimeo.

Ramachandaram, Vijaya (1993). Technology transfer, Firm Ownership, and Investment in Human Capital. Review of Economics and Statistics 75(4): 664-670.

Sutton, John (2005). The Globalization Process: Auto-Component Supply Chain in China and India, in Bourguignon, F., Pleskovic B. and Andre Sapir, eds. Annual World Bank Conference on Development Economics – Europe. Are We on Track to Achieve the Millennium Development Goals?, Washington DC: World Bank and Oxford University Press.

UNCTAD (United Nations Commission on Trade and Development) (1997). World Investment Report: Transnational Corporations, Market Structure, and Competition Policy. New York: United Nations.

UNCTAD (2004). World Investment Report. The Shift Towards Services. New York and Geneva: United Nations.

UNCTAD (2005). World Investment Report: Transnational Corporations and the Internalization of R&D. New York and Geneva: United Nations.

World Bank (1997). Malaysia: Enterprise Training, Technology, and Productivity. World Bank. Washington, D.C.

Table 1. Comparison of foreign and domestic entrants

	TFP	Labor producti-vity	Output	Employ-ment	Average wage	Investment	Investment in machinery	Export share	Imported input share	Capital intensity	Skilled labor share	TFP growth
Foreign affiliate (> 3 yrs old)	0.366***	1.290***	2.687***	1.375***	0.766***	2.307***	2.217***	21.234***	0.286***	0.875***	0.045***	0.009*
	(0.008)	(0.012)	(0.020)	(0.012)	(0.008)	(0.035)	(0.029)	(0.330)	(0.003)	(0.017)	(0.002)	(0.005)
New foreign entrant (yrs 1-3)	0.040**	0.927***	1.614***	0.663***	0.505***	3.090***	2.892***	34.754***	0.342***	1.455***	0.020***	0.070***
	(0.017)	(0.025)	(0.043)	(0.026)	(0.017)	(0.073)	(0.061)	(0.640)	(0.005)	(0.037)	(0.003)	(0.014)
New domestic entrant (yrs 1-3)	-0.075***	-0.046***	-0.279***	-0.213***	-0.077***	0.433***	0.339***	2.835***	-0.003**	0.341***	0.001	0.037***
	(0.005)	(0.006)	(0.010)	(0.006)	(0.004)	(0.018)	(0.015)	(0.178)	(0.001)	(0.011)	(0.001)	(0.004)
R^2	0.45	0.32	0.28	0.17	0.64	0.10	0.10	0.21	0.23	0.20	0.19	0.14
No. of obs.	199,479	308,358	308,439	308,441	308,436	304,940	283,773	212,728	295,795	203,266	252,448	164,130

*, **, *** indicate statistical significance at the 10, 5 and 1% level, respectively.

Source: Arnold and Javorcik (2009a).

Table 2. Supplier Premium

	(a) (%)	(b) with controls for firm size
Total employment	**12.8**	-
Sales	**17.7**	**11.1**
Sales growth	n.s.	n.s.
Capital per worker	**16.6**	**18.6**
TFP	**14.1**	**11.6**
Value added per worker	**23.2**	**12.2**
Wages per worker	**11.7**	**14.4**

(a) The premium is based on coefficients of the Supplier dummy in the following regressions:
$ln\ X_{it} = \alpha + \beta\ Supplier_{it} + \mu_j + \mu_t + \varepsilon_{it}$
where μ_j stands for two-digit industry and μ_t for year fixed effects.
(b) The premium is based on the following regression:
$ln\ X_{it} = \alpha + \beta\ Supplier_{it} + \delta\ ln\ Employment_{it} + \mu_j + \mu_t + \varepsilon_{it}$
n.s. denotes a coefficient not statistically significant at the conventional significance levels.
Source: Javorcik and Spatareanu (2009).