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**BACKGROUND PAPER FOR THE  
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## **Does FDI Bring Good Jobs to Host Countries?**

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## Introduction

One of the reasons why policy makers in developing and developed countries strive to attract foreign direct investment (FDI) is to create new jobs in their economies. But are jobs created by multinational enterprises good jobs? Some jobs do more for development than others, because of their greater contribution to poverty reduction and, perhaps more importantly, because of their knowledge externalities. If we accept this premise, then developing countries should focus not only on job creation but should also strive to create good jobs.

From the worker's perspective, a good job is a job leading to a higher standard of living, that is, a job that provides higher earnings and greater potential for growth in earnings and higher satisfaction. From the country's perspective, good jobs are jobs whose productivity is above the country's average, jobs with greater productive externalities, and jobs with potential for productivity growth. In what follows, we take these two perspectives to examine whether jobs created as a result of FDI inflows can be considered to be good jobs.

### 1. FDI jobs from the worker's perspective

#### 1.1. *FDI and wages*

A large number of empirical studies find that foreign affiliates pay higher wages relative to domestic firms in both developed and developing countries. The wage differential between domestically and foreign-owned firms ranges from about 10 to 70 percent depending on the country considered (see studies cited by Heyman, Sjöholm and Tingvall 2007).<sup>1</sup> Several explanations have been proposed for why this may be the case. Foreign firms may pay a wage premium in order to prevent labor turnover leading to knowledge spillovers benefitting their domestic competitors (Fosfuri, Motta, and Ronde 2001). Higher productivity and the resulting higher profitability of foreign affiliates may translate into higher wages because of rent-sharing arrangements between foreign firms and their employees (Budd, Konings, and Slaughter 2005). Higher wages paid by foreign affiliates may serve as compensation for a higher labor demand volatility in foreign plants (Fabri, Haskel, and Slaughter 2003) or for a higher foreign plant closure rate (Bernard and Sjöholm 2003). It is also possible that due to a lack of knowledge of the local labor market foreign firms may find it difficult to identify and attract good workers without paying a wage premium (Lipsev and Sjöholm 2004). Higher wages paid by foreign affiliates may also be a result of cherry picking, i.e., foreign companies acquiring domestic firms with above average human capital (Almeida 2007). Finally, higher wages may be a reflection of unobservable worker characteristics such as higher ability or greater motivation.

Examining the causal effect of foreign ownership on wages is quite challenging due to the demanding data requirements. Ideally, to establish the causal effect of foreign acquisitions on wages, one would like to trace the pay of individual workers continuously employed in firms which changed ownership and control for unobservable worker heterogeneity as well as firm heterogeneity.

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<sup>1</sup> The foreign wage premium goes down once firm characteristics, such as size, are controlled for (Harrison and Rodriguez-Clare 2010). However, a larger size of foreign affiliates may be a reflection of their superior productivity and thus a direct effect of their ownership status *per se* (see Arnold and Javorcik 2009).

The only study that is able to do so is by Heyman, Sjöholm and Tingvall (2007) who use detailed matched employer–employee for the second half of 1990s for Sweden. In their most demanding specification, they use propensity score matching to create a control group for the sample of Swedish firms that underwent foreign acquisitions. Then they employ the difference-in-difference estimator to examine whether wages of individual workers have changed as a result of foreign acquisitions. Most importantly, they are able to control for individual fixed effects. Since they restrict their sample to workers remaining in the same firm for the entire period of observation of the firm, they obtain within-individual and within-firm estimates. This means that they control for both time invariant individual- and firm-specific effects, thus accounting for a systematic sorting of individuals across firms. Once they do so, the small foreign ownership premium found in less demanding specifications becomes negative and equal to -2 percent.

In a related study, Almeida (2007) considers matched employer-employee data from Portugal from the 1990s. Unfortunately, due to the poor quality of worker identifiers she is unable to control for unobservable worker heterogeneity. However, she is able to keep the composition of the workforce fixed before and after the acquisition and examine the evolution of the average wage at the firm level. When she considers only manufacturing firms, she finds that following the foreign acquisition average wages increase by 2.2 percent for the low educated workers (with no more than 9 years of schooling) and by 4.3 percent for the highly educated workers (with more than 9 years of schooling). In both cases, these changes are expressed relative to the average wages paid by domestic firms in the same time period. Almeida hypothesizes that the difference in the wage adjustment between the two groups could be explained in the following way. If after the acquisition total rents increase and the high educated workers have greater bargaining power (due to the accumulation of firm specification skills) their wage adjustment could be higher. However, somewhat surprisingly there is no statistically significant wage adjustment following foreign acquisition when the sample includes services industries. No explanation is provided for why this may be the case.

It is difficult to generalize the results from these two studies. Moreover, the lack of (or weak) evidence of a positive foreign wage premium in industrialized countries does not mean that such premium does not exist in developing countries. In particular, if foreign wage premium is a result of higher productivity and hence a higher profitability of foreign affiliates, then one would expect that the productivity differential (and hence the wage differential) between foreign and domestic firms would be higher in developing than in industrialized countries. There is indeed evidence suggesting that foreign acquisitions lead to a sizeable and statistically significant productivity boost in Indonesia (Arnold and Javorcik 2009) while the evidence from the UK and Italy is quite mixed (see section 2.2).

The existing studies of foreign wage premium in Indonesia suggest that a foreign acquisition of an Indonesian manufacturing plant results in higher wages for the plant's employees (Sjöholm and Lipsey 2006, Arnold and Javorcik 2009) and that domestic acquisitions of foreign-owned plants do not result in corresponding wage gains (Sjöholm and Lipsey 2006). While the former study is able to distinguish between blue and white collar wages, neither study can control for individual characteristics. Taking into account detailed information about the worker's educational attainment (but not other characteristics) is possible only in a cross-sectional context. The analysis incorporating this information finds that foreign-owned firms pay a higher price for labor of a given educational level than domestically owned ones. Even taking into account

differences between foreign and domestic plant characteristics, such as size and use of inputs, wages in foreign-owned plants are found to be about 12 percent and 20 percent higher than in private domestic plants for blue- and white-collar workers, respectively (Lipsev and Sjöholm 2004).

The above mentioned studies focusing on Indonesia are unable to control for worker characteristics. This shortcoming has been addressed by Earle and Telegdy (2008) who rely on matched employer-employee data from Hungary (though they are unable to follow individual workers over time). Interestingly, in the course of their analysis they find that the estimated magnitudes of the foreign wage premium vary little with controls for observable worker and firm characteristics, and there is relatively little variation with the unit of observation (firm or worker). The magnitudes vary considerably depending on whether unobserved firm heterogeneity is taken into account. In their most demanding specification, which includes firm fixed effects and firm-specific trends in wages, they find a statistically significant foreign wage premium of about 7 percent relative to domestic private firms.

The results from Indonesia mentioned above, which show stronger effects for white collar workers, are suggestive of FDI increasing the skill premium. Consistent with this view, Lipsey and Sjöholm (2004) find that the returns to tertiary education are much larger in foreign-owned plants than in private domestic ones in Indonesia. A similar picture is painted by Feenstra and Hanson (1997) who study the impact of FDI using state-level data on 2-digit industries from the Mexican Industrial Census for the period 1975 to 1988. They measure the state-level growth in FDI using data on the regional activities of maquiladoras and find that growth in FDI is positively correlated with the relative demand for skilled labor. In the regions where FDI was most concentrated, growth in FDI can account for over 50 percent of the increase in the share of skilled labor in total wages that occurred during the late 1980s. This is consistent with the hypothesis that outsourcing by multinationals has been a significant factor in the increase in the relative demand for skilled labor in Mexico.

It has been postulated that as a result of knowledge brought by foreign investors to the host country, marginal productivity of workers in foreign affiliates should be higher than in domestic firms. If this productivity advantage is significant, equilibrium wages should rise in response to increases in FDI. In other words, an overall shift in the aggregate labor demand curve could lead to upward pressure on wages faced by both domestic and foreign firms. This would be a pecuniary spillover. Alternatively, there could be spillovers due to human capital accumulation. Entry of multinationals brings new knowledge which is then absorbed by domestic workers, increasing the domestic stock of human capital and making the local labor force permanently more productive. While there is evidence of wage spillovers from domestic to foreign firms in the United States, in Mexico and Venezuela FDI is associated with higher wages only in foreign affiliates. There is no evidence of wage spillovers leading to higher wages for domestic firms in these countries (Aitken, Harrison and Lipsey 1996).

## ***1.2. FDI and worker training***

From the worker's perspective, employment in a foreign affiliate may be more rewarding than employment in a local firm if the former offer more opportunities for training and professional development. The existing evidence supports this view. For instance, Filer et al. (1995) find that

foreign-owned firms in the Czech Republic spent 4.6 times more than domestic firms on hiring and training. A study focusing on Malaysia also shows that foreign-owned firms provide more training to their workers than domestic enterprises (World Bank 1997). Anecdotal evidence additionally suggests that foreign affiliates tend to have a more meritocratic culture which makes them more appealing employers in more traditional societies, such as Japan (The Economist 2011).

### ***1.3. FDI and job stability***

Workers tend to value stable jobs. Evidence for the United States and Indonesia suggests multinational firms are less likely to shut down than domestic firms. This pattern is due to their larger size and superior productivity relative to domestic firms. However, after accounting for the fact that multinationals are typically larger and more productive, they are more likely to shut down than domestic firms. These findings are based on the US figures from the late 1980s and the 1990s examined by Bernard and Jensen (2007) and Indonesian data covering the period 1975-1989 analyzed by Bernard and Sjöholm (2003). More recent data from Indonesia, spanning the period 1988-1996, indicate though that multinational firms are less likely to shut down than comparable domestic enterprises (Harrison and Scorse 2010). Harrison and Scorse attribute the difference between their findings and the results of Bernard and Sjöholm to the fact that prior to 1990 the number of foreign-owned enterprises in Indonesia was small and consequently a few plants could lead to large rates of entry and exit.

## **2. FDI jobs from the host country's perspective**

As mentioned earlier, from the country's perspective, good jobs are jobs with above average productivity, jobs with potential for productivity growth and jobs resulting in knowledge externalities. This section will present arguments for why jobs in foreign affiliates tend to meet these criteria.

### ***2.1. Multinationals as producers of knowledge***

Engaging in FDI is costly because of the need for setting up new productive facilities. Moreover, foreign affiliates are disadvantaged relative to indigenous competitors in the host country due to the lack of familiarity with the local rules and regulations and consumers' preferences. Therefore, only the most productive firms or, to use Dunning's (1988) term, firms possessing "ownership advantages" are able to successfully compete in foreign markets. According to Dunning, these ownership advantages can take the form of new technologies, know-how or management techniques and well-established brand names. These intangible assets, developed in headquarters, can easily be transferred to foreign subsidiaries and their productivity is independent of the number of facilities in which they are employed. The existence of ownership advantages is reconfirmed in the recent theory of heterogeneous firms, which suggests that only the most productive establishments can afford the extra cost of setting up production facilities in a foreign country and predicts that multinationals come from the upper part of the productivity distribution of firms in their country of origin (Helpman et al. 2004).

Consistent with the existence of ownership advantages, the data confirm that multinationals are heavily involved in creation of new knowledge through their engagement in research and development (R&D) activities. In 2002, 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. Given that there existed about 70,000 multinational corporations in the world at that time, this is a conservative estimate. In 2003, the gross domestic expenditure on R&D of 3.84 billion dollars by the eight new members of the EU<sup>2</sup> 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). More than 80 percent of global royalty payments for international transfers of technology in 1995 were made from foreign subsidiaries to their parent firms (UNCTAD 1997).

The prevailing view that R&D activities are undertaken only in headquarters of multinational corporations is no longer valid. According to UNCTAD's survey of the world's largest R&D investors conducted in 2004-5, the average respondent spent 28 percent of its 2003 R&D budget abroad, including in-house expenditure by foreign affiliates and extramural spending on R&D contracted to other countries (UNCTAD 2005). The shift of R&D activities abroad has been driven by the need to adapt products to the host country conditions and by cost saving.

All the above arguments suggest that FDI can serve as a channel of knowledge transfer across international borders.

## **2.2. Evidence on productivity advantage of foreign affiliates**

Establishing a causal relationship between foreign ownership and productivity of foreign affiliates is challenging because of the selection bias. The superior performance of foreign affiliates documented by many studies (e.g., Aitken and Harrison 1999, Javorcik 2004) may simply reflect cherry picking of best performing local producers as foreign acquisition targets rather than productivity advantages brought by foreign ownership *per se*.

The handful of studies which examine the causal relationship between foreign ownership and firm performance produce mixed results. Harris and Robinson (2003) use data from the UK and find that foreigners acquired best performing domestic firms and that foreign ownership does not lead in general to an improved performance of the acquisition targets. In contrast, Conyon et al. (2002) conclude that acquisitions have a positive effect on the labor productivity of the acquired firms in the UK. A similar conclusion is reached by Girma and Görg (2007) who study food and electronics sectors in the UK and Griffith (1999) who considers the British car industry.

The lack of consistent findings in studies focusing on industrialized countries mirrors the pattern found by studies of wage effects. It is not surprising given that the productivity gap between multinationals and their acquisition targets is probably not so large in the UK. One would expect the gap to be larger in the case of developing countries and thus one would anticipate larger productivity effects of foreign acquisitions.

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<sup>2</sup> 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.

The only study focusing on a developing country (Arnold and Javorcik 2009), based on Indonesian plant-level data from the Manufacturing Census covering the period 1983-2001, confirms that a change from domestic to foreign ownership leads to improved performance. The study combines propensity score matching (within industry-year cells) with a difference-in-differences approach. The results suggest an increase in plant productivity reaching about 13.5 percent in the third year under foreign ownership. These productivity improvements take place simultaneously with increases in investment in machinery and equipment, employment, wages and output, suggesting an on-going restructuring process. Plants receiving foreign investment also become more integrated into the global economy by exporting a larger share of their output and sourcing a larger share of their inputs from abroad (see Figure 1). These patterns are consistent with acquired plants receiving transfer of technologies embodied in machinery and equipment as well as in imported inputs.

Proprietary technologies constitute only part of multinationals' ownership advantages. Tacit knowledge, know-how, management techniques and marketing strategies may be equally important drivers of the success of multinationals. Transfer of these intangible assets can be very valuable to FDI recipients in developing countries. Arnold and Javorcik's research is suggestive of such transfer taking place. Their results show that foreign ownership does not 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, yet at the same time it leads to higher labor productivity (and total factor productivity).

Several explanations are consistent with the observed patterns. It is likely 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.<sup>3</sup> It is also possible that although foreign owners do not alter the skill composition of labor, they are able to attract more experienced and better motivated employees. They may also substitute expatriate staff for local managers and introduce pay scales linked to performance. This would be in line with the earlier observation that acquired plants hire a large number of new workers and increase the average wage. Finally, foreign owners may invest more in staff training, which is consistent with the evidence mentioned earlier. Another possibility is that the use of higher quality inputs or more suitable parts and components translates into higher productivity, which is consistent with the observed increase in the use of imported inputs in the aftermath of foreign acquisition.<sup>4</sup>

The productivity effects of foreign acquisitions are not limited to the manufacturing sector. A study by Arnold et al. (2011) finds that foreign acquisitions of Czech services providers resulted in large changes in the labor productivity and sales of the acquired firms. These findings are

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<sup>3</sup> A relevant example of organizational changes introduced by a foreign investor in its Chinese affiliate is presented in Sutton (2005) and cited by Arnold and Javorcik (2009). 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.

<sup>4</sup> A lower percentage of faulty inputs may translate into a lower share of final products that must be rejected at the quality control stage.

consistent with foreign services providers bringing new technologies and know-how to the Czech Republic and providing services with greater appeal to Czech consumers.

The findings of econometric studies are consistent with the conclusions of the case study literature. In a survey of case studies from around the world, Moran (2007) gives many examples of knowledge, know-how and technology transfer from parent companies to foreign affiliates. However, he also argues that in distorted environments, where host governments impose local content, joint venture or technology transfer requirements, foreign affiliates are less likely to receive such transfers.

In sum, the existing evidence is supportive of knowledge transfer taking place between headquarters and foreign affiliates at least in the context of developing countries, which in turn means that foreign affiliates have potential to become sources of knowledge externalities.

### **2.3. FDI externalities**

Conceptually, one can distinguish two types of externalities associated with FDI. The most important type from the host country's perspective are *knowledge spillovers*, which take place when knowledge created by a multinational enterprise is used by an indigenous firm and the indigenous firm does not (fully) compensate the multinational enterprise. Typically, it happens through the demonstration effect (indigenous firms obtain knowledge about new products, technologies, marketing and management strategies or business opportunities in foreign markets by observing actions of foreign affiliates), movement of labor (indigenous firms hire workers trained by multinationals) or through transfer of knowledge from foreign affiliates to their suppliers or customers (provided affiliates are not compensated for the transfer). The second type of externalities comprises *pecuniary externalities*, which take place through firm-to-firm interactions and occur through prices in a properly functioning market. For instance, if entry of foreign affiliates into downstream sectors creates an increased demand for inputs it may create incentives for indigenous firms to invest in product upgrading, cost saving technologies or increased capacity, all of which may lead to a better performance. Entry of foreign affiliates may also change the market structure and increase the level of competition in a manner similar, for instance, to trade liberalization leading to competitive externalities.

Surveys of Czech and Latvian entrepreneurs conducted in 2003 by the World Bank provide evidence suggestive of all the type of externalities mentioned above (Javorcik and Spatareanu 2005). As illustrated in Figure 2, 24 and 15 percent of indigenous producers, in the Czech Republic and Latvia respectively, reported learning about new technologies from foreign affiliates operating in their sector. About one-tenth of respondents obtained information about new marketing techniques in this way. These responses clearly illustrate the existence of the demonstration effect. Spillovers through movement of labor seem to be somewhat less important as only about 4 percent of respondents hired workers previously employed by foreign affiliates. The competitive externalities appear to be the most pronounced, as 48 and 41 percent of indigenous producers, in the Czech Republic and Latvia respectively, reported that foreign entry increased the level of competition in their industry, and 29 percent in both countries reported losing market share to the foreign entrants.

The Czech survey also provides evidence of pecuniary externalities stemming from contacts between local suppliers and their foreign affiliate customers. The prospect of receiving a contract from a multinational induced many local suppliers to undertake improvements. These improvements included purchases of new machinery and equipment, improvements to product quality, staff training, increasing production volume, reducing the share of defective units produced, and reorganizing manufacturing lines (Figure 3). Forty percent of Czech companies with ISO 9000 certification reported obtaining it in order to be able to supply multinational companies (Javorcik WBRO).

Econometric studies of *intra-industry* spillovers from FDI are usually unable to distinguish between the various spillover channels. A typical study relates the total factor productivity of indigenous firms to some proxies for FDI presence in the same industry. This means that the empirical results capture both knowledge spillovers and competitive externalities. As pointed out by Aitken and Harrison (1999), if the increase in competition leads to local firms losing part of their market share and spreading their fixed cost over a smaller market, a negative correlation may be found between FDI presence and the performance of indigenous firms in the short and medium run. In the long run, the weakest performers exit, which then reverses the sign of the correlation. Thus conclusions of the empirical studies of intra-industry spillovers from FDI depend on whether knowledge spillovers dominate competitive externalities or vice versa. This depends on the host country characteristics and the type of FDI it receives.

For instance, a study by Aitken and Harrison (1999), based on a panel of more than 4,000 Venezuelan plants between 1976 and 1989, finds that FDI inflows lead to negative spillover effects. The authors first show that increases in foreign equity participation are correlated with increases in total factor productivity in recipient plants with fewer than 50 employees but not in other plants. Then they find that increases in FDI presence negatively affect the total factor productivity of domestic firms in the same industry. Their interpretation of the latter finding is that the expansion of foreign affiliates reduces the market share of local producers, forcing them to spread their fixed cost over a smaller volume of production, which results in a lower observed total factor productivity.

The patterns observed by Aitken and Harrison can be explained by the host country conditions. As pointed out by Moran (2007), their finding that only some plants benefit directly from an increase in foreign ownership suggests that FDI in Venezuela presented limited potential for productivity spillovers. Moran argues that this situation was due to heavy restrictions imposed by the government on foreign investors, which included strict joint venture and local content requirements. Further, foreign investors were forbidden from exercising confidentiality and exclusive use of trade secrets in their mandatory joint ventures, which lowered their incentives for technology transfer. 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. This can explain why FDI inflows could have had a large negative effect on market shares of indigenous producers.

The findings of Aitken and Harrison contrast sharply with the results obtained by Haskel, Pereira and Slaughter (2007) who find evidence consistent with positive intra-industry FDI spillovers in the UK. Using a plant-level panel covering the manufacturing sector from 1973 through 1992, they find that a 10 percentage-point increase in foreign presence in a UK industry raised the total

factor productivity of that industry's domestic plants by about 0.5 percent. They also show that spillover effects were larger for lesser performing plants.

In contrast to Venezuela, foreign affiliates operating in Britain exhibited higher value added per worker relative to indigenous firms in the same industry. They were also responsible for a large share of R&D effort undertaken in the UK (Griffith, Redding and Simpson 2004). This suggests that foreign affiliates in Britain had the potential to become a source of knowledge spillovers. The sophistication of the British firms and the openness of the country to international trade also suggest that the competition externalities were unlikely to be large in the UK. The observation that lesser performers benefited more from spillovers is also consistent with the sophistication of the British manufacturing sector and thus the limited room for learning.

The inability of the empirical literature to distinguish between knowledge spillovers and competitive externalities explains why the surveys of the literature on intra-industry spillovers conclude that the existing results are mixed (Gorg and Strobl 2001, Saggi 2001 Gorg and Greenaway 2004, Smeets 2008). Some progress has been, however, made on this front. A novel and interesting approach to examining intra-industry spillovers is taken by Kee (2010) who is able to identify business relationships between Malaysian garment producers and their suppliers of intermediate inputs. Her results are consistent Malaysian firms becoming more productive as a result of sharing suppliers with foreign affiliates.

There also exist three studies which explicitly focus on spillovers taking place through movement of labor. Görg and Strobl (2005) employ Ghanaian data on whether or not the owner of a domestic firm has previous experience working for a foreign affiliate, and relate this information to firm-level productivity. Their results suggest that firms which are run by owners who worked for multinationals in the same industry immediately prior to opening their own firm are more productive than other domestic firms. Balsvik (2011) documents extensive labor mobility flows from multinationals to non-multinationals in Norwegian manufacturing during the 1990s. During this period 14,400 workers moved from multinationals to non-multinationals. By the year 2000, 28 percent of workers employed in non-multinationals had previously been employed in multinationals. Balsvik shows a robust and significant positive correlation between the share of workers with multinational experience and the productivity of non-multinationals. This finding is consistent with spillovers through labor mobility. Workers with multinational experience contribute 20 percent more to the productivity of their plant than workers without such experience, even after controlling for differences in unobservable worker characteristics. The difference between the private returns to mobility and the productivity effect at the plant level suggests that this type of labor mobility represents a knowledge externality. The same issue is examined by Poole (forthcoming) in a somewhat different manner. Poole also uses matched employer-employee data but she focuses on Brazil and studies wage spillovers. She estimates wage equations for incumbent workers in domestic firms and finds that their wages are positively affected by the share of workers with prior work experience from multinationals.

Another set of studies examines knowledge spillovers from FDI pertaining of export markets. Based on panel data on 2,104 Mexican manufacturing plants from the period 1986-1990, Aitken, Hanson and Harrison (1997) demonstrate that the presence of exporting multinationals in the same region reduces the costs of exporting for Mexican firms. No such externalities are found for exporting firms in general. Using detailed Chinese trade statistics identifying the type of

exporters and their location, Chen and Swenson (2008) find that the presence of foreign affiliates in the same sector is associated with more and higher unit value trade transactions by Chinese firms. Using the same data set, Swenson (2007) shows that the positive association between the presence of foreign affiliates and new export connections by private Chinese exporters may be driven by information spillovers.

The conclusions of the literature on *inter-industry* effects are much more clear cut. Using firm-level panel data from Lithuania covering the period from 1996 to 2000, Javorcik (2004) finds evidence suggesting that FDI presence boost the productivity of the supplying industries but not the industries in which foreign affiliates operate. She argues that while multinationals have an incentive to prevent knowledge from leaking to their local competitors they may have an incentive to provide assistance to their local suppliers in upstream sectors. A one-standard-deviation increase in foreign presence in the sourcing sectors is associated with a 15 percent rise in productivity of Lithuanian firms in the supplying industry. The productivity effect is found to originate from investments with joint foreign and domestic ownership but not from fully-owned foreign affiliates, which is consistent with the evidence of a larger amount of local sourcing undertaken by jointly owned projects. The conclusion with respect to spillovers from fully-versus partially-owned foreign affiliates is further confirmed by Javorcik and Spatareanu (2008) in the context of Romania. Evidence of positive spillovers through backward linkages is also found in Indonesia by Blalock and Gertler (2008) and in China by Liu (2008) and Du, Harrison and Jefferson (2011).<sup>5</sup> Typically, the studies of *inter-industry* spillovers from FDI do not distinguish between the pecuniary spillovers and knowledge spillovers. An exception is Javorcik (2004) who made some progress towards this goal by controlling for the demand from foreign affiliates based in downstream sectors.

Almost all studies of *inter-industry* effects rely on industry-specific measures of foreign presences in downstream sectors. There are, however, two studies which explicitly identify suppliers of multinationals operating in their country and thus test *directly* whether suppliers are more productive than non-suppliers. Chung, Mitchell and Yeung (2003) examine this question in the context of American automotive component industry in the 1980s. They find that Japanese FDI into automotive assembly was associated with overall productivity improvements in the US auto component industry. Somewhat surprisingly, their results indicate that Japanese assemblers tended to purchase components from *less productive* US suppliers and that the productivity growth of US suppliers affiliated with Japanese assemblers was not greater than that of other non-affiliated US suppliers. Javorcik and Spatareanu (2009a) use data from the Czech Republic to make an explicit distinction between *self-selection* (i.e., the possibility that more productive firms become suppliers to foreign affiliates) and the *learning* effect (i.e., the productivity benefits accruing to suppliers from their interactions with affiliates). They find evidence consistent with both high productivity firms having a higher probability of supplying affiliates as well as suppliers learning from their relationships with affiliates.

The studies mentioned so far focus primarily on manufacturing sectors, yet FDI inflows into the retail sector can also generate knowledge externalities and pecuniary spillovers. A case study by Javorcik, Keller, and Tybout (2008) finds that the entry of Wal-Mart into Mexico facilitated the modernization of the retail sector and stimulated fundamental changes in the relationship

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<sup>5</sup> For additional studies see the literature review by Greenaway and Gorg (2004) and Smeets (2008).

between retailers and suppliers of soaps, detergents, and surfactants. The entry of Wal-Mart pushed high-cost suppliers out of business, benefited surviving producers by providing access to a larger market and prompted suppliers to introduce more innovations. Survey evidence from Romania confirms that firms supplying foreign supermarket chains were more likely to innovate, diversify their production and improve the quality of packaging than firms not serving foreign retailers (see Figure 4). An econometric analysis based on Romanian firm-level data also finds that the expansion of global retail chains leads to a significant increase in the total factor productivity in the supplying industries. Their presence in a region increases the total factor productivity of firms in the supplying industries by 3.8 to 4.7 percent, while doubling the number of chains leads to an increase of 3.3 to 3.7 percent. The expansion of global retail chains benefits larger firms more than small enterprises (Javorcik and Li 2009).

### 3. Conclusions and policy implications

The evidence reviewed in this study is consistent with the view that jobs created by FDI are good jobs, both from the worker's and the country's perspective. From the worker's perspective, it is because such jobs are likely to pay higher wages than jobs in indigenous firms, at least in developing countries, and because foreign employers tend to offer more training than local firms. From the country's perspective, jobs in foreign affiliates are good jobs because FDI inflows tend to increase the aggregate productivity of the host country. It happens through: entry of foreign affiliates with superior productivity (which extends the right-hand side tail of the productivity distribution), exit of the least productive domestic firms due to competition externalities (truncation of the left-hand side tail of the distribution) and (partial) rightward shift of the productivity distribution as a result of knowledge spillovers. The latter effect is mostly driven by the spillovers resulting from contacts between multinationals and their local suppliers.

Existence of positive externalities associated with FDI may suggest that a government intervention aimed at increasing FDI inflows may be warranted. But how much should governments be willing to spend to attract foreign investors? The only study that provides explicit guidance on this point is the paper by Haskel et al. (2007) reviewed earlier. This study finds that presence of foreign affiliates is positively correlated with the productivity of indigenous firms in the same industry. The authors calculate that an extra job in a foreign affiliate leads to an annual output boost to all British plants in the same industry equal to £2,440 in 2000 prices. This implies that the maximum amount of subsidy should not exceed the discounted value of spillovers summed over all the years a foreign affiliate is going to operate. Thus, for instance, with a 5 percent discount year, a foreign affiliate operating for 10 years will produce benefits equal to £18,841 per job. In reality, however, it is difficult to ensure that a foreign affiliate awarded FDI incentives will remain in operation for a sufficient number of years to warrant the subsidy. On the positive note, the study focuses only on *intra-industry* spillovers thus ignoring *inter-industry* spillovers which may be larger in magnitude.

A less costly course of action may be to engage in investment promotion activities, other than FDI subsidies. The main purpose of investment promotion is to reduce the costs of FDI by providing information on business conditions and opportunities in the host economy and by helping foreign investors deal with bureaucratic procedures. Investment promotion activities

encompass: advertising, investment seminars, participation in trade shows, direct marketing efforts, facilitating visits of prospective investors, matching prospective investors with local partners, helping obtain permits and approvals, preparing project proposals, conducting feasibility studies and servicing investors whose projects have already become operational. Because obtaining information on investment opportunities in developing countries tends to be more difficult than gathering data on industrialized economies, investment promotion should be particularly effective in a developing country context.

The existing evidence from Harding and Javorcik (2011) suggests that investment promotion is a cost efficient way of attracting FDI to developing countries. Based on newly collected data investment promotion efforts in 124 countries and figures on inflows of US FDI, Harding and Javorcik find that sectors designated as priority for investment promotion purposes receive more than twice as much FDI as non-priority sectors. Although the magnitude of the effect may seem large, it is not implausible. If one considers only positive flows of US FDI to developing countries, the median sector-level flow was equal to US\$ 11 million in 2004. Therefore, the estimated effect of investment promotion translates into an additional annual inflow of US\$ 17 million for the median sector-country combination. As for the costs of investment promotion, on average an investment promotion agency spent 90,000 dollars per sector targeted in 2004. Hence a dollar spent on investment promotion corresponds to 189 dollars of FDI inflows. Alternatively, the results indicate that priority sectors experience a 68 percent increase in affiliate employment when compared to non-targeted sectors. This implies additional 1,159 jobs for the average sector or 78 dollars per job created.

These back-of-the-envelope cost-benefit calculations should be treated with caution. On the one hand, Harding and Javorcik's analysis considers only flows of FDI from the US. As investment promotion is likely to have a similar impact on investors from other source countries, their analysis underestimates the benefits of investment promotion activities. On the other hand, there may be other factors which contribute to the success of investment promotion and whose costs they are not accounting for (for instance, access to accelerated bureaucratic procedures for targeted sectors). Finally, the analysis captures the average, not the marginal, effect. In other words, it is not suggesting that a large increase in investment promotion spending in countries already engaged in such practice will lead to huge increases in FDI inflows. Instead, the authors interpret their results as suggesting that countries not involved in investment promotion may benefit from such activities.

Harding and Javorcik also find that investment promotion appears to be particularly effective in countries where obtaining information is more difficult and countries with more cumbersome bureaucratic procedures. These results indicate that provision of information about the host country as well as assistance with the red tape are the key aspects of investment promotion. There is no evidence that offering fiscal or financial incentive is effective in attracting FDI.

Of course, it is not enough to set up an investment promotion agency and expect a huge boom in FDI inflows. Successful investment promotion requires professionalism, effort and commitment to customer service. It requires maintaining an up-to-date, attractive and user-friendly Web site which includes relevant and useful information that an investor requires during the site selection process. Providing the necessary data to support this decision process can make a difference. As shown by Harding and Javorcik (2012), higher quality of investment promotion agencies

translates into higher FDI inflows. In the past decade, a country with the an agency awarded the quality score of 60 percent (on a 0-100 percent scale, as assessed by the Global Investment Promotion Benchmarking initiative of the World Bank Group) received on average 25 percent higher FDI inflows than a country whose agency obtained the score of 45 percent (controlling for the country-specific characteristics).

Once FDI enters the country, governments may wish to maximize the productivity benefits associated with FDI by assisting local firms with becoming suppliers to foreign affiliates. Econometric evidence from the Czech Republic suggests that less credit constrained firms are more likely to become suppliers to foreign affiliates (Javorcik and Spatareanu 2009b). This is consistent with the survey evidence from the same country indicating that foreign firms often require their prospective suppliers to make improvements prior to signing a contract (Javorcik 2008). It is also in line with the cross country evidence suggesting that FDI stimulates economic growth in host countries with well developed financial markets (Alfaro et al. 2007). Thus authorities may wish to consider extending subsidized credit to prospective suppliers of foreign affiliates. Another possible policy intervention involves setting up supplier development programs will bring together local firm and foreign affiliates and help local firms meet expectations of foreign customers.

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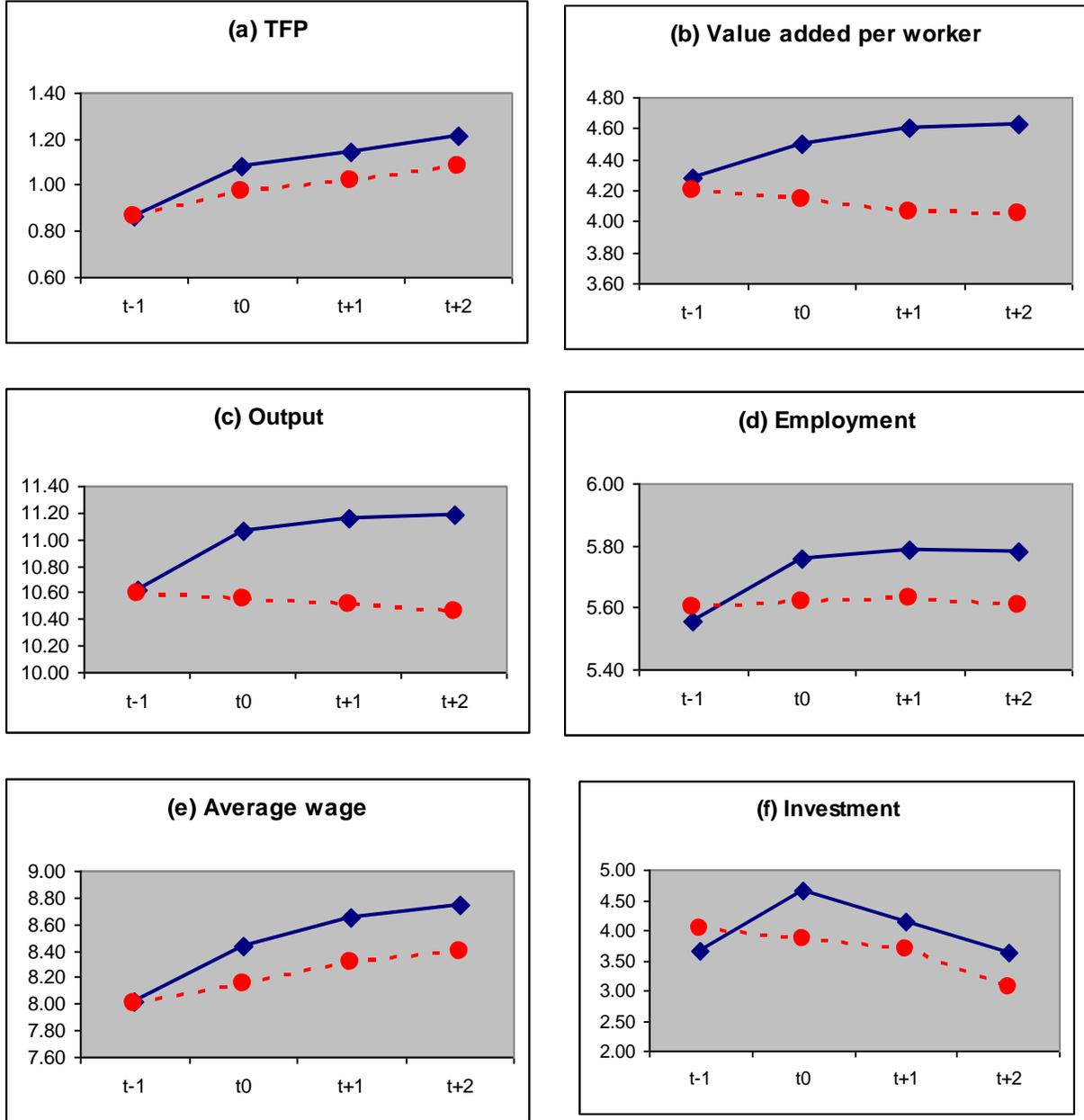
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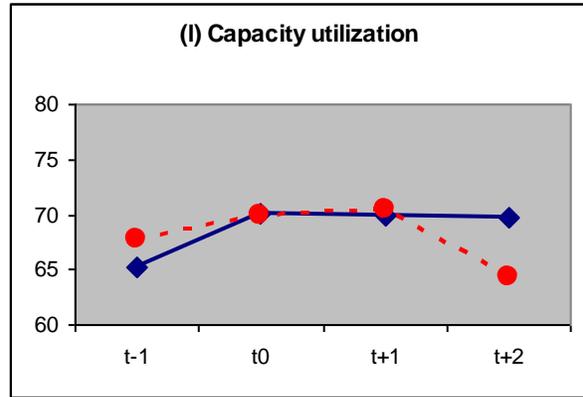
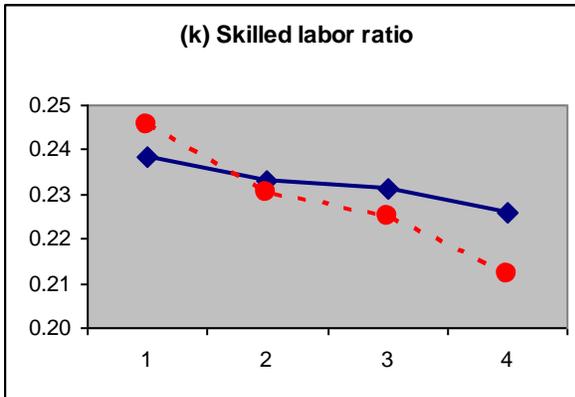
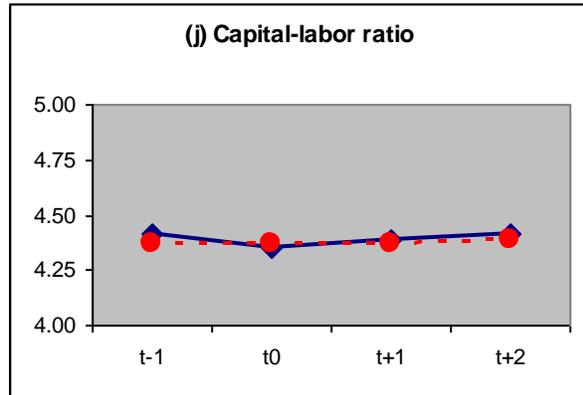
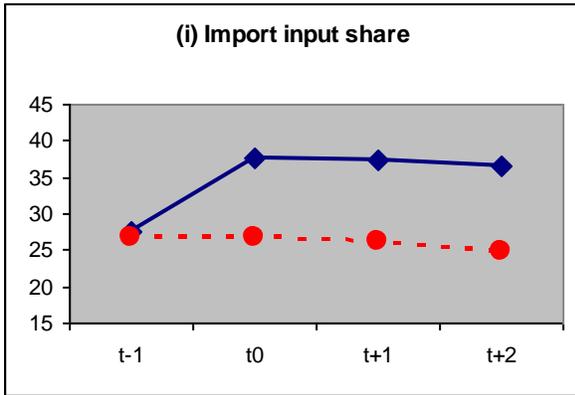
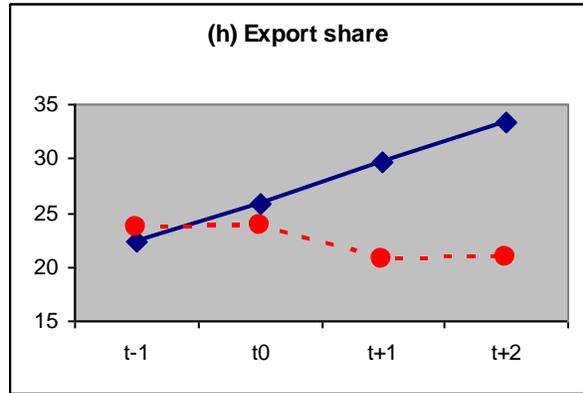
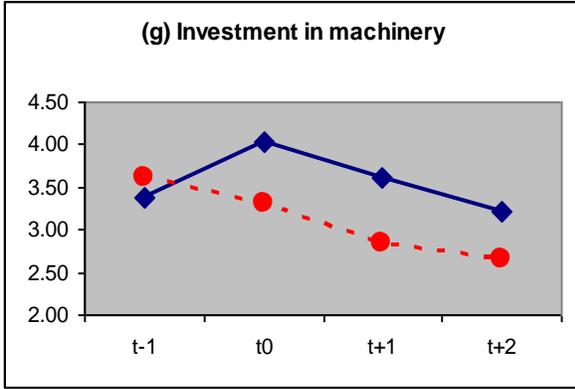
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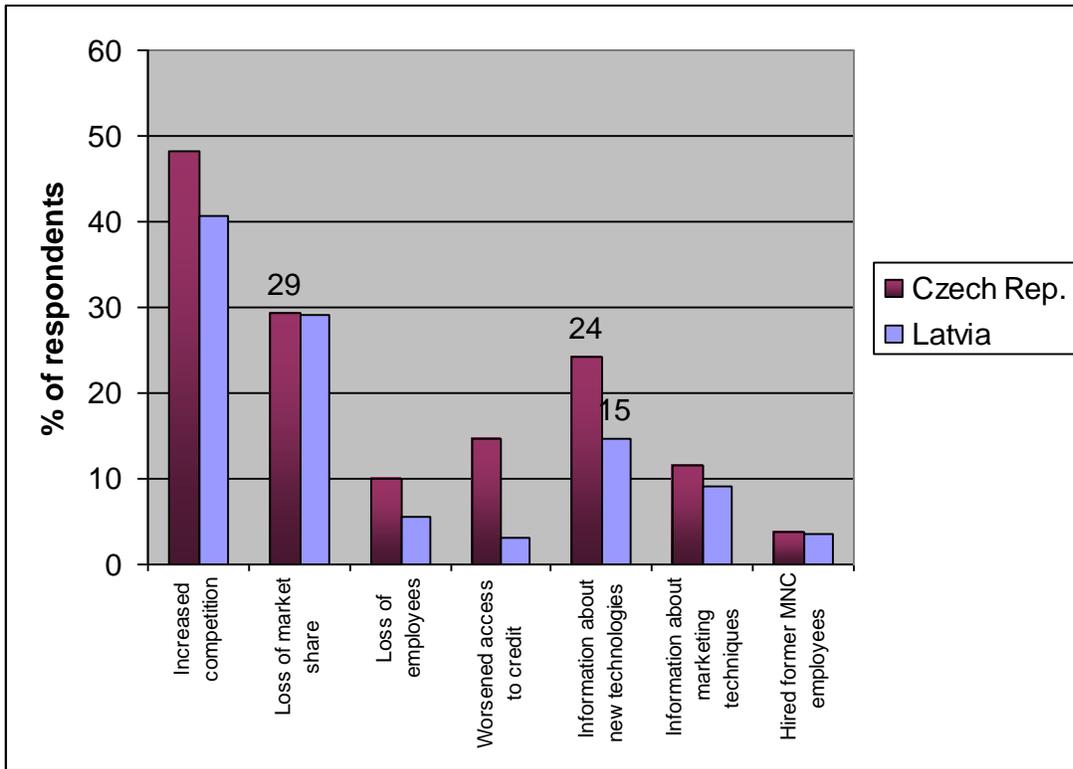
Figure 1. Comparing performance of acquired and control plants over time





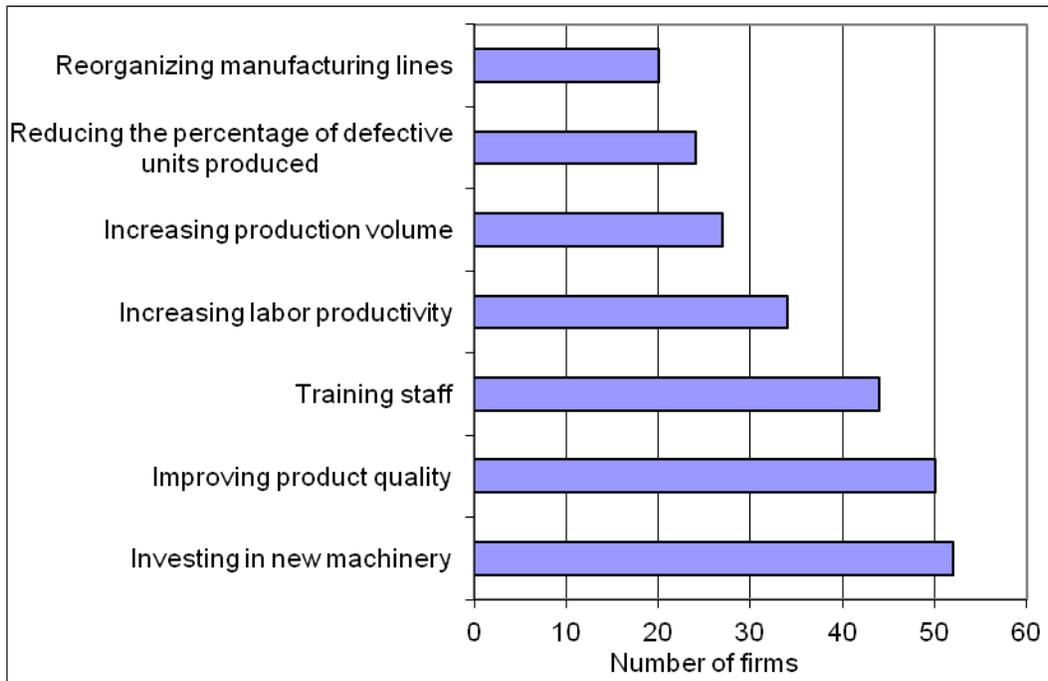
Notes: The solid line denotes the treated group (acquired plants). The dashed line represents the control group.

Figure 2. Perceived effects of FDI inflows into the same industry



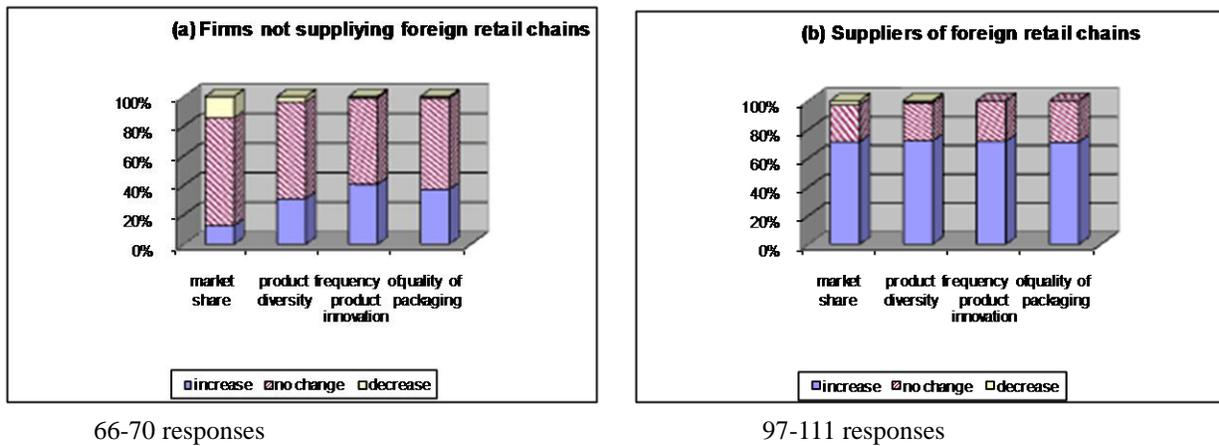
Source: Javorcik and Spatareanu (2005).

**Figure 3. Improvements undertaken by Czech firms in order to supply foreign affiliates**



Source: Javorcik (2008).

**Figure 4. Impact of entry of foreign retailers on Romanian firms**



Source: Javorcik and Li (2009).