

The Impact of Foreign Direct Investments on Labour Productivity: A Critical Examination of Results

Raluca Georgiana Popescu¹

The paper presents several results concerning the impact of foreign direct investments on labour productivity in different countries. The focus is on the labour productivity differences that exist between the foreign and domestic companies and on the way these differences evolve in the host country. Results show that national companies generally increase their labour productivity due to the technological and managerial competences that they borrow from the foreign companies established in their country and also because: firstly they have to protect themselves from the new competition and secondly they must comply with the growing demand coming from the new investors. Due to their higher labour productivity, foreign firms offer higher wages to their employees. This also determines a growth in the salaries of national companies' skilled workers going to wage inequalities and skill differences. However, the overall effect of a growing productivity is most often translated into job creation.

Key words: *foreign investments, labour productivity, spillovers, technology gap, employment, wages.*

JEL Classification: *F16, F21, F23, J24, O24.*

¹ **Raluca Georgiana POPESCU**, Ph.D. Candidate, The Academy of Economic Studies, Bucharest, Romania, raluca_1st@yahoo.com

1. Introduction

The impact of inward foreign direct investment has been widely studied. Being such an important issue for the recipient country, the most common question raised was whether foreign investment brings costs or benefits to the economic environment of the host country? The main perspectives, from which the problem is analyzed, are: economic growth (and whether it is sustainable or not) and social implications.

The main argument to sustain foreign investment consists in the positive spillovers to local firms as well as increases in production, employment and income. To attain these benefits, governments take several liberalization decisions for attracting foreign investments: eliminating certain requirements, in terms of performance, for foreign investors who supply the local firms, eliminating the obligation to export a certain amount of what they produce inside the host country and giving up the exclusion of certain sectors from FDI. In this respect, there were created bilateral and multilateral investment treaties around the world and was given the mutual possibility for the multinational companies to sue host governments in international tribunals if differences should appear.

The evidence that we have regarding the benefits of foreign investment for the host country shows that, in order to achieve sustainable development, countries must do more than simply attracting foreign investments. This happens when the positive spillovers do not occur due to different reasons that should be studied for each particular country. So it is not necessarily the fault of the foreign investors who do come in the host country with better technology and higher productivity and employ people on higher wages. As Zepeda, Schalatek and Gallagher (2008) point, to create favourable background for sustainable development to be achieved through FDI, there should be a tight relationship between the macroeconomic policy of the host country and its FDI policy. The focus should be on sustaining the evolution of the capabilities of the

domestic firms and, in the same time, ensuring environmental protection.

In the absence of such policy, most often, foreign direct investments bring serious disadvantages to the host country's labor market. Among these, perhaps the most criticized, is the rising wage inequality. Due to the superior technological assets that foreign companies bring along, the newly employed people will be among the most qualified, raising the unemployment among the unskilled population. Because the domestic companies acquire new technologies from the foreign companies in their country, they will also need to employ more qualified personnel. This will further contribute to the wage differences and the future development of the abilities of the employees in both types of companies. On the other hand, the good effects translate in terms of higher labour productivity, which is actually a very important advantage that can be achieved through FDI (Conyon, 1999; Girma, 1999). In the case of developed countries, the negative effect of globalization is that it determines a decrease in the demand for unskilled labor because of the foreign competition (Driffield and Taylor, 2000).

The presented and compared studies were chosen for this paper for several reasons:

- They treat a variety of aspects of the impact of FDI on labour productivity, which makes the analysis more comprehensive;
- They are empirical studies and they are numerous enough to offer a complete picture of the reality;
- Their results show both the positive and the negative impacts of FDI on labour productivity;
- Their impact is analyzed in several countries, which are more or less economically developed;

- Some of the studies confirm and some of them disprove the theory.

The remainder of the paper is organized as follows: in the second section there are presented several types of impacts of FDI on labour market, including labour productivity, and the third section is a presentation of the results of different studies regarding the impacts from different countries on labour productivity, in particular. The final section consists in conclusions.

2. The Impact of Foreign Direct Investments on Labor Market

Foreign direct investment is usually sought by countries that are going through the transition period and/or those that face severe structural unemployment. There are countries that rely entirely upon FDI when it comes to solving their unemployment issues. In such cases, greenfield investments or the acquisition of local unprofitable or bankrupted state owned companies are the most appropriate because they would hire people that do not have other working opportunities in the area and for which professional reconversion would be very difficult. The main advantage of FDI, as from the impact on the labour market perspective, would be job creation and uniform regional development. In studies that evaluate the UK situation, authors found several types of benefits of inward FDI: a decrease in unemployment and regional development (Young, 1988, 1994), a more efficient allocation of resources (because foreign companies have go abroad have usually more efficient production) and an adjustment of the trade balance through capital inflow (on the short term) and through the exports (on the long term) (Duning, 1988).

Developed countries also have interests to receive FDI. Their priority consists in the technological advantages that they can transfer from the foreign companies to the domestic ones and establishing multilateral partnerships that allow them to export FDI as well. Several business relations are created between foreign and national

firms and a continuous learning process is developed. For the local producers, it seems to be an easy and cheap way to adopt new competences and to increase productivity (Hood, 1999).

Studying the effects of inward FDI in the manufacturing sector in the UK, Driffield and Taylor (2000) find that due to the long learning process, these effects take action only after two years, while Djankov and Hoekman (1999) identified, in the case of the Czech Republic, no positive impacts on productivity over a four years lag.

The labor market impact, as defined by Driffield and Taylor (2000), is the wage share (the ratio of the skilled people's wages in the total wages of the people employed in the UK) considering the FDI in two ways: the share of total UK manufacturing labour force employed by foreign multinationals and by the share of net capital expenditure accounted for by foreign firms in the UK. The two types of impact are analyzed at the present moment t , at $t-1$ and at $t-2$. The results show that in both cases the influence is mostly significant at two lags, which means that skilled labour becomes better paid after two years because of the increased labour productivity that is derived from the assimilation of foreign technology.

Bound, Griliches (1994) tried to assess, comprising a quantitative and a qualitative analysis, the effects of FDI on wage shares and the proportion between skilled and unskilled employment. Although, in the case of US manufacturing sector, a strong correlation was observed between research and development and computer investments on one hand and skill upgrading on the other hand, the conclusions of the study showed that skill upgrading is not determined by trade and FDI. These conclusions surprised the authors as well because manufacturing was the sector that faced the most skill upgrading and where trade and foreign outsourcing was the most developed.

3. FDI Impact on Labour Productivity

According to the economic theory, foreign direct investments should increase labour productivity of the domestic companies. This is also one of the desiderates that governments try to achieve when they create the policies aimed at attracting FDI because it creates sustainable development of the country, not only short term advantages. In the current chapter, several empirical studies regarding this matter are presented. Some of them come to confirm the theory and others don't.

The increase in the labour productivity should occur, according to the theory, if the foreign companies have better productivity themselves and if they are able to transfer it to the local companies under the condition that local companies also have the ability to assimilate these spillovers. The absorption capacity, as many authors point, depends on the initial situation of the host country: the development stage of the economy and the trade regime (Lipsey, Sjöholm, 2004), a minimum level of technological capacity and expertise of the workers from the host country and a sustained effort from the side of the government and of the private sector to assimilate the foreign technology (Djankov, Hoekman, 1999). If the host country does not fulfill minimum conditions to open its economy to FDI, the effects will be notably negative. Inefficient local firms will not be able to face competition and will be forced out of the industry.

The literature written in this domain is very vast but most of it can be found over the case of developed countries with a focus on the United Kingdom and the United States.

3.1. Positive vs. negative impact

Aitken and Harrison (1999) found that foreign direct investments have two different types of impacts over the increase in productivity, that take place in the same time. One is the positive effect that is a result of the technology transfer and the spillovers and the other one is the

negative 'competitive effect' that seems to be determined by increasing competition coming from the foreign companies. Because the total production of the local firms is reduced, as they have to split the market with the newly entrants, scale economies are more difficult to be achieved decreasing productivity by these means.

The positive influence on the productivity of local firms was proved to be the result of inward foreign direct investment in studies for several countries like: USA (Lichtenberg and Siegel, 1987), The Czech Republic (Djankov, Hoekman, 1999), Indonesia (Anderson, 2000), Italy (Piscitello, Rabbiosi, 2005), China (Liu, Zhao, 2006) etc.

On the other hand, De Mello (1999) identified a negative impact of inward FDI on the growth of productivity of the overall sample consisted in 32 countries (17 of them non-OECD countries and 15 OECD). The non-OECD countries register a negative impact on the total factor of productivity that is higher than the positive impact obtained for the OECD countries. That is why the average is also negative. The result for the non-OECD countries can be explained through a higher degree of protectionism, because the recipient countries are less efficient in embodying the new technologies, or maybe the new technologies are not so far advanced from the old ones. In addition, FDI fosters producer capital accumulation. In order for the positive spillovers to occur, according to the above mentioned author, the foreign and the domestic investments should be complementary and can be substituted.

Golejewska (2009) studied the impact of foreign direct investment firms on labour productivity of local firms in Poland. Using a regression with the dependent variable the labour productivity and the independent variables the output, the capital/labour ratio, FDI and technology, the author tests two hypotheses:

- The bigger the productivity spillovers, the bigger the share of foreign companies in total production;

- As the technological gap between the foreign and domestic increases, the more intensive the technology spillovers.

The results of the study show that on the whole manufacturing sector in Poland, spillovers do not occur, but there are significant contagion effects either positive, either negative in different industries taken separately.

In the Czech Republic, Djankov, Hoekman (1999) obtained different types of impacts. The biggest benefits from foreign investments take FDI companies (resulted from acquisitions) and then the joint ventures. Domestic companies, which do not have foreign participation but activate in the same industry with such firms, suffer significant costs. The reason is obviously the impossibility of facing competition, incapacity of adjustment to the same technology that foreign companies use, the constraint of reducing the activity in order to survive, which all in all determines lower labour productivity. When governments support, through important costs, FDI hoping to achieve development, local businesses, which are usually unsupported (in order not to disturb fair competition), lose important playground. Open economies permit only to the best to survive, but if this is done too early, the survivors will mostly be from other countries.

Another cause of the contradictory impacts of FDI was identified by Mukherjee (2007). On the basis of a Leontief production function, he calculated the maximum equilibrium output and the maximum profit that the foreign companies can obtain under two different motivations that lead to the foreign implantation: the search for cheaper labour force and the goal of saving trade costs (transportation). Under the second type of implantation, the countries welfare is increased due to productivity spillovers, while under the first one, no positive advantages appear.

Barrel and Pain (1997) and Hubert and Pain (2000) strike out the fact that productivity is not improved in the host country because the foreign companies hire only expats in the key positions, which are

highly technical, and the domestic employment is used only on positions that do not require such a high degree of qualification. Therefore the locals do not have access to the know-how that foreign companies bring along.

Figini and Görg (1999) estimated the impact of multinational enterprises on the wage inequality in the host country. The results proved that the wage gap is increased as the FDI increase because of two factors that occur simultaneously: the increase in labour productivity of the local workers, as an effect of the technology spillovers, and rising demand for skilled labour.

Blomström and Persson (1983) obtained relevant results while studying the influence on domestic labour productivity, using data at industry level. Foreign investments, calculated as the foreign employment share in the total industry employment, influence the domestic market's labour productivity positively. According to Djankov, Hoekman (1999), it is a key element the access permission to the core activities of the company to the local employees. The foreign firm has some specific advantages on the local market related to its production organization and to its distribution networks. The workers from the host country can benefit from this specific information that they can find only from inside the company and they can spill the knowledge they achieve to domestic companies when they change their workplace.

Separating the effect of FDI, that productivity has on skilled employment from the domestic firms, Driffield and Taylor (2000) identify a function of the size of productivity advantage that explains the afore mentioned effect. The purpose is to demonstrate the assertion that the ratio between the productivity of foreign firms on the productivity of the domestic ones (at industry level) is what makes the difference in the impact that FDI has from one industry to another. The ratio represents the relative productivity and is split in three intervals: high > 1.2 , medium $e (1, 1.2)$ and low < 1 . The ratio is

noted by “A” and it determines maximum spillovers when it equals 1.2, as it was empirically established using panel data of UK manufacturing industry between 1982 and 1993. The maximum level of FDI impact is achieved at similar levels of foreign and domestic firms’ productivity.

3.2 The causes of result differences

Noticing the many and contradictory studies regarding the subject, Lipsey, Sjöholm (2004) deduced that the opposite results, which were obtained for the same studied matter, were due to the different techniques that were used. In order to identify why these differences appear, they took the case of Indonesia, comparing studies that used mainly the same panel of data, at firm level, and that should have obtained similar results. The main differences observed consist in:

- the construction of the FDI variable (as the foreign share of employment, share of value added or output share, taken at different sectors level, at national or regional level),
- the measure of technology gap (as the difference in labour productivity between foreign owned firms and domestic companies or as the level of investments/worker between foreign and domestic companies) that influences the spillovers,
- the industry that we refer to (its capacity to transmit spillovers to other industries: for instance IT industry has a high capacity, while the food industry doesn’t).

In what the differences between countries is concerned, the absorptive capacity of technology seems to be a cause of the result differences between the findings of the research. The more the employment is highly skilled, the more the positive spillovers occur. Moreover, it is a clear fact that spillovers occur more often among companies located in the same area (that have small spatial distances between each other). Consequently, the problem appears when we chose the data series.

Available data is usually grouped by administrative divided regions, which has little to do with the real spread of the spillovers across companies from the same or different industries.

3.3 Types of foreign cooperation and labour productivity

One of the aspects that the economists thought that should be clarified was whether the type of FDI influences differently the labour productivity. Usually governments sustain mainly greenfield investments considering that investments that occur through mergers and acquisitions do not bring additional productive capacity.

Studying the case of Italian manufacturing industry, between 1994 and 1997, Piscitello and Rabbiosi (2005) found that labour productivity is increased on the medium term due to inward FDI that is established through mergers and acquisitions. There are analysed a set of companies that have been taken over by other companies in the specified period through a Cobb-Douglas function. The function suffers a logarithmic transformation and is differentiated with respect to time over a 2 year period in order to see a comparison before (t) and after ($t+1$ and $t+2$) acquisition. The endogenous variables are: the percentage change in the physical capital and material intensity, while the exogenous variable is the percentage change in the labour productivity of the domestic company calculated as the value added per worker. The factor of influence on the labour productivity change is introduced in a dummy variable that first takes the values: FOREIGN/DOMESTIC (referring to the type of acquisition) and then MNE/non MNE (the local company is bought by a multinational company or not with no respect to its country of origin - it can be either Italian or foreign). The result of the OLS regression show that the labour productivity is increased after the foreign acquisition (p value < 0.10), while the companies that suffered acquisition from other domestic companies have not significantly improved their labour productivity. On the other hand, the acquisition by a multinational

seems to have an important effect. The coefficient of MNE is positive and significant at p value < 0.05 , while the labour productivity of companies bought by others but multinationals did not face significant changes. All in all, the belonging to a multinational enterprise explains more accurately the productivity gap than the foreign ownership does. Pfaffermayr and Bellak (2000) explain that such a result is due to the advantages of multinationals: network economies, easier access to international markets through trade between subsidiaries and the subsidiaries and other companies from their host countries, the transfer of different advantages from one subsidiary to another.

Piscitello and Rabbiosi (2005) continue the research over the Italian case and find that the origin of the foreign acquirers is also decisive to the change of labour productivity. Therefore when the acquiring company comes from the European Union, the increase in labour productivity is higher than in the case of US multinationals (the impact of distance). In what the cultural distance is concerned, the results showed relevant differences of the influence of this factor: the positive productivity change of companies originated in the European space, excluding the UK (p value < 0.01), is higher than the one of companies coming from the UK and the USA together (p value < 0.10). Even though the evidence shows that inward FDI of the type of mergers and acquisitions has a positive impact on the growth of labour productivity, policies continue to sustain preferentially greenfield investments because of the additional advantages that they bring: an increase in employment, new capital, new businesses, and the states can still control the national companies (because they would not be sold).

Djankov, Hoekman (1999) notice that, in the case of acquisitions, foreign companies prefer to invest in those firms that have a minimum productivity capacity, which is usually above the average one. The reason is that these firms will have higher productivity also after the acquisitions because the workers are familiar with more efficient technology, work division and fast rhythm which is obtained through

scale economies. This type of acquisition is called “cherry picking” strategy. Opposite opinions we can find at Lichtenberg and Siegel (1987) who sustain that it is more profitable to increase productivity in a company that performs very weakly, therefore the mean is to buy companies with very low productivity.

Djankov, Hoekman (1999) study how the total factor of productivity evolves, in the firms that receive foreign investment, and compare acquisitions with joint ventures. In the case of FDI the spillovers are more significant than in joint ventures. This means that parent firms transfer more technology (hard or soft) than partners do to their hosts. The results are surprising because the investments are higher in the joint ventures’ case. The explanation should consist in the absorption capacity of the national partner that is different from one form of cooperation to another. In what other domestic companies are concerned, in the same industry where the foreign presence exists, the spillover is negative and statistically significant, if we take into consideration FDI and joint ventures as one category.

4. Conclusions

In the current paper we have selected a series of studies that deal with the vast subject of the impact of FDI on labour productivity. Due to the numerous types of methodology used by researchers, but mainly to the host country’s particularities, the impact differs from one country to another. The main reason seems to be the different stage of economic development. The more the economy is better developed, the more the country is ready to benefit from FDI. When creating policies, governments should have a clear image about the local companies’ capacity to face the competition of better prepared companies coming from abroad. Foreign investors bring a more evolved technology that allows them to have high productivity and produce more at lower costs and of better quality. If domestic companies do not fulfill the conditions to catch up with these

performances, the losses could be dramatic. On the other side, the markets should not be opened to late either because the local companies must be acquainted with the international level of know-how and technology and they should learn to use competition in their advantage as soon as possible in order to become more and more productive.

A key aspect, when aiming to appreciate the advantages and disadvantages that foreign direct investment brings to the local companies, is the appropriate choice of methodology and variables. To be able to clearly state to what extent the choice of country (with its particularities) influences the opposite results, it would have been useful to have studies that use the same methodology on different countries' situation. One shortcoming that this paper has is the lack of such studies in its content.

Additionally, different types of studies should be taken into consideration before deciding whether its good or bad for a country to receive FDI. Policy makers must also take care of what type of investment it is better to promote: greenfield investments, mergers and acquisitions or joint ventures.

In the context of a healthy economic environment, countries can attain sustainable developed by increasing labour productivity through the assimilation of foreign technology and know-how from the foreign direct investment. The workforce becomes more qualified and able to produce more efficient.

Acknowledgement

The paper takes part of a research project sustained by the European Social Fund.

References

Aitken, B., Harrison, A. (1994), *Do Domestic Firms Benefit from Foreign Direct Investment? Evidence from Panel Data*, The World Bank Policy Research Department, Policy Research Working Paper No. 1248, Washington, DC

Anderson, Gary W. Jr. (2000), *Multinational Corporations and Tacit Knowledge: Determination of Entry-mode and Impact of Entry*, paper presented at the 7th Convention of the East Asian Economic Association, Singapore

Barrel, R., Pain N. (1997), *Foreign Direct Investment, Technological Change and Economic Growth Within Europe*, The Economic Journal, 107(445), p. 1770-1786

Berman, E., Bound, J., Griliches, Z. (1994), *Changes in the Demand for Skilled Labour within U.S. Manufacturing Industries: Evidence from the Annual Survey of Manufacturing*, Quarterly Journal of Economics, 109(2), pp. 367-397

Blomström, M., Globerman, S., Kokko, A. (1999), *The Determinants of Host Country Spillovers from Foreign Direct Investment: Review and Synthesis of the Literature*, Stockholm School of Economics Working Paper Series in Economics and Finance no. 339

Blomström, M., Persson, H., (1983), *Foreign Investment and Spillover Efficiency in an Underdeveloped Economy: Evidence from the Mexican Manufacturing Industry*, World Development Elsevier Journal, 11(6), pp. 493-501

Canyon, M., Girma, S., Thompson, S., and Wright, P., (1999), *The Impact of Foreign Acquisition on Wages and Productivity in the UK*, Centre for Research on Globalisation and Labour Markets, Research Paper 99/8

De Mello, L.R. (1999), *Foreign Direct Investment-led Growth: Evidence from Time Series and Panel Data*, Kent, Oxford Economic Papers, 51, p. 133-151

- Djankov, S., Hoekman, B. (1999), *Foreign Investment and Productivity Growth In Czech Enterprises*, The World Bank Policy Research Working Paper Series, 2115
- Driffield, N., Taylor, K. (2000), *FDI and the Labour Market: A Review of the Evidence and Policy Implications*, Oxford Review of Economic Policy, 16(3), p. 90-103
- Driffield, N., Taylor, K. (2000), *Spillovers from FDI and Skill Structures of Host-Country Firms*, University of Leicester Discussion Papers in Economics, 02/4
- Dunning, J.H. (1988), *The Eclectic Paradigm of International Production: A Restatement of Some Possible Extension*, Journal of International Business Studies, 19(1), 1-29
- Figini, P., Görg, H. (1999), *Multinational Companies and Wage Inequality in the Host Country: The Case of Ireland*, Trinity College Dublin Economics Technical Papers, 9816
- Girma, S., Greeway, D., and Wakelin, K., (1999), *Wages, Productivity and Foreign Ownership in UK Manufacturing*, Centre for Research on Globalisation and Labour Markets, School of Economics, University of Nottingham, Research Paper 99/14
- Golejewska, A. (2009), *Productivity Spillovers from Foreign Direct Investment in Polish Manufacturing 1993-2006*, Economics of European Integration Department, Faculty of Economics, University of Gdansk, Working Paper 902
- Hood, N., Taggart, J. and Young, S. (1999), *German Manufacturing Investment in the UK: Survey Results and the Economic Impact*, Innovation, Investment and The Diffusion of Technology in Europe, Ch. 4, Cambridge University Press, p. 68-89
- Hubert, F., Pain, N. (2000), *Inward Investment and Technical Progress in the UK*, OECD Economics Department Working Papers, 268

Lichtenberg, F.R., Siegel, D. (1987), *Productivity and Changes in Ownership of Manufacturing Plants*, Brookings Papers on Economic Activity, 18 (3), p. 643-684

Lipsey, R., Sjöholm, F. (2004), *Host Country Impacts of Inward FDI: Why such Different Answers?*, The European Institute of Japanese Studies Working Paper Series, 192

Liu, D., Yao, Z. (2006), *Ownership, foreign Investment and Productivity – A Case Study of the Automotive Industry in China*, Japan Center for Economic Research, JCER Discussion Paper, no. 104

Mc Gukin, R.H., Nguyen, S.V. (1995), *On Productivity and Plant Ownership Change: New Evidence from the Longitudinal Research Database*, RAND Journal of Economics, 26 (2), pp. 257-76

Mukherjee, A. (2007), *Firm Heterogeneity, foreign direct investment and the host country welfare: Trade cost vs. cheap labor*, University of Nottingham, School of Economics, Discussion Paper No. 07/05

Neven, D., Siotis, G. (1993), *Foreign Direct Investment in the European Community: Some Policy Issues*, Oxford Review of Economic Policy, 9 (2), p. 72-93

Pfaffermayr, M. and Bellak, C. (2000), *Why foreign-owned firms are different: a conceptual framework and empirical evidence from Austria*, HWWA Discussion Paper 115

Piscitello L., Rabbiosi, L. (2005), *The Impact of Inward FDI on Local Companies' Labour Productivity: Evidence from the Italian Case*, *International Journal of the Economics of Business*, 12(1), p. 35-51

Ravenscraft, D.J., Scherer, F.M. (1987), *Life after Takeover*, *Journal of Industrial Economics*, 36 (2), pp. 147-56

Young, S., Hood, N. and Hamill, J. (1988), *Foreign Multinationals and the British Economy*, London: Croom Helm;

Young, S., Hood, N. and Peters, E. (1994), *Multinational Enterprises and Regional Economic Development*, *Regional Studies*, 28 (7), p. 657-677

Zepeda, E., Schalatek, L., Gallagher, K. (2008), *Foreign Investment and Sustainable Development. Lessons from the Americas*, Working Group on Development and The Environment in the Americas, Washington, DC, Report published by the Heinrich Böll Foundation North America.