

EFFECTS OF THE MULTINATIONAL COMPANIES ON THE INCREASE OF LABOR PRODUCTIVITY OF LOCAL COMPANIES IN ROMANIA

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Abstract

Foreign direct investment boosts economic growth in Romania, through capital injected into the local economy and the creation new jobs. With the presence of multinational companies, managerial knowledge and technologies are transferred to the host country. Another important aspect is the competition that they make to local businesses, motivating them to align with the new standards to stay attractive. Innovations, organizational knowledge, processes of research and development of new products and services, as well as new technologies of production, management, communication or transfer of information brought by foreign companies to Romanian territory contribute to the increase of the productivity of local companies due to the established interactions.

Keywords: labor productivity, impact of fdi, wages, productivity in foreign companies, productivity in local companies

Introduction

Interaction between foreign companies and local influences how local firms work, especially labor productivity, how salaries are established, negotiation terms, or staff technological needs.

The differences in wages between local and foreign companies are observed by Aitken (1996), which shows that the differences are also due to the country of origin of foreign companies. Martins (2004) shows that in multinational companies, wages are higher than in local ones, but other studies such as those by Girma (2001) and Almeida (2007) report the opposite, that wages in local companies tend to be higher than those of foreign firms.

In the literature there are many studies on productivity generated by multinational companies. Mansfield and Romeo (1980) and Aitken and Harrison (1999) demonstrate that the impact that multinational companies

have on the productivity of local firms is negative. Djankov and Hoekman (2000) confirm this, demonstrating that a 10% increase in foreign direct investment leads to a 1.7% decline in local business productivity.

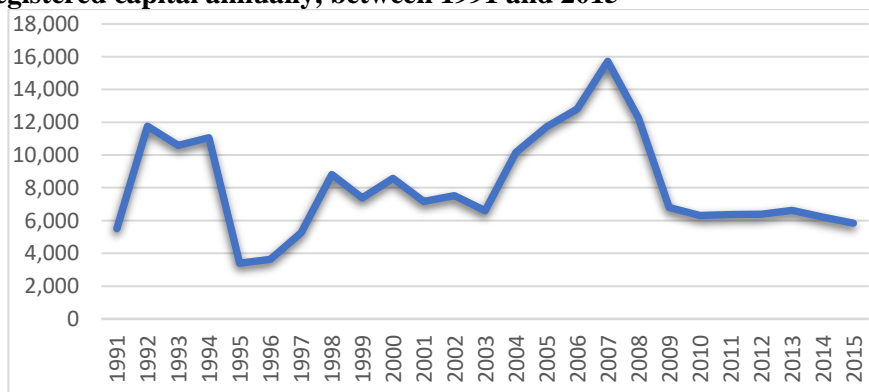
Demurger and Chen (2002) analyze the role of foreign investment in the growth of industrial productivity in China between 1988 and 1994. The study found a positive correlation between productivity growth and foreign investment in industry.

Bandick and Karpaty (2011) are conducting a study on the productivity growth of local firms in Sweden, driven by the transfer of knowledge from foreign companies. They demonstrate that local firms acquired by foreigners have a higher productivity rate, an average of 8% higher, compared to local companies in the same industry.

Evolution of foreign companies in Romania

The presence of foreign companies in the Romanian economy has been taking place since 1991, with the transition to democracy. The first open sectors to foreign investors were industry, followed by the financial and telecommunication sectors, which developed more strongly after 1998. Figure 1 shows the evolution of the number of investments with foreign participation in registered capital annually, in between 1991 and 2015.

Figure 1 - Number of companies with foreign participation in registered capital annually, between 1991 and 2015



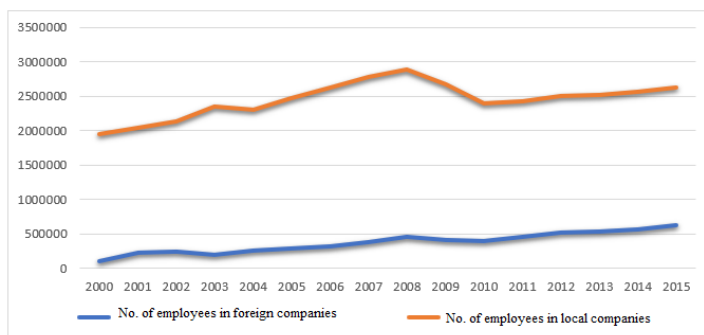
Source: ONRC Synthesis Report on Companies with Foreign Participation (www.onrc.ro)

The introduction of the Romanian economy into the global circuit has spurred foreign investors entering the market since 1991. The sharp drops in Gross Domestic Product from 38 billion USD in 1990 to 26 billion USD in 1993 have fueled aversions, and the number of companies with foreign capital recorded annually decreased considerably between 1993 and 1996, preferring other countries in the region where the transition to the democratic system took place faster and offered opportunities for achieving higher profits, such as the Czech Republic, Poland and Hungary.

The liberalization reforms and privatizations started in 1996 led to an increase of the companies with foreign capital, which had a positive and largely constant evolution between 1996 and 2003. During the pre-accession period to the European Union, Romania followed a massive privatization program to meet the necessary criteria, and the strong economic growth between 2003 and 2007, has made the number of foreign companies registered on a yearly basis growing massively, their number growing at 5.64% annually, similar to the one in the period from 1991 to 1993. The onset of the 2008 economic crisis produced a wave of global aversion and the recordings of companies with foreign capital decreased from 12,264 in 2008 to 6,801 in 2009.

In the post-crisis period, the number of investors who opted to start a company was lower, similar to 2009, but the value of these companies' capitals was double compared to 2003 - 2008, due to the large multinational companies that came to the market local.

Figure 2 - Evolution of the number of employees in the companies with foreign capital and those with Romanian capital, between 2000 and 2015

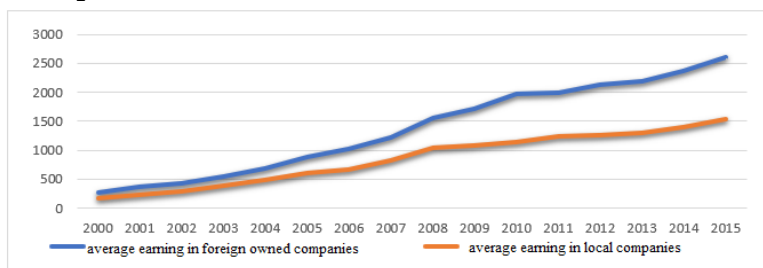


Source: National Statistics Institute (www.insse.ro)

Figure 2 shows the evolution of the number of employees in the local private and foreign-owned companies between 2000 and 2015. For both forms of ownership, the number of employees evolved positively. In domestic private companies, their number increased from 1.951.537 employees in 2000 to 2.633.083 in 2015. The number of employees in foreign-owned companies increased by more than 600%, from 103.939 in 2000, to 624.120 in 2015.

The financial crisis in 2008 led to decreases in the number of employees in both types of companies, with 491,090 redundancies in the Romanian capital companies and 54,804 in the ones with foreign capital in the period 2008 - 2010. During 2010-2015, in both types of companies the number of employees increased.

Figure 3 - Evolution of net average earning in local and foreign capital companies between 2000 and 2015



Source: National Statics Institute (www.insse.ro)

Figure 3 shows the evolution of net average earning in local and foreign capital companies between 2000 and 2015. As can be seen from the graph, both categories of earnings have had positive developments throughout the analyzed period, and the crisis has not led to wage cuts. The wage differences between local and foreign companies are high, of 1.078 RON in 2015. This can be explained by the presence of foreign investors in areas where profitability is higher, such as financial, technological, IT or research and product development. Another reason for this difference may be non-taxed pay from companies with domestic capital to reduce spending or higher productivity in foreign companies, which can lead to wage increases.

Analysis of the impact of multinational companies on labor productivity of local companies in Romania

Studies on the impact of foreign direct investments on productivity in Romania do not exist, but according to statistics produced by the European Commission, the labor productivity index has seen a positive evolution between 2000 and 2015. Labor productivity per employee is measured by the product formula gross Gross Domestic Product (in Standard Purchasing Power¹) relative to the total number of employees in all industries. According to this indicator, Romania ranks second in the European Union, being just overtaken by Ireland. Another way the European Commission offers to measure labor productivity is by reporting Gross Domestic Product (Purchasing Power Parity²) to the number of hours worked, where Romania ranks 1st in the European Union.

Under Romania's purchasing parity, Romania is overtaking countries such as Austria, the Czech Republic, Luxembourg, Slovakia, Denmark or Finland and would be on a par with Sweden, Belgium or Switzerland. The high level of this indicator also explains the high productivity rates in Romania. Although taxes, social security or mandatory land and housing prices are lower in Romania, and the cost of public transport, most of the goods come from import. More than 50% of the supermarket food products come from outside Romania, products for hygiene and body care, cars except for those produced at Mioveni and Ford in Craiova, many pharmaceutical products, most clothing, electronics and home appliances come from import. In almost all cases, they are more expensive due to transport costs and customs fees. Another example is the cost of mobile telephony services that are aligned at European level, but the cost of contract mobile terminals is higher than in Western countries. If we report the Gross Domestic Product, calculated in dollars, to the total number of persons employed, in the case of

¹ It is the reference currency set at the level of the European Union to express the results of the European Comparison Program. PCS is a conventional currency unit that excludes the influence of price differences between countries.

² It is a method used to calculate an alternate exchange rate between the currencies of two countries. PPC measures the purchasing power of a currency in an international unit of measurement (typically dollars), because goods and services have different prices in some countries compared to others. Purchasing power parity rates are used to comparing the standard of living in different countries.

Romania we will reach 38.496 (GDP / total employees), compared to the European average of 63.874 or Belgium of 89.160, for 2015.

To analyze the impact of productivity due to the presence of multinational companies on the labor force of local companies in Romania, the following model is proposed:

- Productivity of labor costs in Romanian companies =
$$\frac{GDP - FDI\ STOCK}{Total\ employees\ costs_L}$$
- Productivity of labor costs in companies with foreign capital =
$$\frac{FDI\ STOCK}{Total\ employees\ costs_F}$$

where: GDP = Gross Domestic Product, FDI STOCK = Foreign Direct Investment Stock, $Total\ employees\ costs_L$ = Number of Employees in Romanian Private Equity Companies * Net Average Wage in Romanian Private Companies,

$Total\ employees\ costs_F$ = Number of employees in wholly foreign owned companies * Net average earning from companies with foreign capital. The foreign direct investment stock is a component part of Gross Domestic Product and can be subtracted to perform productivity analysis.

Table 15 presents the data on Gross Domestic Product, FDI stock, GDP - FDI Stock, Total Cost of Employees and Productivity of Cost of Work by Form of Ownership for the Period 2000-2015.

Table 1 - Gross domestic product, FDI stock, GDP - FDI stock, total cost of labor, and labor cost productivity by form of ownership between 2000 and 2015

Year	GDP (USD)	FDI STOCK (USD)	GDP - FDI STOCK (USD)	Total cost of employees from companies with Romanian capital	Total cost of employees from wholly foreign companies	Productivity of labor costs in Romanian companies	Productivity of labor costs in foreign companies
2000	3743800000	6953000000	30485000000	329809753	28479286	92	244
2001	40716000000	8339000000	32377000000	484660260	78522708	67	106
2002	46174000000	7846000000	38328000000	624424772	100718640	61	78
2003	59867000000	12202000000	47665000000	920667664	106015035	52	115

2004	7621600000	2048600000	5573000000	1113131460	170064087	50	120
2005	9969700000	2538300000	7431400000	1476898599	258651861	50	98
2006	12353300000	4451600000	7901700000	1759713460	326593200	45	136
2007	17153600000	6160900000	10992700000	2294146793	455855988	48	135
2008	20818100000	6475800000	14342300000	2971143150	704014650	48	92
2009	16742200000	6988300000	9753900000	2899477995	702901458	34	99
2010	16799800000	6809300000	9990500000	2742968190	783620838	36	87
2011	18536200000	6951200000	11585000000	2979185440	923506016	39	75
2012	17166400000	7632800000	9533600000	3162010445	1098678532	30	69
2013	19154900000	8268800000	10886100000	3262716402	1178673903	33	70
2014	19949300000	7308600000	12640700000	3579190916	1318748672	35	55
2015	17752200000	6911200000	10841000000	4044415488	1631449680	27	42

In order to analyze the impact of foreign companies on the productivity of Romanian companies, the regression analysis method will be used. The timeframe of the analysis is 2000 - 2015. The dependent variable is "Productivity of Labor Cost in Romanian Companies" and the independent variable "Productivity of Labor Cost in Foreign Companies" in order to explain to what extent the productivity of local companies is influenced by foreign companies.

Table 2 - The correlation between Productivity of Labor Costs in Romanian Companies and Productivity of Labor Costs in Foreign Companies

		prod_rom	prod_isd
Pearson Correlation	prod_rom	1,000	,816
	prod_fdi	,816	1,000
Sig. (1-tailed)	prod_rom	.	,000
	prod_fdi	,000	.
N	prod_rom	16	16
	prod_fdi	16	16

Table 3 - The value of the correlation coefficient and the determination ratio

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,816 ^a	,665	,641	9,88314

a. Predictors: (Constant), prod_fdi

b. Dependent Variable: prod_rom

Table 4 - ANOVA for the regression between labor costs productivity in Romanian companies and labor costs productivity in foreign companies

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2715,202	1	2715,202	27,798	,000 ^b
	Residual	1367,470	14	97,676		
	Total	4082,672	15			

a. Dependent Variable: prod_rom

b. Predictors: (Constant), prod_fdi

Table 5 - Correlation coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17,411	6,093		2,857	,013
	prod_isd	,289	,055	,816	5,272	,000

a. Dependent Variable: prod_rom

Tables 2, 3, 4 and 5 show the values obtained from statistical regression testing. According to Table 2, the Pearson correlation coefficient is very close to the value 1 (corresponding to a perfect correlation), suggesting that there is a direct and strong correlation between the two variables. The R Square determination ratio, found in Table 3, is 0.665, demonstrating that there is a direct and very close link between Productivity of labor costs in Romanian companies and Productivity of labor costs in foreign companies. Table 4 presents the results of the variance analysis of the dependent variable

under the influence of the regression factor and the residual factor. The value of the F test is statistically significant and the value of Sig. corresponding to the F statistic is less than 0.01, demonstrating that the linear relationship between the two variables is significant. In Table 5, where the correlation coefficients are presented, the value of the t correlation coefficient of t is less than 0.01, showing that there are significant relationships between the two variables.

The analysis demonstrates that the presence of multinational companies increases the competitiveness and productivity of human resources in domestic firms. Although at the level of productivity estimated using the model conceived, foreign firms obtained a much higher level at the beginning of the studied period than the Romanian ones, the level decreased due to their interactions and the outsourcing effects of the technologies, the managerial and organizational knowledge that foreign investments produce on local firms. The lack of data at the economic sector level makes, for now, impossible to research the impact on the level of economic activity and to see if the presence of foreign companies in a certain economic sector leads to the increase of the productivity of the Romanian firms in the same field. With the availability of data at the level of economic activity, there will be the possibility of conceiving more detailed analyzes, but this study, which is an early point in studying the implications of foreign companies for increasing the productivity of local companies, can encourage the presence of the foreign capital in the national economy, necessary for the alignment of the indigenous companies with the new standards required.

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