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### Labor costs and the inflow of foreign direct investment to the European Union

### Abstract

The relationship between labor costs and foreign direct investment (FDI) has been relatively well explored in the source literature, but seemingly less so in the long-term perspective. The aim of this paper is to analyze changes in labor costs in EU countries between 1995 and 2015, and then to verify a hypothesis of their positive impact on the inflow of foreign direct investment. To this end, statistical data published by international organizations for this period was used, and research was conducted based on descriptive analysis methods. A general conclusion drawn from the conducted research is that the level of labor costs is in fact one of the several factors influencing FDI location decisions, and its importance should be assessed having in mind e.g. labor productivity and target industries in a host country. Labor costs can be more important for FDI in labor-intensive industries with lower value added, but estimation of this phenomenon goes far beyond the framework of this research paper.

Keywords: labor costs, foreign direct investment, European Union.

**JEL CODE**: E24, F21, F23.

# Introduction

The effects of the financial crisis that shook the world economy a decade ago persist to this day. Difficulties with maintaining a stable pace of economic growth, a clear slowdown in integration processes, widespread criticism of liberal economic policy, sociodemographic problems or questioning sustainable development policies are just some of the phenomena that the Rich North countries have been recently facing and which have largely limited their role in the international division of labor. The aim of the article is to verify a hypothesis of the positive impact of lowering labor costs on acquiring foreign direct investment in EU countries. To this end, statistical data for the period 1995-2015 was sued, published by international institutions such as the International Labor Organization, Eurostat, the OECD, the World Bank, the UNCTAD, as well as government agencies (the U.S. Bureau of Labor Statistics). In the paper, descriptive statistics methods were also used (dynamics, structure and trend analyses), with

some discrepancies in the selection of countries covered by research resulting from the unavailability of long-term data. In the first section, the article analyzes the changes in the level of labor costs in the EU compared to Japan and USA, comparing them subsequently with data on the inflow of foreign direct investment, only to draw relevant conclusions from the research and present them at the end of the paper.

#### Literature review

In the literature, a hypothesis is often put forward that one of the most important factors determining the inflow of foreign direct investment (FDI) to the economies of host countries is human capital. Robert E. Lucas, for example, argues that the deficit of human capital discourages foreign investors from investing through FDI in less developed countries (1990, pp. 92-96). Kevin H. Zhang and James R. Markusen, meanwhile, present an econometric model in which the availability of qualified employees in a host country is a direct requirement for the decision of transnational corporations to invest FDI and determine the scale of resulting capital inflow (1999, pp. 233- 252). John H. Dunning, on the other hand, maintains that employee qualifications and level of education can affect both the volume of FDI inflow and the nature of the activities undertaken by transnational corporations in a host country (1993).

It should be noted, however, that the impact of human capital, especially the quality of work and legal regulations affecting the domestic labor market, as well as local policies in the area of shaping the investment climate so as to attract FDI from transnational corporations, are relatively often taken up (Dunning and Narula 1995, Hanson 1996, pp. 86-106, Fields 2011, pp. pp. S16-S22). With this being said, there are relatively few reflections on the significance of labor costs in attracting FDI to host countries (Cushman 1987, pp. 174-185), which may be partly due to insufficient statistical data and its imperfect comparability.

Another area of research is the positive and negative effects of FDI inflows, which are often analyzed in the context of the economies of countries that are either developing or transforming (Brewer 1993, pp. 177-203, de Mello 1997, pp. 1-34; Hunya 1997, pp. 137-174, Buckley 2010, Wong and Tang 2011, pp. 313-330, Hale and Mingzhi 2016). It is worth noting that research on the determinants of FDI inflow and the nature of the activity of transnational corporations has also been carried out in relation to the aforementioned groups of countries (Asiedu 2002, pp. 107-119, Bevan and Estrin 2004, pp. 775-787), whereas for highly developed countries, analyses tend to focus the motivations of locating in them FDI by transnational corporations and the effects of FDI outflow from the source country's economy (Narula 1996, Dunning 1998, pp. 47-69, Slaughter 2000, pp. 449-472, Mody 2007).

In the Polish literature, the level of labor costs is most often analyzed - along with other economic, social, technological, infrastructural and administrative factors - primarily as a determinant of the inflow of foreign direct investment to the host country (Grodkowska 2001; Karaszewski 2004; Cieślik 2005; Pilarska 2006, pp. 72-73). This is most likely due to the role of Poland in international flows of investment capital in this form, which emerged after 1989 and continues to this day. Viewing the level of labor costs as one of the factors affecting the decisions of locating FDI by investors is, without a doubt, consistent with the research carried out by foreign authors, in particular J.H. Dunning. It should be noted, however, that there are relatively few Polish studies investigating the qualitative and quantitative effects of the inflow of direct investments to the host country (Witkowska 2000, pp. 647-668; Kaźmierczyk 2011, p. 59; Gorynia and Trąpczyński 2014, p. 670 et seq.), or analyzing this correlation in relation to Poland in the last two decades, i.e. after the country's accession to the European Union and the global financial crisis. Thus, it seems reasonable to carry out research on the impact of labor costs, in particular their change, on the inflow of FDI in the long-term perspective.

### Changes in labor costs in the European Union

Because of the transformations that took place in the global economy and international trade over the course of the last 20 years, unit labor costs in dollar terms have changed significantly, as confirmed by the data presented in Table 1. In the group of "old EU countries" (the top part of the table), the largest increase was recorded for Luxembourg, Greece, UK, Denmark and Italy, while a change of 35% was noted for the EU as a whole. Although it is difficult to present unambiguous reasons for this trend, it can be assumed that it was caused by the integration processes in Europe, changes in international specialization towards production based on advanced technologies and highly qualified employees, as well as the growing role of services in the economies of these countries.

In the bottom part of Table 1, selected countries of Central and Eastern Europe were presented, which *in gremio* recorded a significantly higher increase in unit labor costs than the original members of the EU. A record, three-fold increase was observed in Hungary and Latvia, with a give or take two-fold increase reported in the remaining countries. This is partly due to the base effect<sup>1</sup>, but it must be emphasized that the dynamics of changes in this indicator was significantly higher in this group already before joining the EU (with the exception of the Baltic countries).

<sup>&</sup>lt;sup>1</sup> This phenomenon refers to a sharp increase in labor costs due to their low dynamics in the earlier period.

Item	1995	2000	2005	2010	2015
Austria	100	100	102	112	123
Belgium	100	100	107	120	129
Denmark	100	109	124	143	148
Finland	100	101	108	123	138
France	100	103	113	125	131
Greece	100	129	159	188	164
Spain	100	112	131	148	142
Netherlands	100	109	119	131	135
Ireland	100	105	126	125	105
Luxembourg	100	109	129	154	167
Germany	100	101	100	104	114
Portugal	100	123	142	147	139
Sweden	100	107	114	128	141
UK	100	115	129	152	157
Italy	100	108	128	144	148
Czech Republic	100	141	166	178	183
Estonia	b.d.	100	124	177	211
Lithuania	100	145	159	188	217
Latvia	100	132	164	230	280
Poland	100	170	170	194	201
Slovakia	100	145	175	191	200
Slovenia	100	130	160	189	186
Hungary	100	189	255	294	316
EU-28	100	112	119	127	135

Table 1. Changes in unit labor costs in EU countries in 1995-2015 (1995=100)

Source: own calculations based on CEICD and OECD data, https://www.ceicdata.com/en/indicators (retrieved 18.11.2017);, http://stats.oecd.org/index.aspx?DatasetCode=PDBI\_I4 (retrieved 18.11.2017).

This is reflected in Chart 1, which compares the average hourly labor costs in EU countries in 2015. As expected, in the majority of the old EU countries, labor costs were significantly higher than the EU-28 average, with the exception of the countries that were most affected by the 2008 crisis, i.e. Spain, Greece, and Portugal. Hourly labor costs among the new Member States were much lower: in 2015, they oscillated at around 35-60% of the EU average, which means that they can be considered an important factor in building a competitive advantage by the countries from this group.



Figure 1. Average hourly labor costs in EU countries in 2015 (EU-28 = 100)

Source: own study and calculations based on Eurostat data, http://ec.europa.eu/eurostat/data/database (retrieved 18.11.2017).

Table 2 compares changes in costs and labor productivity in selected countries between 1996 and 2015. In most of the old EU countries, hourly labor costs in real terms hardly changed, with the largest increase recorded for Ireland (at 43%). In the corresponding period, hourly labor costs in Japanese industry fell by almost 30%, while in American industry - they increased by only 8%.

	Hourly labor costs in industry			Labor productivity			Datia*
Item	1996	2015	1996=100	1996	2015	1996=100	Katio
	а	b	с	d	e	f	(c:f)*100
Austria	37,61	39,19	104	44,56	58,61	132	79
Belgium	43,67	46,56	107	58,54	69,35	118	90
Denmark	35,79	44,44	124	55,45	66,66	120	103
Finland	33,76	38,46	114	41,52	54,73	132	86
France	37,54	37,59	100	51,58	65,80	128	78
Greece	17,53	15,48	88	28,90	34,82	120	73
Spain	21,06	23,65	112	44,90	51,14	114	99
Netherlands	33,90	36,53	108	53,48	66,97	125	86
Ireland	25,20	36,02	143	40,65	72,59	179	80
Germany	44,03	42,42	96	51,90	65,23	126	77
Portugal	9,75	11,08	114	27,38	33,87	124	92
Sweden	37,78	41,68	110	43,76	61,22	140	79
U	29,16	31,44	108	40,70	51,54	127	85
Italy	29,84	31,48	106	48,60	51,61	106	99
Czech Republic	4,91	10,29	210	22,88	37,04	162	130
Poland	4,76	8,53	179	16,13	30,78	191	94
Slovakia	4,29	11,26	263	20,37	40,72	200	131
Hungary	4,61	8,25	179	20,93	31,42	150	119
Japan	33,20	23,60	71	31,81	44,28	139	51
USA	34,79	37,71	108	46,29	67,83	147	74

 Table 2. Changes in hourly labor costs in industry and labor productivity in selected EU countries in 1996 and 2015 (real values in USD for 2015)

<sup>\*</sup> The ratio of labor costs dynamics to labor productivity dynamics in a given period. A value of less than 100 means that in a given period productivity increased faster than labor costs (or increased alongside decreasing labor costs), while a value greater than 100 signifies the opposite.

Source: own study and calculations based on U.S. Bureau of Labor Statistics data,

https://www.measuringworth.com/uscompare/result.php?year\_source=1996&amount=1&year\_result=2015# (retrieved 20.11.2017); International Labour Organization, http://www.ilo.org/ilostat/ (retrieved 20.11.2017).

Labor productivity improved across all countries in this group without exception, most notably in Ireland, Sweden, Austria and Finland (to a similar degree in Japan and USA). As a result, the ratio of change in labor costs to change in labor productivity (the rightmost column in Table 2) in all these countries (except Denmark) was less than 100. Meaning that, in these countries, labor productivity increased faster than labor costs, which was particularly evident in Greece, Germany, France, Austria, and Sweden. While the low value reported in Greece may be related to the aforementioned economic crisis and the accompanying decrease in wages, fast-growing labor productivity in the other countries was probably caused by significant investments in new production technologies, more effective management and specialization in high-tech industries (this may also explain the low values reported in Japan and USA). In the new Central European EU Member States<sup>2</sup>, labor costs in industry increased to a much greater extent. Despite the more than two-fold growth in Slovakia and the Czech Republic, and only slightly lower in Poland and Hungary, hourly labor costs in real terms approximated the level recorded only in Portugal. Thus, labor costs in industry remained on average 4-5 times lower in these countries than in most Western European countries.

Another positive phenomenon in the new EU Member States was the increasing labor productivity, particularly in Slovakia and Poland. Due to the considerably lower dynamics than in the case of labor costs, the ratio of change in labor costs to change in labor productivity was, however, in most of these countries above the value of 100. In other words, in Slovakia, the Czech Republic and Hungary, growth in labor productivity was neutralized with a surplus by the much faster rising wage costs, and the only exception in this respect is Poland, where these dynamics were comparable.

## FDI inflow and the level of labor costs

Labor costs and availability of qualified employees are one of the elements that shape the investment climate, the analysis of which affects the decisions made by transnational corporations regarding the location of FDI. Low labor costs are often perceived as an important factor attracting foreign investors, but in the long-term perspective, the maintenance of low labor costs as the main bargaining chip in negotiations with potential foreign investors may trigger a number of unfavorable phenomena in a host economy, such as the advantage of investors attracted by low labor costs (compared to the level of these costs in their country of origin) and tax reliefs financed from the state budget. The motivation of such entities is usually efficiency benefits, and host countries, in which mainly production plants with low value added are being located, are confronted with what is known as the middle income trap<sup>3</sup> (Aiyar et al. 2013; Eichengreen et al. 2013; Zielińska-Głębocka 2016, pp. 135-154).

This is partly reflected in the data and calculations presented in Table 3. Between 1995 and 2015, the accumulated FDI inflow per one employee increased by 2-3% in the old EU countries (similarly also in Japan and USA), expect in Ireland, Austria, UK, Portugal and the

<sup>&</sup>lt;sup>2</sup> Due to insufficient data, only four new EU member countries are listed in Table 2.

<sup>&</sup>lt;sup>3</sup> According to this hypothesis, a country that has experienced a relatively high rate of economic growth stops at the middle level of per capita income, not having enough potential allowing the transition to higher-income countries. The main threats that could result from a country falling into the middle income trap can include exhaustion of existing sources of competitiveness (e.g. low labor costs), unfavorable demographic processes (low fertility, aging population), lack of capital to finance new investments, low innovativeness of the economy, dependence on exports of goods with a low- and medium-degree of processing.

Scandinavian countries. In the new Member States, Slovenia and Hungary recorded the worst results, although the dynamics of this ratio in these countries was much still higher than in the first group. Small countries, such as Cyprus and Malta, were the unquestionable record holders, with a significant proportion of the FDI inflow to these economies likely directed to the services sector. In the remaining countries from this group, increases in the analyzed ratio were not as spectacular, but again, the low base should be borne in mind. Against this background, a 15-fold increase in the accumulated FDI inflow per employee in Poland is hardly a noteworthy achievement, considering also that in terms of value, the inflow of these investments to the Polish economy was one of the smallest (in 2015, only Greece and Romania reported worse results, or Japan from the group of countries outside the EU).

Table 3. Accumulated FDI per one employee in the EU, Japan and USA in 1995 and 2015 (in USD, fixed prices for 2015)

Item	1995 2015		Dynamics 1995=100	
Austria	7194	36952	514	
Belgium	39309	90795	231	
Denmark	12307	34148	277	
Finland	4735	30040	634	
France	12866	22935	178	
Greece	3588	4897	136	
Spain	9182	24154	263	
Netherlands	21895	79969	365	
Ireland	43823	394346	900	
Germany	11418	18376	161	
Portugal	5664	22445	396	
Sweden	10047	57849	576	
UK	10183	41856	411	
Italy	4169	13298	319	
Bulgaria	172	12835	7442	
Croatia	344	13863	4032	
Cyprus	1163	281640	24214	
Czech Republic	2079	21922	1054	
Estonia	1402	27831	1985	
Lithuania	287	10017	3489	
Latvia	748	14554	1946	
malta	5557	855802	15399	
Poland	659	9929	1506	
Romania	103	7490	7283	
Slovakia	764	15974	2090	
Slovenia	2749	12444	453	
Hungary	3960	18582	469	
Japan	734	2603	355	
USA	10755	34595	322	

Source: own study and calculations based on UNCTAD and World Bank data,

http://unctadstat .unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740 (retrieved 20.11.2017); https://data.worldbank.org/indicator/NY.GDP.DEFL.ZS.AD (retrieved 20.11.2017).

When comparing the dynamics of labor costs with the dynamics of FDI in low, it can be noticed that, in the last two decades, the largest increase was recorded in the new EU Member States (see Fig. 2). Among the old EU countries, similar trends occurred only in Ireland, while in the other countries covered by the study, very similar changes in hourly labor costs were accompanied by a slightly more diversified, but usually around two-fold, increase in the accumulated FDI per one employee. This may indicate that low labor costs in Central European countries have been an important factor encouraging transnational corporations to invest in them directly.





Source: own study and calculations based on UNCTAD and World Bank data, http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740 (retrieved 20.11.2017); https://data.worldbank.org/indicator/NY.GDP.DEFL.ZS.AD (retrieved 20.11.2017).

# Conclusions

Based on the research, the following final conclusions can be formulated

1. A positive relationship exists between labor costs and the inflow of FDI, but when making decisions to locate a new investment in a given country, transnational corporations may also take into account other components of the investment climate whose impact may distort the obtained results. Their inclusion is difficult due to the lack of sufficient statistical data covering a longer period of time, although it would be a valuable complement to the analyses carried out.

2. The persistent high labor costs in highly developed countries makes transnational corporations investing in them increasingly willing to reach for the achievements of scientific and technical progress, such as industrial robots replacing human work. Progressing robotization can therefore result in the cost and efficiency of human work becoming less important in making such investment decisions.

3. In the research, services were not included, as detailed data on labor costs in services is not published. For the same reason, it is difficult to determine what part of the incoming FDI is directed to the services sector. However, using the example of Poland, it can be assumed that the share of this sector in the total FDI inflow can be considerable (among others, due to the growing popularity of outsourcing in services).

4. Decisions to locate FDI in the old EU countries are influenced by the assessment of labor productivity and unit labor costs. This may be due to the fact that, in these countries, investments are primarily made in modern, technologically advanced production and service industries, and the main motivations of transnational corporations is the search for strategic assets.

5. The labor costs in the new Member States increased significantly in the investigated period, but in many cases, there was no corresponding increase in productivity, comparable to those recorded in highly developed countries. The wage pressure observed in recent years in Poland (exacerbated by unfavorable demographic factors and the increasing shortage of employees in many sectors) may in turn undermine the competitiveness of the Polish economy. To prevent this, it will be necessary to further increase labor productivity, which can be achieved, among others, through the implementation of modern methods of management and work organization, greater investments in modern technologies, as well as support for investments resulting in robotization and automation of industry and services. Although the last may be politically troublesome, it seems that, in the context of the negative sociodemographic phenomena, more intensive automation, computerization and robotization of manufacturing processes will help Poland attract the type of FDI that generates higher value added and ensures greater long-term economic benefits.

Last but not least, it might be worth emphasizing that, although the correlation of labor costs and FDI has been explored in many foreign and domestic publications, the basic purpose of the analyses was to examine whether, and to what extent, the inflow of this type of investment affects changes in labor costs in host countries. In spite of objective difficulties with gathering comparable statistical data, including a long research period rarely analyzed in the literature, it can be assumed that the set goal was achieved. Moreover, this paper contributes to broader discussion and further research on the positive and negative consequences of

the inflow of foreign direct investment, while the persistence of low or decreasing labor costs may be both the cause and the effect of the inflow of this form of capital to the host country .

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