TRENDS IN FDI AMONG THE NEW EU MEMBER STATES

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Biographical Note
Vasile Alecsandru Strat has graduated the Faculty of Cybernetics, Statistics and Economic Informatics in 2007. He holds a PhD diploma in Economics from 2012. He joined The Bucharest University of Economic Studies, in 2007 and he is currently holding the position of lecturer within the Department of Statistics and Econometrics from the Faculty of Cybernetics, Statistics and Economic Informatics. He is the author of more than 20 journal articles and articles published in volumes of international scientific conferences recognized in the country and abroad, mostly in the field of applied statistics and econometrics, foreign direct investments and higher education. He has also participated to more than 12 scientific national and international conferences and worked in 4 research projects as member of the research team. His work focuses mostly on the analysis of the foreign direct investments and higher education related aspects.

Abstract
Foreign direct investments (FDI) are considered by policy makers from the ex-communist countries as essential tools that can be used to improve the economic performance of their economies. On the other hand, foreign investors have started to regard these countries with an increasing interest after the fall of communism and their interest increased after these countries made important steps towards the EU and NATO. Noteworthy is the fact that the attractiveness of these economies was significantly different at the beginning of the ‘90s and since then had significantly different growth rhythms.

The main goal of this paper is to study the evolution of the disparities among these new EU members using time series of Gini coefficients and the structure of the entire stock. The disparities have decreased continuously and Poland and Estonia are leading the hierarchy in 2013 using the FDI/capita as an indicator.

Keywords: Foreign direct investments, European Union, regional disparities, Gini coefficient.

JEL Classification: A10, F62, F63, F21, O11, R11, R58
1. Introduction

The foreign direct investments are considered as being one of the most important sources that can fuel the growth of an economy, especially by the governments and by the policy makers of developing countries. Moreover, the benefits brought to an economy by the foreign direct investments have a very high diversity and, therefore, they have a significant impact in many fields. In these conditions it is obvious why this topic of foreign direct investments receives such an increased importance, both among scholars and practitioners. Some of the main fields where the foreign direct investments are considered as having a major impact are: the development of the management skills of the local managers, the creation of new and diverse jobs and, sometimes, they are also regarded as a source for higher salaries and for better career opportunities. Very important to note is also the fact that these foreign direct investments are regarded by the governments of most developing countries as one of the most important sources of capital, that can be attracted into their country.

The former communist countries from the Eastern part of Europe (the eleven countries which are now members of the European Union: Croatia, Bulgaria, Romania, Hungary, Poland, Slovenia, Slovakia, Czech Republic, Estonia, Latvia and Lithuania) are no exception in this regard. In the last ten years the foreign direct investments are perceived by the governments from this region as an alternative or as a complementary source of capital to the non-refundable EU funds.

The level and the typology of the foreign direct investments attracted by a country in a period can be considered as a very accurate indicator of the development level of that economy. Moreover, they are considered by some academicians as a very important determinant and also indicator of the development of many socio-economical aspects in a society. Following such a direction, I will try in this research paper, to analyze and to describe, in a clear manner, the evolution of the attractiveness of the East European countries (new members of the European Union) when talking about foreign direct investments.

Bearing in mind all the aspects presented above, I mention again that the main purpose of this research paper is to assess the evolution of the disparities between the eleven new EU member states when dealing with the domain of foreign direct investments. This paper also tries to respond to the following question: “Do the analyzed economies converge towards the EU15* average as the FDI stocks/capita are concerned?” By doing so I can assess if the area increases its homogeneity or becomes more polarized in what regards the stocks/capita of FDI. Going further I will try to link the main events which occurred during the last twenty years with the evolution of the analyzed phenomena.
2. General remarks regarding FDI and brief literature review

Due to the increased importance that foreign direct investments have in the present economic environment across the world and, also, due to globalization, this phenomenon receives (and has received) a lot of attention, both in the scholarly literature and among practitioners (such as policy makers). The importance of foreign direct investments is obvious due to the fact that they are often connected with the concept of economic growth and they are both considered as a tool for enhancing the economic growth and also as a result of the economic growth recorded by an economy (Popovici et al., 2014; Borensztein et al., 1995, Blomstrom et al., 1996 etc.). Moreover, it is important to note that at regional level (East Europe) there is a competition between governments for attracting foreign direct investments into their economies. This competition includes a large variety of instruments varying from taxation policy to different forms of state aids (Busu, 2014) and infrastructure related investments.

A large number of studies dealing with the field of foreign direct investments are concerned with the main socio-economic phenomena (named determinants) that are taken into consideration by foreign investors when deciding to locate a future investment in a new host country.

One of the first determinants, identified by the scholarly literature as being very important when discussing the location process of foreign direct investments, is the attractiveness of a market. Thereby, the market size is considered as being a crucial determinant of the foreign direct investments in the studies released by Cleeve in 2008, by Crozet et al. in 2004 and by Schneider and Frey in 1985. Broadman and Sun, in their research study published in 1997, bring significant evidence to support the idea that infrastructure is also a very important determinant considered by foreign investors before locating a new investment. Following the same path, the study of Khadaroo and Seetanah, released in 2009, stresses the importance of the transport infrastructure. Another essential determinant of the foreign direct investments, identified in the literature, is the labor market (Wheeler and Moody, 1992). When discussing the labor market, several aspects are regarded with interest, such as: wage levels and employment/unemployment rate (Davidescu, 2014a, 2014b).

Following the same approach, scholars identify also, as important determinant of the foreign direct investments a large variety of aspects related with the field of research and development. An adequate example in this regard is the study published by Cantwell and Iammarino in 2000. The trade openness is also identified as having a catalytic influence on the foreign investments, as presented in the studies published by Cleeve in 2008 and by Al-Sadig in 2009. Among others, the following phenomena are also discussed by the literature as having an increased importance in
attracting foreign investors in a country: macroeconomic stability, corruption level (Al-Sadig, 2009) and taxation policies. There are also a large variety of studies arguing that there is a positive relationship between human capital and the inflows of foreign direct investments (Dunning, 2001).

Another important direction followed in the literature that might be somehow connected with the field of foreign direct investments is the one dedicate to the study of the disparities of different socio-economic aspects that are described by scholars as being determinants of foreign direct investments. Such research is conducted both at national and at regional level (Strat, (2014), Davidescu & Strat (2014)) as it is the case of the paper published by Taylor and Bradley in 1997 or of the paper released in 2014 by Cerqueti and Ausloos.

There is also a large variety of studies that are trying to provide different methodologies for ranking the attractiveness or the potential of different countries/economies or even regions, in attracting foreign direct investments. Among these, the highest visibility is recorded by the rankings provided by the UCTAD. Also, a newer direction reflected in the literature involves the typology of the attracted foreign direct investments and the relationship between these different typologies and the amount of benefits brought into the host countries. Following such an approach academicians have brought important evidence to support the idea that horizontal foreign direct investments are more inclined to bring greater benefits to a host economy than the vertical foreign direct investments which are more oriented in improving efficiency and therefore are not that interested in supporting and accelerating the development of the host economy.

Also, somehow connected with this latest direction followed by the literature, there are some studies arguing that the inflows of foreign direct investments are rather increasing the disparities between different types of countries instead of supporting the convergence between those economies.

3. Methodology and data issues

The magnitude of the disparities registered between the eleven studied countries, both at the level of the entire area and at the level of the three sub areas, when dealing with their attractiveness for foreign investors, is evaluated with the help of the Gini coefficient.

Dynamic indices were also used along this paper in order to assess if these economies converge towards the EU15* average or not.

The analysis is conducted, both at the level of the entire stock of foreign direct investments (the distribution will be analyzed at the level of the entire area) and using the stocks/capita (in order to ensure a better comparability among different size economies).
As mentioned above the analysis is conducted both at the level of the entire sample of eleven countries and at the level of three sub-areas: East-North (Poland, Estonia, Latvia and Lithuania), East-Centre (Czech Republic, Croatia and Slovenia) and East-South (Hungary, Slovakia, Bulgaria and Romania).

The data (the time series) that were used along this article are downloaded from multiple sources and, therefore, the results and the findings reported by this paper need to be regarded with caution and they need to be interpreted in the framework imposed by such a limitation.

The sources of the data are, as follows:

- The time series for population (expressed in number of inhabitants) were downloaded from the web site of the EUROSTAT
- The GDP (expressed in US $ at constant prices 2005 and constant exchange rates) time series were downloaded from the database of UNCTAD
- The time series for the stocks of FDI (expressed as % from GDP) were downloaded from the web site of UNCTAD.

The time series of FDI stocks (expressed in US $) was reconstructed using the time series of GDP and the time series of FDI stocks, expressed as percentage from GDP. Due to comparability reasons, (between economies of significant different size) I have used indicators expressed as % from GDP or as value per capita (these indicators were constructed for this research paper).

4. Empirical findings

As mentioned above, the analysis conducted during this research uses the stocks of foreign direct investments/capita, and the entire stock of foreign direct investments, for each country, expressed as percentage of the entire stock of foreign direct investments of the entire region. The absolute values were not used due to the fact that the sample of analyzed economies is very heterogeneous when referring to the size.

Hungary, Poland and the Czech Republic attract the largest amount of foreign direct investments both at the beginning of the analyzed period and in the year 2013. Important to note is the fact that Poland and Hungary switch places, Poland becoming the most attractive economy for foreign investors and accounting for 34% of the total FDI attracted by the region. Notable is also the fact that the importance (expressed as percentage from the stock of the region) of the stocks recorded by the Czech Republic diminishes from almost 26% to a value little over 17%. Lithuania and Latvia have the lowest stock of foreign direct investments, expressed as percentage from the
total amount of attracted FDI both at the beginning of the analyzed period and also at the end. Notable is the fact that they switch places, while Lithuania ranks last in 1993, Latvia is last in 2013.

**Figure 1. Rankings based on the percentage from of FDI attracted from the total FDI stocks attracted by the region**

![Map showing rankings based on percentage of FDI attracted from total FDI stocks](image)

Source: Author’s work

Romania registers an important increase, being ranked, in 2013, on the fourth place with almost 9% of the FDI stocks located in the entire area while, in 1993, it was ranked seventh with only little under 1.8%.

Before going further it is important to mention that the attractiveness of the entire region has increased dramatically during the entire analyzed period (the NATO enlargement and the EU enlargement are probably the main events influencing this phenomenon).

When conducting the analysis using the stocks per capita, the rankings change dramatically and allow the assessment of the attractiveness of these economies for foreign direct investments in respect to their capacity as representing a potential market.

It is no surprise that Romania and Bulgaria have possessed the lowest FDI stocks/capita in 1993. Among others, the geographical location and the political regime might represent viable explanations for such a reality. In 2013, Romania was still ranked last with only about 68% from the stocks/capita attracted by Lithuania which is ranked on the 10th place. The stock/capita of
foreign direct investments of Romania represented only 16.4% from the EU15* average (the average stock/capita for the EU15, excluding Luxembourg) in 2013, while it represented under 1% in 1993.

Table 1. The stocks of FDI/capita (US $) for 1993 & 2013; as % from EU15*_average

<table>
<thead>
<tr>
<th></th>
<th>St_1993</th>
<th>St_2013</th>
<th>93/2013 (%)</th>
<th>St_1993/EU15*</th>
<th>St_2013/EU15*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>294.3</td>
<td>10591.0</td>
<td>2.78</td>
<td>9.34</td>
<td>64.97</td>
</tr>
<tr>
<td>Latvia</td>
<td>147.2</td>
<td>4421.2</td>
<td>3.33</td>
<td>4.67</td>
<td>27.12</td>
</tr>
<tr>
<td>Lithuania</td>
<td>82.9</td>
<td>3899.4</td>
<td>2.13</td>
<td>2.63</td>
<td>23.92</td>
</tr>
<tr>
<td>Poland</td>
<td>113.6</td>
<td>5244.4</td>
<td>2.17</td>
<td>3.61</td>
<td>32.17</td>
</tr>
<tr>
<td>Cz Republic</td>
<td>750.6</td>
<td>9671.5</td>
<td>7.76</td>
<td>23.82</td>
<td>59.33</td>
</tr>
<tr>
<td>Croatia</td>
<td>126.5</td>
<td>5854.7</td>
<td>2.16</td>
<td>4.01</td>
<td>35.92</td>
</tr>
<tr>
<td>Slovenia*</td>
<td>1609.7</td>
<td>5976.2</td>
<td>26.94</td>
<td>51.09</td>
<td>36.66</td>
</tr>
<tr>
<td>Hungary</td>
<td>1017.3</td>
<td>9482.1</td>
<td>10.73</td>
<td>32.29</td>
<td>58.17</td>
</tr>
<tr>
<td>Slovakia</td>
<td>253.9</td>
<td>7231.6</td>
<td>3.51</td>
<td>8.06</td>
<td>44.36</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>59.8</td>
<td>4687.2</td>
<td>1.28</td>
<td>1.90</td>
<td>28.75</td>
</tr>
<tr>
<td>Romania</td>
<td>23.2</td>
<td>2670.8</td>
<td>0.87</td>
<td>0.74</td>
<td>16.38</td>
</tr>
</tbody>
</table>

Source: Author’s work

Another notable aspect is the fact that, at the end of the analyzed period, Bulgaria, which was ranked just above Romania in 1993 managed to increase its stock, so that it surpassed Latvia and Lithuania. On the other hand, the third Baltic country, Estonia, managed to increase its stocks/capita so that it leads the hierarchy in 2013 (it reached almost 65% from EU15* average).

Also noteworthy is the fact that, at the beginning of the analyzed period, a king and viceroy effect (the effect identified in this paper is similar but it is not identical with the one identified by Jefferson (1939), by Laherrere and Sornette (1998) and by Roy Cerqueti and Marcel Ausloos (2014)) is identifiable, showing therefore that some countries from the communist block were considered more attractive and were used to “crack the wall” which once was the iron curtain. Slovenia might be regarded as the king, being the most attractive in 1993 and Hungary and the Czech Republic are the two viceroyes.

A similar effect, identifying the least attractive country might be also identified for Romania, which is the only one with an FDI stock/capita lower that 1% of the EU15* average. Due to the fact that the author of this paper is not aware of the existence of a definition or description of such an effect he proposes the following naming: pauper effect. Even though the terminology might
be considered as not being totally appropriate, the presented effect describes a unit of a population which tends to have significantly lower values for the analyzed variable than all other studied units (this statistical unit might be identified as an outlier at the lower end of the data series).

These two effects are also observable at the end of the analyzed period, even though their magnitude has severely diminished. Romania remains the least attractive country, being the only one with a stock/capita representing under 20% of the EU15* average. The new king is Estonia, while Hungary and the Czech Republic remain the viceroys.

During the entire period, Romania recorded the highest growth rate (at the beginning of the period, the stock/capita registered by Romania represented only around 39% from the stock/capita registered by Bulgaria and at the end of the period the stock/capita of Romania was almost 69% from the stock/capita attracted by Lithuania), and Slovenia registered the lowest one (these two economies were also ending and leading the hierarchy in 1993). Another notable aspect is represented by the fact that Slovenia is the only analyzed economy which does not converge towards EU15* along the analyzed period (51.09% in 1993 and only 36.66% in 2013).

Figure 2. The evolution of the Gini coefficient for the entire area

![Gini coefficient graph](image)

Source: Author’s work

Noteworthy is the fact that the disparities (concentration) were severe at the beginning of the analyzed period, when the coefficient was almost 0.6 high, and they have decreased continuously during the entire analyzed period, until 2013, when the coefficient reached values little over 0.2. An important aspect of this approach, that needs to be treated as an important limitation of the
present study, is represented by the fact that the analysis was conducted using the foreign direct investments as a stocks/capita and such a leveling of the values is somehow natural.

Another notable aspect is represented by the fact that the decreasing trend has been visibly affected by the global crisis and, consequently, starting from the year 2008 it records constant values around 0.22.

**Figure 3. The evolution of the FDI/capita stocks in the East-North area**

![Figure 3](image)

Source: Author’s work

In the north side of the analyzed area, three countries (see the figure above) have a similar evolution while Estonia is showing a significantly higher growth rate. Also observable is the fact that, after it reached a peak in 2005 (the first year after being accepted as an EU member), the Estonian FDI stock/capita, decreased, having an oscillating trend (the positive trend reappeared during the last three years).

A notable aspect is the fact that the stocks of FDI/capita of the other three countries from the studied region were similar in 2005 but, since then, Poland increased its attractiveness with a significantly higher rate.

In the Centre region, Croatia and the Czech Republic have similar evolution, with a general growing trend, while Slovenia is showing a U shape evolution from 1993 until 2009, and a decreasing trend since then. The attractiveness of the Slovenian economy decreased until the country was accepted as a NATO member and the trend was reversed until the effects of the global economic crisis emerged.
Notable is also the fact that the impact of the economic crisis on the attractiveness of Croatia was severe and, starting from 2009, the evolution registered by Croatia was similar to the one registered by Slovenia.

Figure 4. The evolution of the FDI/capita stocks in the East-Centre area

Source: Author’s work

In the Southern area, Hungary was the most attractive economy, displaying a type of behavior more similar with the countries from the central region. Although, for the case of Hungary notable is the fact that the peak was reached before 2000 and, after an important decrease, the ascending trend has re-emerged after 2000 (when Hungary entered NATO).

Figure 5. The evolution of the FDI/capita stocks in the East-South area

Source: Author’s work
Noteworthy is also the case of Slovakia which was increasingly attractive between 2000 and 2004. Afterwards, its attractiveness decreased significantly and the stocks of FDI/capita were somehow constant, with some oscillations between 2007 and 2010 (the impact of the global crisis). Bulgaria and Romania have a somehow similar behavior and display a growing trend for the entire period (at the end of the period a decreasing trend is visible for Bulgaria). It is also visible that after the two countries have finished their negotiation with the European Union (2004), Bulgaria has become significantly more attractive. This fact might be regarded as a direct result of the approaches that the neighbor governments had in relation with foreign investors. Therefore, based on the information displayed in the chart, I can assert that the area seems to have a higher degree of heterogeneity.

**Figure 6. The evolution of the Gini coefficient for the three sub-areas**

![Gini coefficient chart]

Source: Author’s work

Notable is the fact that the disparities decreased in all three subareas included in this analysis, but the rhythm is significantly different. While the disparities from the South decrease with an appreciatively constant rhythm, the disparities from the North have an oscillating trend.

The disparities from the Centre region decrease sharply until 1997 and, afterwards, they increase until 2000.

When using a simple linear regression to adjust the trend for each time series of Gini coefficients the negative trend is confirmed for all four cases (all four regressions have negative values for the slopes). What is noticeable is the fact that the first three coefficients are highly significant (p-values < 0.01) showing that there are enough statistical evidence to support the idea that the decrease of the disparities is a real one in the entire region and also in East-South region.
and East-Center region. Also noteworthy is the fact that the fourth coefficient is not statistically significant suggesting that even the decrease of the disparities is slightly visible (over the entire analyzed period) from the chart we do not have enough statistical evidence to support this trend, for the East-North region.

### Table 2. The sign and the significance of the slope

<table>
<thead>
<tr>
<th>Time series of Gini Coefficients</th>
<th>Slope</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1: Gini time series for entire region</td>
<td>-0,0157</td>
<td>0,0000000000</td>
</tr>
<tr>
<td>Model 2: Gini for East-South region</td>
<td>-0,0214</td>
<td>0,0000000000</td>
</tr>
<tr>
<td>Model 3: Gini for East-Center region</td>
<td>-0,0170</td>
<td>0,0000054609</td>
</tr>
<tr>
<td>Model 4: Gini for East-North region</td>
<td>-0,0011</td>
<td>0,2370551861</td>
</tr>
</tbody>
</table>

Source: Author’s work

Also notable, when analyzing the chart, is the impact of the global crisis which switches the trend for all three presented sub areas (the lowest impact appears to be in the East-North region). Therefore, it becomes obvious that the economic crisis had a significant impact on the inequalities registered in this field of foreign direct investments.

### 5. Conclusion

Before listing the findings of this research and trying to provide some socio-economic explanations for the resulted findings it is mandatory to mention that, taking into consideration all the limitations imposed by the quantitative tools employed and by the set of data used, the findings reported by the current study need to be regarded with caution and need to be interpreted just as an exploratory research. An appropriate usage of these findings might be as a starting point in future research studies or, they can even be used as a basis for the development of future directions by the policy makers of these eleven economies. They might be of interest when forging or optimizing the policies relevant for attracting FDI.

Notable is the fact that the attractiveness of the entire region has significantly increased during the analyzed period (fact that can easily be connected with the NATO enlargement and with the EU enlargement) and that the disparities between the studied economies (when discussing their attractiveness for foreign investors proxied through the stocks of FDI/capita) have continuously decreased during the entire period. Another noteworthy aspect is the fact that the economic crisis has had a visible impact on the decreasing trend of the disparities and, after 2008, the value of the Gini coefficient remained somehow stable around a value of 0.22.
The study revealed that there was a significant difference in attractiveness of these economies for foreign investors at the beginning of the studied period. Poland, Hungary and the Czech Republic account together for 75.6\% of the total stocks of FDI attracted by the area in 1993 and of about 66.7\% at the end of the analyzed period. Even though this fact was somehow expected, it reinforces the idea that the geographical proximity (to the Western Europe) is a crucial factor when discussing the phenomenon of foreign direct investments in this region. Also notable is the significant increase in attractiveness registered by Romania, which increases its stocks from 1.77\% in 1993, to almost 9\% in 2013 and, therefore, it ranks fourth.

When taking the analysis at the level of the stocks of foreign direct investments per capita, the situation suffers severe changes. Slovenia was ranked first in 1993 with a stock per capita of around 1610 US $ and was followed by Hungary at a significant distance, with a stock per capita of only 1017 $. The ranking was closed, in 1993, by Bulgaria and Romania with a stock per capita of only 59.8 US $, respectively 23.2 US $. Even though the growth rhythm registered by Romania was the highest, during the analyzed period, due to the fact that the initial stock was very low compared to all other eleven economies included in the sample, it still remained the last at the end of the period. On the other hand, Bulgaria had an impressive evolution, surpassing Latvia and Lithuania (the year 2013). Notable is also the fact that, with a very low growth rhythm, Slovenia finds itself only at the middle of the hierarchy in 2013 (Slovenia is the only economy which does not converge towards EU15*average during the analyzed period).

Another important limitation of this study is represented by the method used for constructing the three clusters of countries. Even though the intention was to keep a balance between the number of countries included in each group (and to provide an alternative clustering model) probably including only Romania and Bulgaria in the East-South group would have been more appropriate and is definitely recommendable in future studies.

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