FOREIGN DIRECT INVESTMENT IN SLOVAK REGIONS AND THEIR IMPACT ON REGIONAL ECONOMIC GROWTH

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Abstract

Competitiveness in the field of gaining new Foreign Direct Investment (FDI) and keeping the existing foreign developers, investors in the country has become an inseparable part of the national policy aiming at increasing the competitiveness of national economies. The increasing effectiveness of the Slovak economy is closely linked to an increase in FDI, that is a direct accelerator for the economic growth and regional development but on the other hand FDI may result in regional disparities within the national economy.

Since the time FDI entered the Slovak economy it has not been allocated equally. The paper discusses FDI allocation in different Slovak regions and its impact on economic growth in regions. Applying correlation analysis the correlation between the selected macro economic indicators (GDP, unemployment rate) and FDI in Slovakia and in Trenčín Region are quantified in the paper.

The type of the article: Research paper.

Keywords: Foreign Direct Investment, Foreign developer investor, Multinational Company, Political stability, Economic Stability.

JEL Classification: F35.

1. Introduction

Foreign Direct Investment acquired an important role in the international economy after the Second World War. According to the definition by the International Monetary Fund the FDI is a „category of international investment reflecting the objectives of a subject placed in a national economy (direct developer, investor) to acquire a lasting interest in an enterprise operating in an economy other than that of the investor, the investor’s purpose being to have an effective voice in the management of the enterprise (company of a direct investment). The lasting interest implies the existence of a long-term relation between a direct developer, investor and a business of a direct investment and also a substantial extent of investor’s developer’s impact on managing a business is implied. The relation between a developer and a company is categorized as FDI if the direct developer acquires at least ten per cent of regular shares or the right to vote in a foreign company “

The FDI definition by OECD says: “it is a category of foreign investment done by a subject operating in a national economy (direct foreign developer/investor) aiming at creating a permanent interest in a business operating in an economy other than that of the investor. The lasting interest is represented by the existence of a good relation between a direct developer, investor and a business in which the investment flew and a substantial impact of the direct investor, developer on managing a business in which the developer invested the funds. The direct investment involves an initial transaction between these two subjects and also all capital transactions following between them and between developers’, investor’s subsidiaries belonging or not belonging to the same corporation”.

The part of statistical data processed by the National Bank of Slovakia defines the FDI as „a category of international investment representing the aim of an economic subject residing in an economy /direct investor, developer), to acquire a permanent share in a company operating in other economy (business for a direct investment). The lasting share implies the existence of a long-term relation between a direct investor, developer and a business for the direct investment and impact on managing the business. Defining the existing share of a direct investment international standards...
and their criterion of a ten per cent share in the basic capital and rights to vote in the business are applied” (Šáková, 2002).

The chief incentives to invest in businesses abroad are:

- Utilizing cheap inputs
- Lowering the costs affiliated with foreign trade
- Tax benefits
- Diversification of outputs, inputs and the benefit
- Lowering the currency risk
- Legislation on health protection, safety at work and on ecology in the hosting country encompasses more benefits (Táncošová, 2004).

The Slovak Republic is a suitable place where the foreign investment can flow. The country has been stable from the political and economic point of view and its economy has undergone some outstanding structural changes for last ten years. Its challenge is to become one of the best potential countries where the foreign investment flows.

The agency SARIO gives following reasons for investing in Slovakia:
- excellent geographical location in the middle of Europe;
- political and economic stability, the highest economic growth in the region;
- tax reform;
- qualified and skilled labour force;
- low labour cost and high labour productivity;
- common European currency Euro – since 2009;
- large selection of industrial land and offices available for purchase or lease;
- investment incentives harmonised with the EU legislation;
- the infrastructure quality has been improved;
- high innovation potential for R&D projects are further assets of the country.

Foreign Direct Investment has an impact on lowering the unemployment rate as it enables opening new positions and it promotes the economic growth but on the other hand it represents a certain amount of the costs that the national government must bear in the form of investment stimulation, incentives in the form of tax deferred period. For a small –sized and open Slovak economy the Foreign Direct Investment is a key resource of new technologies and getting knowledge, it is a tool of opening new jobs. FDI means an access to international markets and improving the economic situation in the country.

The goal of the paper is to prove the positive impact of FDI on the macro-economic indicators (GDP and unemployment rate) in the Slovak Republic and in the Trenčín Region by means of the correlation analysis.

2. Method

The paper aims at assessing the flow of FDI into Slovakia and the regional allocation of the investment. At the same time the paper points out the strengths and weaknesses in regions and analyzes the impact of FDI on the economic development of regions. The correlation analysis is applied to quantify the relation, the correlation between foreign direct investment and selected macro economic indicators such as GDP, unemployment rate in the Slovak Republic and in the Trenčín Region. The input data for our analysis are the data published by the Slovak Statistics Office, the National Bank of Slovakia and by the Agency SARIO. The data were gathered between the years 2001 and 2010. Except for the analysis also other methods such as synthesis and benchmarking might be employed to achieve the goal.
3. Results

Regional allocation of FDI in Slovak Republic

Regions for flowing FDI can be selected by chance or in advance. From the regional point of view and according to the literary resources on economics the direct investment is divided into following types: “targeted”, “imidental” and “domestic”. The “targeted” investment flows into a selected region and the investor/developer has never invested in the region before. In case of “imidental” investment the investor/developer makes a takeover of a business from a former business owner. The investor is interested in the business not in the given region. “Domestic” investment represents a foreign company aiming at expanding at the hosting country market.

Theory of regional FDI division assumes that:
- assets of national and foreign businesses differ in regions;
- foreign investors/developers are interested not only in general local benefits but in specific regional benefits as well. They are more attractive and challenging for foreign investors.

Basic criteria for making decisions in location at different local levels such as country, region, city, land are defined by Maier and Todtling (1997).

The decision making of investors can be conditioned by two types of incentives:
- Possible gaining a market share and strategic location in a region.
- Lower production costs due to better costs-price oriented competitiveness.

It can be generally concluded that foreign investment utilizes regional stimuli and incentives offered by the hosting country and the regions meeting specialised requirements are selected for FDI flow (production costs, transportation costs, political and economic stability, labour productivity, profit, market growth etc.).

FDI positive impact on the region is as it follows:
- In many cases foreign investment needs government’s permission issued by the hosting country, the policy is based on regional policy of development;
- Foreign investors/developers try to build image of good citizens and selection of the location helps build a good fame of the company;
- International corporations react very intensively to factors signalling prices;
- In some regions foreign developers are the only one local employer opening positions for people;
- Foreign investors, developers entering the market for the first time are not familiar with some traditional duties in relation to regions and authorities, institutions. They are more independent than the businesses that have already started their activities;
- Foreign investors, developers focus on the industries and businesses that are relatively independent and can be placed in selected regions;
- Cooperation between large businesses and national industry, i.e. SME, multiplication effects. (Baculíková, 2008)

<table>
<thead>
<tr>
<th>Location</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>Taxes, political and economic stability, trade unions existence, inflation rate, growth, government subsidies for regions</td>
</tr>
<tr>
<td>Region</td>
<td>Work force, wages, existence of trade unions, market access and market dynamics, economic structure, suppliers, services, regional subsidies and promotion</td>
</tr>
<tr>
<td>City, town</td>
<td>Existence of technical infrastructure, transport corridors access, quality and quantity of workforce, social infrastructure and services, local economic policy, subsidies, owners of assets and land, standard of living.</td>
</tr>
<tr>
<td>Land</td>
<td>Infrastructural connection, area and prices, assets’ owners, quality of environment.</td>
</tr>
</tbody>
</table>

Source: Maier, Todtling, 1997.

Regional development is conditioned also by FDI regulation by the government. Some
countries differentiate the tax policy and by means of low taxes or a tax break they attempt to attract foreign investors, developers. Foreign investors take into account the infrastructure, road network in regions. FDI may result in deepening the regional disparities, as not developed regions have nothing to offer the investors. The conditions can be improved if modern telecommunication is developed, if roads and motorways are interconnected, if the railroad, air and river transport are connected to international transit systems.

Of particular importance for regional development is the entry of large foreign investment, which in many cases triggers further investment by national businesses in the host country. This effect is called multiplication effect having impact on regional development. It is obvious that large foreign investment needs large businesses and not small and medium enterprises. Large foreign investment represented by large foreign companies always has strategic goals and the companies are placed in locations enabling them to run the business for a long time and effectively. For large FDI it is important that legislation and fiscal regulations are of a long-term validity, so that calculations and prospects of FDI can be evaluated from a long-term point of view.

Level of regional development in Slovakia is assessed by means of the quality of the road infrastructure (especially quality of motorways and roads for motor traffic), by FDI flow and by means of wages range and unemployment rate and varies from region to region substantially. In general the regions in the western Slovakia (Bratislava, Trnava) are more developed that the ones lying in the middle of Slovakia (Banská Bystrica Region) and the eastern regions such as Presov, Kosice. The regions in western Slovak are preferred by foreign investors due to their infrastructure (motorways, roads,) due to the vicinity of Tran European transport network and places of customers. In the regions Zilina, Trnava and Bratislava some automotive clusters are designed and formed such as KIA in Zilina, PSA (Peugeot) in Trnava and Volkswagen in Bratislava, whereas in the regions Trnava and Nitra an electronic cluster with the company Samsung – seated in Galanta, Voderady and the cluster Sonny in Nitra are formed. Steel production keeps on its tradition in the Kosice region with the company U.S. Steel Kosice. Chemical businesses are seated in Humenne in the Presov Region and in Puchov in the Trencin Region. The wood-processing industry is located in the middle of Slovakia – in the Banská Bystrica Region.

FDI flow up to the year 2000 did not seem to be satisfactory. The year 2000 is a turning point in FDI flow when Slovakia attracted 2 billion USD of investment, what represents the total amount of FDI between the years 1993 – 1998.

The form of selling businesses to foreign investors/developers directly started to be preferred. The structure of foreign investment changes, the share of trade decreases in favour of industries and financial institutions. A significant part of FDI flowed into the Slovak automotive industry dominated by investors who run the business of assembling automotive components. In 2009 the FDI flow slows down rapidly what might be caused by the crisis and by the Slovak Euro zone accession. National subsidiaries of foreign mother companies, that controlled the liquidity in Slovakia before the Euro was adopted, shifted a part of these operations to foreign countries, where it is controlled at a mutual European level. In the same year the unemployment rate in Slovakia was reported to increase. The year 2011 is a successful year from the point of view of FDI flow. Within last three years Slovakia successfully attracted most foreign investors. The amount of FDI increases by four times if compared to the previous year and there is a one hundred per cent increase in the number of new positions opened.

Since the time when FDI has flowed into the country the entire process of the flow can be characterized as regionally unequal due to following facts:

- Different levels of regional infrastructures;
- The finance is accumulated in large centres usually administrative and control ones;
- Different level of qualified work force available;
- The access to industrial parks and their equipment;
- Lack of experience gained in the field of cooperation with foreign investors/developers.

The data gathered in Table 2 show that the first position in FDI flow in Slovakia has been
taken by the Bratislava Region. This region has kept its sixty per cent share in the total amount of FDI in Slovakia since 2001. The regional GDP is more than doubled if compared to the other regions. During the period analyzed the region keeps the lowest unemployment rate although in 2009 a slight increase was reported again. The Bratislava Region keeps the highest average monthly salary that was much higher than the highest average salary in other Slovak regions, where it hardly amounted 700 Euros in 2009, in the Bratislava Region it was higher than 900 Euros. Also differences and disparities in investment quality are unveiled. In last two years the Bratislava Region becomes attractive and challenging city also for finance that flows into the research and services. In this region there are four industrial parks and among the largest investors there are Volkswagen, Slovnaft, Henkel, Rajo, Eurotel, Orange, ISS Facility Services and others. A great potential of the Bratislava Region is its good access of the region, good transportation infrastructure, educated and qualified workforce. This region has also another asset and it is its location. The region lies in an economic location Vienna – Bratislava, that has good prerequisites for being a challenging powerful European centre.

The Kosice Region takes the second place in FDI flow chart. It is the second most important region after the Bratislava Region due to its power and efficiency in exporting goods and GDP production per capita. In producing GDP this region takes and keeps the third place after Bratislava and Nitra Regions. The unemployment rate takes the third position and in 2009 a slight increase was reported. In the years 2002 – 2009 due to FDI flow 8,030 new positions that are 13 per cent of all jobs created in Slovakia were opened in the Kosice Region. Within the regional industrial structure the most important sectors are metallurgical, chemical and electro technical industries. Important investment - EE Sensing Slovakia s.r.o. (IEE S.A.) - from Luxemburg went into the electro technical industry in 2009. Metallurgical industry forms 60 per cent of industrial production and 50 per cent of export. In this branch the largest company in the region “U.S. Steel” Kosice is responsible for a high FDI increase in the region in 2000. The companies with a foreign capital such as “BSH Drivers” and “Pumps and Siemens Automotive” located in the town of Michalovce run their businesses in the electro technical industry. Another important large investor are companies “Embraco”, “Panasonic AVC Networks Slovakia” and “Yazaki Wiring Technologies”.

Another Slovak region with a strong economy is the most industrial region after Bratislava and it is the Trenčín Region. Although in the years 2002-2009 in this region 12,273 new positions were opened, unemployment rate in this region increased by 2.5 per cent in 2009. In this year also regional GDP decreased. The Trenčín Region takes the fifth rank in FDI flow in Slovakia. The share of FDI in Slovak foreign investment forms five per cent. Among the most important investors/developers in this region are Continental Matador Rubber, EMERSON, Leoni Autokabel Slowakia, YURA Corporation Slovakia, Hella Slovakia Signal-Lighting, and Delta Electronics.

### Table 2. FDI, unemployment rate and regional GDP in Slovakia

<table>
<thead>
<tr>
<th>Years</th>
<th>% share of FDI in Slovakia</th>
<th>Average salary a month in Slovak economy(€)</th>
<th>Unemployment rate in %</th>
<th>Regional GDP (mil. EURO)</th>
<th>% share of FDI in Slovakia</th>
<th>Average salary a month in Slovak economy(€)</th>
<th>Unemployment rate in %</th>
<th>Regional GDP (mil. EURO)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bratislava Region</td>
<td></td>
<td></td>
<td></td>
<td>Nitra Region</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>62.5</td>
<td>539.7</td>
<td>8.3</td>
<td>8 318</td>
<td>4.9</td>
<td>378.8</td>
<td>18.0</td>
<td>3546</td>
</tr>
<tr>
<td>2002</td>
<td>71.2</td>
<td>585.1</td>
<td>8.6</td>
<td>9265</td>
<td>4.3</td>
<td>414.5</td>
<td>16.1</td>
<td>3770</td>
</tr>
<tr>
<td>2003</td>
<td>69.7</td>
<td>626.6</td>
<td>6.9</td>
<td>10184</td>
<td>5.1</td>
<td>443.5</td>
<td>13.2</td>
<td>4342</td>
</tr>
<tr>
<td>2004</td>
<td>68.0</td>
<td>697.6</td>
<td>8.2</td>
<td>11379</td>
<td>6.0</td>
<td>487.0</td>
<td>12.5</td>
<td>4892</td>
</tr>
<tr>
<td>2005</td>
<td>66.5</td>
<td>770.5</td>
<td>5.2</td>
<td>13416</td>
<td>5.9</td>
<td>534.0</td>
<td>10.4</td>
<td>5480</td>
</tr>
<tr>
<td>2006</td>
<td>65.8</td>
<td>825.2</td>
<td>4.3</td>
<td>14387</td>
<td>7.6</td>
<td>584.5</td>
<td>8.8</td>
<td>6892</td>
</tr>
<tr>
<td>2007</td>
<td>67.6</td>
<td>876.9</td>
<td>4.2</td>
<td>16932</td>
<td>6.9</td>
<td>635.8</td>
<td>6.5</td>
<td>7610</td>
</tr>
<tr>
<td>2008</td>
<td>62.4</td>
<td>943.5</td>
<td>3.6</td>
<td>17516</td>
<td>9.9</td>
<td>676.2</td>
<td>6.2</td>
<td>7932</td>
</tr>
<tr>
<td>2009</td>
<td>62.7</td>
<td>969.9</td>
<td>4.7</td>
<td>17621</td>
<td>9.8</td>
<td>689.0</td>
<td>9.1</td>
<td>7246</td>
</tr>
<tr>
<td>2010</td>
<td>61.9</td>
<td>991</td>
<td>6.1</td>
<td>-</td>
<td>9.9</td>
<td>705</td>
<td>12.0</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Trenčín Region</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>3.0</td>
<td>371.4</td>
<td>13.4</td>
<td>3584</td>
<td>3.3</td>
<td>346.4</td>
<td>23.1</td>
<td>3806</td>
</tr>
<tr>
<td>2002</td>
<td>2.9</td>
<td>401.1</td>
<td>11.3</td>
<td>3779</td>
<td>2.7</td>
<td>379.3</td>
<td>23.8</td>
<td>4118</td>
</tr>
<tr>
<td>2003</td>
<td>3.5</td>
<td>422.7</td>
<td>9.2</td>
<td>4187</td>
<td>3.1</td>
<td>403.2</td>
<td>23.4</td>
<td>4649</td>
</tr>
<tr>
<td></td>
<td>Nitra Region</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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The Prešov Region has been ranked in the last eights position in FDI flow for a long time. Its percentage share in total FDI flow in Slovakia is under 2 per cent for a long time, within last three years this percentage dropped to less than 1%. In the years 2002-2009 foreign investors/developers opened 3,654 positions in this region, it is the least number the least percentage within Slovakia. The regional GDP is at the lowest level and it represents one third of the Bratislava regional GDP.

Unemployment rate in this region increased by more than 3% in 2009 and together with the important investors/developers in this region are dependent variable. The input data are given in Table 3. The independent variable in our analysis defines what the measure of one or more quantitative variables. It does not define the cause-consequent relation between two variables; it measures the power of statistical dependence between two variables; it does not define the cause-consequent relation between two variables; it defines what the measure of one or more independent variables is and causes the effect on dependent variable. The input data are given in Table 3. The independent variable in our analysis

**FDI impact on selected macro economic indicators**

Quantifying the power of dependence between FDI and GDP or FDI and unemployment rate **Pearson correlation coefficient** is employed.

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}}$$

The correlation coefficient measures the power of statistical dependence between two quantitative variables. It does not define the cause-consequent relation between two variables; it defines what the measure of one or more independent variables is and causes the effect on dependent variable. The input data are given in Table 3. The independent variable in our analysis
is the figure characterizing the situation in FDI and dependent variable is unemployment rate or the value of regional GDP.

**Table 3. Selected indicators and their development**

<table>
<thead>
<tr>
<th>Years</th>
<th>Trenčín Region</th>
<th>Slovak Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FDI in mil. EUR</td>
<td>Unemployment rate in %</td>
</tr>
<tr>
<td>2000</td>
<td>224,026</td>
<td>15,0</td>
</tr>
<tr>
<td>2001</td>
<td>235,644</td>
<td>13,4</td>
</tr>
<tr>
<td>2002</td>
<td>317,965</td>
<td>11,3</td>
</tr>
<tr>
<td>2003</td>
<td>784,101</td>
<td>9,2</td>
</tr>
<tr>
<td>2004</td>
<td>956,128</td>
<td>8,6</td>
</tr>
<tr>
<td>2005</td>
<td>1 141,431</td>
<td>8,1</td>
</tr>
<tr>
<td>2006</td>
<td>1 060,736</td>
<td>7,1</td>
</tr>
<tr>
<td>2007</td>
<td>1 401,266</td>
<td>5,7</td>
</tr>
<tr>
<td>2008</td>
<td>1 628,475</td>
<td>4,7</td>
</tr>
<tr>
<td>2009</td>
<td>1 734,913</td>
<td>7,3</td>
</tr>
<tr>
<td>2010</td>
<td>1 806,917</td>
<td>10,2</td>
</tr>
</tbody>
</table>

*Source: Slovak Statistics Office, National Bank of Slovakia*

The value of the correlation coefficient varies in the interval <-1, 1>, where
- Positive values represent direct correlation of analyzed values, figures; the closer they are to „1“ the stronger the correlation is;
- Negative values stand for indirect correlation of analyzed values, the closer they are to „-1“ the stronger the correlation is;
- Zero represents the independence of variables analyzed.

**Table 4. Correlation coefficients**

<table>
<thead>
<tr>
<th></th>
<th>The Trenčín Region</th>
<th>The Slovak Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI and GDP Correlation</td>
<td>0.79</td>
<td>0.98</td>
</tr>
<tr>
<td>FDI and unemployment rate Correlation</td>
<td>- 0.91</td>
<td>- 0.88</td>
</tr>
</tbody>
</table>

*Source: Own calculation*

Based on correlation coefficients calculated it can be concluded that the situation in FDI has a significant impact on unemployment rate. In Slovakia the correlation coefficient value is -0.88 and in the Trenčín Region the coefficient value is -0.91; both values represent a high negative correlation in social and economic sciences. The higher the figure for FDI placed in a region is the lower the unemployment rate is. FDI belongs to a group of determinants having impact on unemployment rate decrease in a region thus making the region more attractive and more competitive.

A very high correlation is calculated while evaluating the relation between FDI and GDP. In the Trenčín Region the value standing for the correlation coefficient is 0.79; within the entire Slovakia it is 0.98 representing a very high positive correlation. The higher the figure for regional FDI is the higher GDP is produced.

### 4. Discussion

At present the Slovak economy is at the stage of stabilizing the existing FDI that has created its link to the national industry in a form of supplier-purchaser, client relations. Further development needs to be directed inevitably to intensive diversification of FDI placed in different branches and businesses. Especially the FDI needs to be placed in branches and businesses with higher added value. The effectiveness of the Slovak economy has grown lately and is in a direct
correlation with an intensive flow of FDI.

The year 2000 is a turning point in the investment flow as the total FDI flow in Slovakia amounted the total value of all capital inputs invested by foreign investors in the Slovak economy within previous nine years. During the given period direct sales to foreign investors are preferred. After a drop in investment in 2009 due to crisis, there is some progress made again in 2011 when the amount of investment is four times larger than the one in the previous year.

From the allocation point of view the Bratislava Region with its sixty-per cent-share out of total FDI has taken its first position in Slovakia. At the same time the unemployment rate in this region is the lowest, the regional GDP is the largest and the average salary is the highest in this region. The worst situation in FDI flow and in other indicators is reported in the Presov Region.

Quantifying the power of dependence between FDI and GDP or FDI and unemployment rate Pearson correlation coefficient is employed. The results of the correlation analysis prove the existence of mutual relation between FDI and unemployment rate and also between FDI and GDP. A very high negative correlation is proved between FDI and unemployment rate and between FDI and GDP there is proved a very high positive correlation not only in Slovakia but also in the Trenčín Region as well. Foreign Direct Investment is mostly directed to western Slovak regions where the unemployment rate is very low and regional GDP is growing.

References


