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FOREIGN DIRECT INVESTMENT AND ITS IMPACT ON THE SLOVAK REPUBLIC'S ECONOMY

Abstract. This paper deals with the issues of foreign direct investments (FDI) which are currently in Slovakia one of the forms of regional development increasing and disparities reducing what leads to the penetration of foreign capital into Slovak economy through the introduction of new production technologies, know-how, healthy competition creating, effective integration of our economy into the international division of work. Acquisition of new FDI and maintaining existing foreign investors is becoming an important part of a policy aimed at the competitiveness of national economy increasing. When it comes to getting key foreign investors, a country able to attract more investors will win a particularly strong inter-state competition and achieve intense multiplier effect of FDI for the whole economy.
Keywords: foreign direct investment; regional disparities; competitiveness; Slovac economy.
JEL Classification: E22, F21, F43

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ПРЯМІ ІНОЗЕМНІ ІНВЕСТИЦІЇ ТА ЇХ ВПЛИВ НА ЕКОНОМІКУ СЛОВАЦЬКОЇ РЕСПУБЛІКИ
Анотація. У статті розглядаються питання залучення прямих іноземних інвестицій (ПІІ) у Словаччину, які нині є важливою формою підвищення рівня розвитку регіонів та скорочення диспаритету між ними. Проникнення іноземного капіталу в словацьку економіку відбувається через упровадження нових виробничих технологій і ноу-хау, що створює основи здорової конкуренції та ефективної інтеграції в міжнародний поділ праці. Входження нових ПІІ й підтримка існуючих іноземних інвесторів стають важливою складовою політики, спрямованої на підвищення конкурентоспроможності національної економіки. Країна, яка здатна залучити більше ключових інвесторів, перемагає в міждержавній конкуренції в деяких секторах (де це можливо), одержуючи інтенсивний мультиплікаційний ефект ПІІ для економіки у цілому.
Ключові слова: прямі іноземні інвестиції; регіональний диспаритет; конкурентоспроможність; словацька економіка.

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Аннотация. В статье рассматриваются вопросы привлечения прямых иностранных инвестиций (ПИИ) в Словакию, которые в настоящее время являются важной формой повышения уровня развития регионов и сокращения диспаритета между ними. Проникновение иностранного капитала в словацкую экономику происходит через внедрение новых производственных технологий и ноу-хау, что создает основы здоровой конкуренции и эффективной интеграции в международное разделение труда. Вхождение новых ПИИ и поддержание существующих иностранных инвесторов становятся важной частью политики, направленной на повышение конкурентоспособности национальной экономики. Страна, которая может привлечь больше ключевых инвесторов, становится победителем в межгосударственной конкуренции в некоторых секторах (где это возможно), получая интенсивный мультипликационный эффект ПИИ для экономики в целом.
Ключевые слова: прямые иностранные инвестиции; региональный диспаритет; конкурентоспособность; словацкая экономика.

Introduction. Foreign direct investment in the Slovak Republic (SR) has long lagged in comparison to neighbouring countries, mainly because of the political situation. In the early 90s of the 20th century, occurred transformation of the economy from the planned to the market one, even during the existence of Czech-Slovak Federation, requiring a change of attitude to foreign investment. It together with privatization has been a decisive prerequisite to the market mechanisms introduction. That period characterized by FDI inflows associated with the establishment of small and medium-sized enterprises with foreign capital. In the years 1993-1998 after the federation and the privatization of SR was limited, most prosperous businesses were sold to domestic entities; many transfers were associated with tunnelling. Stagnation of the economy after privatization, political and economic instability continued, by reducing of inflows of FDI due to decreased confidence of foreign investors. Major breakthrough occurred in March 1999, when a strategy of foreign investment in SR encouragement was adopted, and SR presented proposal to increase FDI inflows. Watershed year, however, was the year 2000, when there was privatization of strategic enterprises. Visible growth of FDI inflows in Slovakia was in 2000, reached the value of $2.7 billion, which means a place among neighbouring states with

the largest inflow of FDI in the region. This position in FDI inflows Slovakia maintained in subsequent years 2001-2012 reaching from $2.75 billion to $5.85 billion per year.

Brief Literature Review. The issue of investment attractiveness determinants, which is very live at present, is being dealt with in numerous publications of Slovak and foreign authors. The importance of several determinants of investment attractiveness is stressed by A. Bevan (2000, 2004), S. Estrin (2000, 2004) and K. Meyer (2004), who divided them into two basic groups (of political and economic factors) and distinguished between the factors influencing the hosting and domestic economies [1; 2]. The attention of T. Dudas (2004, 2010, 2005) [3; 4; 5] and M. Fabus (2010, 2011, 2012, 2014) [6; 7; 8; 9] is paid to individual determinants and their influence upon the economy's development, the motivation of investors, economic and political conditions creating in the hosting country. Theoretical background of the investment attractiveness investigating and the theories of FDI creation were made by prominent foreign scholars. The most comprehensive is J. H. Dunning's (1979, 2001) eclectic theory based on three categories of factors, which determine decision-making of investors. It is well-known OLI paradigm and the motives which prerequisite investment decision-making are the benefits resulting from the ownership

and ownership rights, advantages from information about the human resources and new information, and the specific benefits resulting from the locality [10; 11]. As for the Slovak authors, we may mention J. Tancosova (2012, 2013, 2014, 2007) [12; 13; 14; 15], S. Ferencikova (2005) [5] and K. Belanova (2014) [16] who analyse the determinants and point at their importance for FDI access. Not to mention the views of T. Dudas (2010) [4] about the importance of labour force and S. Svecova (2012) [12] about the task of education in the structure of workers improving to meet the requirements of the labour force market.

Purpose of the article is to analyse correlation between foreign direct investment in the Slovak Republic and its regions and gross domestic product growth.

Methodology of our research is based at the Pearson correlation coefficient and regression analyses. The Pearson (1896) correlation coefficient is a measure of the linear dependence of two variables. It is used when variables are measured on at least an interval scale. This method is independent of the scale at which variables were measured. Pearson's correlation coefficient p («rho») estimated from the random sample is written r_{xy} and is calculated by the following equation:

$$r_{xy} = \frac{\overline{xy} - \overline{x}\,\overline{y}}{S_x S_y}$$

We assume that the statistical features of character X and Y is a linear relationship, and expresses its course function:

$$y_i = \beta_0 + \beta_{1x1} + \varepsilon_i \text{ , where } i = 1,2,.....n \ (\varepsilon_i - sum\ i)$$

Function parameters express the basis of data from the statistical sample file.

The compensatory function has the form:

$$y'_i = b_0 + b_{1xi} \text{ , where } i = 1,2,.....n$$

The coefficients b_0 and b_1 we deal with the following formulas (Hindls, 2007):

$$b_0 = \frac{\sum_{t=1}^{n} x_i^2 \sum_{t=1}^{n} y_i - \sum_{t=1}^{n} x_i \sum_{t=1}^{n} x_i y_i}{n \sum_{t=1}^{n} x_i^2 - (\sum x_i)^2}$$

$$b_1 = \frac{n \sum_{t=1}^{n} x_i y_i - \sum_{t=1}^{n} x_i \sum_{t=1}^{n} y_i}{n \sum_{t=1}^{n} x_i^2 - (\sum_{t=1}^{n} x_i)^2}$$

The coefficient b1 is called the regression coefficient, if its value is positive we are talking about direct dependencies, if negative, so the inverse. This coefficient indicates how many units of measure the average change in the dependent random variable, if the nondependent random variable changes by one unit of measure [17].

Results and Discussion. Foreign direct investment is defined as long-term investments by foreign direct investor in an enterprise resident in another (foreign) economy, where it is established by a foreign investor. Relationship of FDI consists of a parent company and foreign affiliates, which together form a transnational corporation (a multinational company).

The main feature of FDI is to exercise ownership control. By definition of the U.S. government, FDI are regarded only in case of at least 10% share purchase in a joint stock company or an equivalent interest in another type of company.

GDP is the key indicator of the country's economy. The examination is based on the timing of two variables: GDP growth in percent's over the previous year and the inflow of FDI into the economy in millions US dollars.

Foreign direct investment is important factor in regional disparities reducing. However, it is unevenly distributed in different regions of Slovakia. Bratislava region is dominated by the inflow of FDI in the period 1993-2013; it received 44% of total investments. In the second place was Trnava region with 20%. 11% of total FDI inflows received Trencin, Zilina got 10% and shall be followed by Kosice region with 6%. The least during this period gained Banska Bystrica, Presov and Nitra regions, which awoke little interest among foreign investors (4%, 3% and 2%).

To investigate the relationship between FDI inflows and GDP, we applied time series from 1998 to 2012, whereas the data on the inflow of FDI at the regional level from the years 2013 and 2014 are not yet available. Just a longer time series analysis allows understanding the evolution and trends of foreign direct investment on regional disparities.

Data were obtained from statistical databases of the National Bank of Slovakia, regional statistical database and the Statistical Office of the Slovak Republic. To determine the degree of dependence of labour force between the two quantitative variables, we used the correlation coefficient, which shows volumes about the strength but also the direction of the linear dependence, which can take values from the interval <-1,1>.

We will introduce only some of all regions of the Slovak Republic, which will be Bratislava region, Zilina region, Banska Bystrica region and Presov region.

Correlation between FDI and GDP in Bratislava region was found with strong direct linear relationship, namely, FDI is significant to GDP growth in the region. In this region is the lowest positive regression coefficient of the linear model. GDP and average salaries of Bratislava region is to highest of all Slovakia regions.

Figure 1 presents the positive impact of FDI inflows on regional GDP in Bratislava region. This means that the relationship between FDI inflows and economic growth in Bratislava region is slightly positive. If FDI inflows are worth EUR 1 million, GDP will increase by EUR 1.012 million.
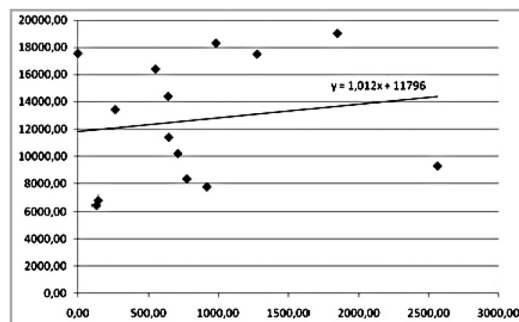

Fig. 1: **Linear regression line of relative GDP and FDI inflows, Bratislava region**
Source: Own proceeding

By the analysis of Zilina region, we have confirmed that there is a direct dependence between GDP and FDI (Figure 2). The regression analysis shows that increase in FDI for EUR 1 million would translate into economic growth by EUR 11.120 million. Correlation between FDI and GDP confirmed that there is a strong direct linear relationship and the growth of GDP accounted for most FDI in Zilina region. We showed that in the Zilina region has managed to raise the economic level of the region FDI inflows where mainly investors in automotive sector and their subcontractors are located.

Regression analysis in Presov region also confirmed our mutual positive relationship on observed indicators (Figure 3). When a foreign investor invests in Presov Region EUR 1 million, regional GDP in the same year will grow by EUR 40.38 million.
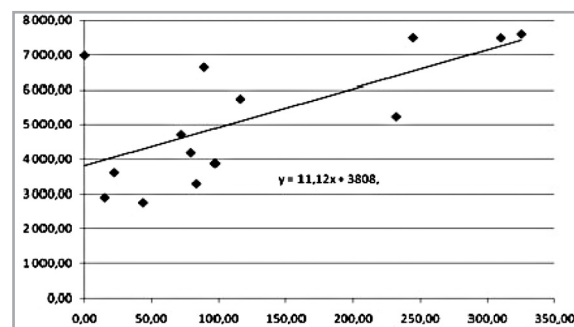

Fig. 2: **Linear regression line of relative GDP and FDI inflows, Zilina region**
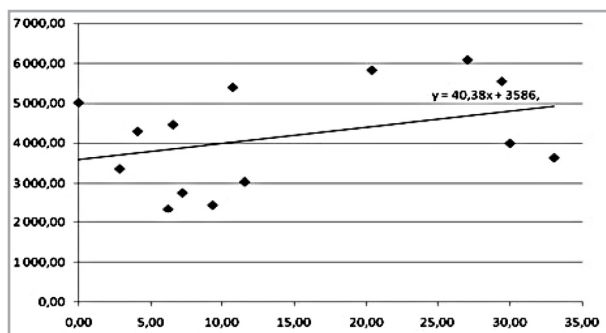*Source:* Own proceeding

Fig. 3: **Linear regression line of relative GDP and FDI inflows, Presov region**
Source: Own proceeding

This region counts to less developed in Slovakia. We confirmed that the correlation in the Presov region is a direct linear relationship between FDI and GDP.

Based on the empirical group, which consists of two values, where X (FDI inflow in million EUR) which is the independent variable, and Y (GDP in EUR million) which is the dependent variable, correlation analysis of Banska Bystrica region is 0.467 (Figure 4). This shows moderate interdependence between both indicators. The regression analysis shows that the increase in FDI of EUR 1 million would translate into economic growth by EUR 6.403 million. Regression line confirmed the relationship between FDI inflows and economic growth in Banska Bystrica region, which is moderately positive. It means that FDI contributes to regional economic growth.
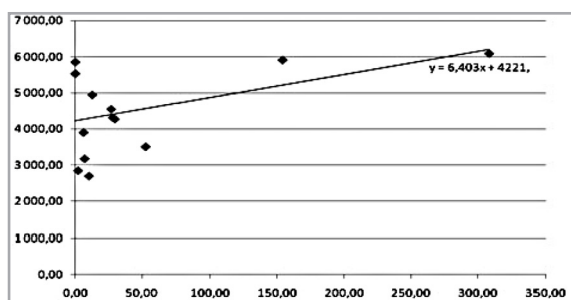

Fig. 4: **Linear regression line of relative GDP and FDI inflows, Banska Bystrica**
Source: Own proceeding

Using correlation analysis, we determined the interdependence between the impact of FDI inflows to GDP in each region at NUTS 3 (Nomenclature of Territorial Units for Statistics) the growth of one variable increases the value of the other variable. All regions, except the Kosice region (-0.172 reached after analysing the n+1), achieved a direct correlation between the two indicators. High dependence of two variables was confirmed in central and western Slovakia, the smallest in the east Slovakia. In the second step, we used regression analysis and examined the relationship between indicators quality. Using the regression analyses, we confirmed high impact of inflows of FDI on economic growth in all regions of Slovakia.

We can say that foreign direct investment before the crisis increased on the volume and strength. They are a measure of the country's rating, its political and economic stability. There is no doubt that foreign direct investments contribute to the modernization of enterprises to increase product quality and, now, services, and productivity growth. At the same time, they help to bring new knowledge in the field of technology, know-how, marketing, management, corporate culture. The investment climate in Slovakia is supported by the state, and virtually there are no barriers to foreign investors.

Slovakia has an open, export-oriented economy with a small domestic market and limited material resources. The advantage is membership in the EU, OECD, IMF, WB, WTO and other international economic institutions that allow the Slovak Republic to exploit the potential of economic growth and competitiveness in a global environment. Key source of economic growth and inno-

vation performance of SR are the foreign direct investment. Slovakia is located in Central and Eastern Europe, which means its economy is forced to compete for foreign investment with other economies in the region, especially with the Czech Republic, Hungary and Poland. Slovakia can offer lower transaction costs, based at integration to the Eurozone, entry into the Schengen Area, political stability, introduction of euro, favourable investment and tax conditions, skilled workforce, low labour costs.

Conclusion. The analysis of the Pearson correlation coefficient of each region confirmed the assumption that in the Slovak Republic the foreign direct investment directly affects the development of the GDP growth. While by the regression analysis we were able to point out a strong dependence on foreign investment in Slovak economy, it does not mean that FDI inflows into Slovakia have only positive effects. We have to take into account that there are more analyses to be made to show the impact of foreign direct investment to other macroeconomic indicators, such as employment and others.

Comparing the development of foreign direct investment in the regions of Slovakia, we pointed out that the increased influx occurred after the stabilization of the political and economic situation in 2000. Development in different regions is not uniform. It is clearly that FDI are concentrated in Bratislava region, which is primarily the result of a highly skilled workforce, the best infrastructure, but it is also due to the fact that some businesses that create added value in another county are located in Bratislava region, where the company results are ultimately counted. In Bratislava region up to 63% of foreign direct investment is concentrated, which is on average 10 times more than in any other region of Slovakia. Incentives operating in the country through two ways of promoting investment environment, namely: EU structural funds which are translated directly to support small and medium enterprises, and development of infrastructure and manpower as well as other forms of state aid for the strategic investors at the regional level. Regional differences still persist and even public support for the FDI location in lagging regions is not fulfilling. Promoting foreign direct investment should be directed in particular to the areas with the highest unemployment rate and low GDP per capita. The situation is exactly the opposite, as the largest share of FDI is in the region with the lowest unemployment and the highest value of GDP per capita.

The problem of uneven regional distribution of foreign investments is also lagging less developed regions and especially central and eastern Slovakia, which is mainly due to the fact that foreign investors prefer regions with developed infrastructure.

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ГАЛУЗЕВЕ ПОЗИЦІОНУВАННЯ ЗЕРНОПРОДУКТОВОГО ПІДКОМПЛЕКСУ АПК УКРАЇНИ

Анотація. У статті визначено фактори, що актуалізують перспективність виробництва зерна в Україні, та наголошено на відсутності системної політики держави у цій галузі, незважаючи на її потенціал. Проведено аналіз діяльності організаційних структур і міжгосподарських зв'язків на ринку зерна й продукції його переробки, а також окреслено межі зернопродуктового підкомплексу АПК відповідно до сучасних стандартів статистичної звітності та законодавчих актів. Запропоновано визначення цього підкомплексу АПК для систематизації подальших досліджень.

Ключові слова: зернопродуктовий підкомплекс АПК; зерновий ринок; виробництво зерна; переробка зерна; елеваторна промисловість.

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BRANCH POSITIONING OF GRAIN PRODUCTS SUBCOMPLEX IN UKRAINE'S AIC

Abstract. Modern economic and political challenges require from Ukraine its resource mobilization and fast system changes, and the grain industry has all chances to be the exports locomotive and source of foreign exchange for the country. In addition, grain production forms a system effect, as it is a raw material for many other industries. In the article, factors that actualize grain production prospectivity in Ukraine are defined, and lack of states' system policy in this area is emphasized, despite its potential. The evolution of institutional changes in Ukraine led to enterprises' unclear positioning at the grain market and its processing products in inter-industry links system. Different interpretations of the structural and functional providing of grain production sub-complex of AIC do not create conditions for fundamental theoretical researches. The analysis of the organizational structures activity and inter-farm connections for grain market and its processing products, allowed us to determine the grain production of AIC limits in Ukraine according to modern statistical reporting standards and legislative regulation. It includes a set of functionally dependent agricultural and industrial enterprises that ensure the grain supply formation, its primary machining, storage and processing into flour, cereals, mixed fodder, as well as sales, including exports, through the mediocre participation of relevant infrastructure elements and as a raw materials source for the enterprises of specialized food producing industries. Subsequent system studies should provide a balanced development of all identified components of the sub-complex towards improving quantitative and qualitative indicators of its functioning.

Keywords: grain production sub-complex of AIC; grain market; grain production; grain processing; elevator industry.

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ОТРАСЛЕВОЕ ПОЗИЦИОНИРОВАНИЕ ЗЕРНОПРОДУКТОВОГО ПОДКОМПЛЕКСА АПК УКРАИНЫ

Аннотация. В статье определены факторы, которые актуализируют перспективность производства зерна в Украине, и отмечено отсутствие системной политики государства в этой отрасли, несмотря на ее потенциал. Проведен анализ деятельности организационных структур и межхозяйственных связей на рынке зерна и продукции его переработки, а также обозначены границы зернопродуктового подкомплекса АПК согласно современным стандартам статистической отчетности и законодательных актов. Предложено определение данного подкомплекса АПК для систематизации дальнейших исследований.

Ключевые слова: зернопродуктовый подкомплекс АПК; зерновой рынок; производство зерна; переработка зерна; элеваторная промышленность.