The Impact of FDI on Lithuanian Economics

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Abstract: - The scientific literature emphasizes that FDI can cause not only economic growth, but also economic suppression. This article is aimed at the research of the impact of FDI on Lithuanian economics by analysing the changes of three main macroeconomic indicators – GDP, unemployment rate and export. The methods of the research include systematic analysis of the scientific literature, statistical data analysis and correlation regression analysis. The results of the research have revealed that, in Lithuanian case, there exists strong correlation between FDI and GDP as well as between FDI and export. The correlation between FDI and unemployment rate is very weak, although there is a tendency that increasing income from FDI contributes to unemployment rate decrease since FDI determines creation of work places and development of industrial processes.

Key-Words: - Foreign direct investment, FDI impact, economics, macroeconomic indicators, Lithuania

1 Introduction

During the recent decades, the process of globalization has caused the growth of foreign direct investment (FDI) all over the world [16, 5]. According to the statistics, announced by the United Nations, global flow of foreign direct investment (FDI) increased by 11 per cent from 2012 to 2013 [22]. Generally, this is considered as a positive trend since the growth of FDI is one of the main determinants of the economic development of the host countries (creation of new workplaces, implementation of new technologies, accumulation of technical experience and so forth) [2, 5, 7, 17, etc.]

Scientific literature is rich in the research on the impact of FDI on the economics of different countries. In this case, GDP is used as one of the main factors that reflect the impact of FDI on economic growth [4, 12, 17 and others]. However, it is argued that FDI is not a single factor causing the rise of GDP in the country - the latter might also be influenced by other quantitative and qualitative economic or non-economic factors - economics of the foreign countries, labour resources, changes of wages, fiscal policy, etc. [7]. What is more, foreign and Lithuanian scientific research [18, 2, 12] emphasizes that FDI can cause the negative impact on the host country's international trade balance and the structure of employment (overcrowded city zones, worse regional situation, etc.). This has determined **the aim of this article** – to research the impact of FDI on Lithuanian economics by analysing the changes of three main macroeconomic indicators – GDP, unemployment rate and export during the period of 2007 - 2013. This research is considered to be extremely purposeful while seeking for the full-fledged country's participation in the process of international capital flow. The aim has been detailed into the following **objectives**: 1) to present the theoretical background of the FDI impact on economics; 2) to present the methodology of the research; 3) to carry out the research of FDI correlation with appropriate Lithuanian macroeconomic factors. **The methods** of the research include systematic analysis of the scientific literature, data systematization, grouping, comparison and summarizing, statistical data analysis and correlation regression analysis.

2 Theoretical Background

Economic impact of FDI on economics of the country, in any case, appears as the changes in the structure of the whole economics as well as in particular industries regardless of whether foreign capital pushes out local enterprises, seeks to monopolize or oligopolize the market, develops activities cooperating with local business or not. The scientific literature reveals bidirectional (positive and negative) effect of FDI on economics. With

reference to the research carried out by Stankaityte and Pikturnaite [21], it can be stated that foreign investment in Lithuania efficiently promotes country's export, creates new workplaces and makes conditions for successful business competition under free market conditions. According to Habib and Sarwar [9], FDI increases employment opportunities, which has the direct impact on economic growth of the country; also, economic growth influences GDP per capita, which means that life standards and prosperity are increasing. Economic growth and higher life standards promote economic development, which leads to industrialization and helps to attract FDI, and this is a repetitive cycle [9]. Thus, FDI helps the country to improve its current account balance and strengthens the positions in international capital markets [20].

On the other hand, some authors [8, 4, 5, 6] note that large flows of FDI not always ensure the development of economics. First of all, foreign companies often operate in the industries with high entrance barriers which can even be heightened by FDI. This enables foreign capital enterprises to earn additional economic rent and transfer it to the country of the capital origin, which determines the slowdown of the host economics. Moreover, capital flows can cause the increase of consumption in the host country, which determines increasing imports and inflation. Also, FDI can cause the negative balance of the foreign trade as well as government's dependence on foreign investors and industry's technological dependence on the subject that provides foreign investment [2, 12, 18].

The links between FDI and GDP. What considers the economic indicators affected by FDI, it should be noted that scientific literature is rich in the studies to research GDP as the main factor that reflects the impact of FDI on economics. According to Pradeep [17], FDI impact on GDP is direct, thus, FDI and GDP undoubtedly correlate. However, Freckleton et al. [7] indicate that FDI can promote economics both directly and indirectly, so FDI in the host country is not a single economic factor that causes the rise of GDP, but the latter can be influenced by other quantitative and qualitative economic or non-economic factors such as economics of the foreign countries, labour resources, changes of wages, fiscal policy, etc. GDP is usually engaged to explain the impact of FDI on the economic growth of the host country. Kuliaviene and Solnyskiniene [12] agree that FDI not only has a positive impact on GDP but also creates new workplaces and enables to implement the newest technologies and technical experience, which also contributes to GDP growth.

The links between FDI and export. With reference to Head and Ries [10], the majority of the studies reveal the positive link between FDI and export since the countries that import goods willingly host FDI as the basis for trade. According to Laskiene [13], FDI promotes export acting as a network system: local companies get opportunities to use multinational nets, this way providing themselves with the information necessary for export. Zhang [23] notes FDI promotes export by facilitating access to new foreign markets, transfer of new technologies and new product export development; it also contributes to the renewal of the technical skills acquired by the labour force.

Nevertheless, FDI impact on the host country's international trade balance is not unambiguous. Although FDI enables to increase export volumes, the flows of import to the country increase as well. According to Krstevska and Petrovska [11], companies with export-oriented FDI income have the positive impact on the trade balance whereas the ones with import-oriented income have the negative impact on the economics of the country.

The links between FDI and unemployment. Unemployment is defined as the situation when a part of the people in the country do not have a job, cannot work or want to work but cannot find a job [16]. Some authors [1, 3] state that FDI has both positive and negative effect on unemployment rate. According to Rupliene and Montvilaite [19], "one of the main factors that determines investment return is labour force" (p. 272). In opened economies, the problems of unemployment can be solved engaging FDI since it enables to create employment opportunities in different sectors [16]. With reference to Laskiene and Pekarskiene [14], FDI not only increases local capital, implements new technologies and knowledge, but also promotes creation of new work places. Balcerzak and Zurek [3] also note that FDI has strong positive impact on labour market since it decreases unemployment rate. Thus, political decisions are often directed towards the attraction of more foreign investors.

The research carried out by Aktar and Ozturk [1] revealed the negative links between FDI and unemployment. Such attitude is based on the fact that many international corporations transfer from low-tech to high-tech industries. The authors state that FDI attraction can overcrowd city zones and worsen regional situation. What is more, FDI can push out local manufacturers.

Summarizing, it can be stated that the scientific literature analyses the impact of FDI on host country's economic growth from the theoretical aspects which are typical of Lithuanian economics.

Economic growth is usually explained through GDP and export increase as well as better use of the labour force.

3 The Methodology of the Research

The research was carried out applying linear regression analysis. This method was selected for the research since it not only enables to evaluate the strength of the links between the variables but also is suitable for making prognosis on their dynamics in the nearest future.

The calculated linear regression coefficient r varies between $-1 \leq r \leq 1$. When $r_{xy} > 0$, correlation is positive; thus, when value X is increasing, value Y is also increasing. When $r_{xy} < 0$, correlation is negative; thus, when value X is increasing, value Y is decreasing. When $r_{xy} = 1$, all values of the observants coincide with the straight line (functional dependence). When r_{xy} is close to 0, X and Y do not correlate.

Determination coefficient R^2 shows what percentage of Y variance (in relation to the average) can be evaluated applying linear regression between Y and X. When $0< R^2<1$, the higher is value R^2, the better designed is the model. Statistical hypotheses were verified and the intervals of reliability were estimated applying t (Student's) criterion.

4 The Results of the Research: FDI Correlation with Macroeconomic Factors

Correlation between FDI and GDP. The results of the research have revealed that the stable Lithuanian economics and increasing GDP contribute to foreign investment including FDI, which in turn, has the positive impact on GDP (see Fig. 1).

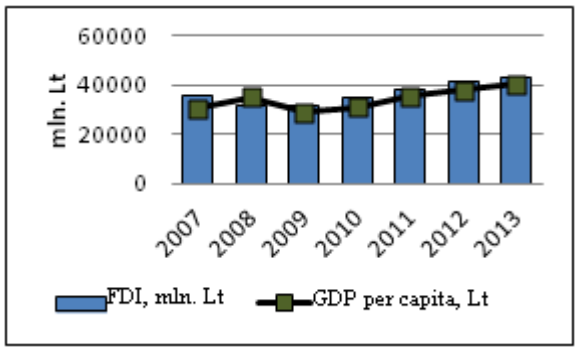

Fig. 1. FDI and GDP per capita dynamics during the period of 2007 – 2013 in Lithuania (compiled by the authors with reference to the data of Lithuanian Department of Statistics [15])

As it can be seen in Fig. 1, FDI decreased by 10 per cent during the period of 2007 – 2013, but later it increased by almost 20 per cent while GDP per capita reached its peak in 2008, making 35 million Litas, but decreased by almost 17 per cent in 2009, and increased by almost 32 per cent in 2013. In 2013, the growth of FDI was not so fast: the investment in engineering construction and non-residential buildings started to decrease. In 2012, the ability of Lithuanian companies to compete in international markets as well as the record high agricultural yields determined the rapid growth of GDP. The correlation regression analysis was engaged to establish whether FDI correlates with GDP (see Fig. 2).

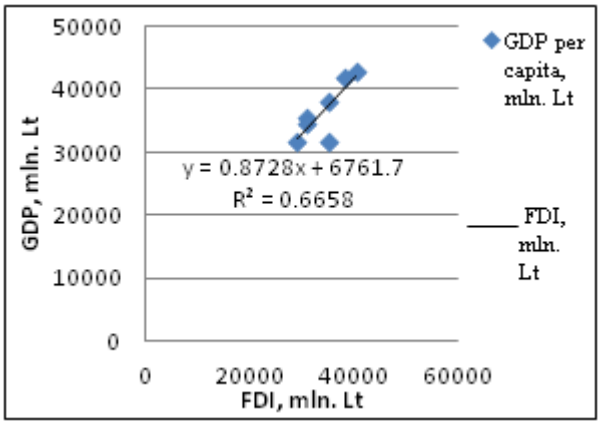

Fig. 2. Correlation between FDI and GDP per capita (compiled by the authors with reference to the data of calculations, 2014)

The correlation coefficient equal to 0.82 shows that FDI and GDP strongly correlate. The determination coefficient shows that FDI has 67 per cent of the impact on GDP while the rest 33 per cent of the impact is determined (especially in the second half of 2013) by the upsurged domestic demand: fast growing household consumption and increased investment. Standard deviation is not high (2639.68); thus, the observants have scattered along the regression line which proposes that the increase of FDI should determine that of GDP. Since $t_{calculated}$ (3.16)> $t_{critical}$(2.5706), the value of correlation coefficient, i.e. the correlation between FDI and GDP, is statistically significant.

Summarising, it can be stated that the analysis of the interrelation between FDI and GDP has confirmed that, in Lithuanian case, there exists strong correlation between FDI and GDP growth. It should be noted that production decrease determines smaller amounts of investment whereas the

decreased investment reduces the volumes of production and GDP even further.

Correlation between FDI and export. Under the conditions of globalization, international capital is increasingly exported and imported in the form of foreign investment [6], which proposes that FDI has the direct impact on the export volumes. The dynamics of Lithuanian export during the period of 2007 – 2013 has been presented in Fig. 3.

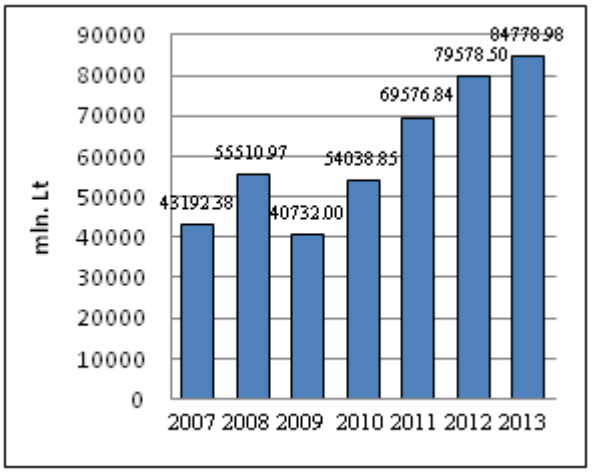

Fig. 3. The dynamics of Lithuanian export during the period of 2007 – 2013 (compiled by the authors with reference to the data of Lithuanian Department of Statistics [15])

As it can be seen in Fig. 3, the volumes of export rose by 28 per cent and made almost 60 million Litas from 2007 to 2008. However, in 2009, the export shrank by 26 per cent, which can be related to the economic decline in the EU and other countries. From 2010 to 2013, Lithuanian export shows positive tendencies with the increase of 56 per cent. Such jump in export volumes could have been determined by such factors as refusal of the saving measures, changes of global prices, production capacity increase and European economic revival. The correlation analysis has enabled to establish whether FDI has the impact on the volumes of export (see Fig. 4).

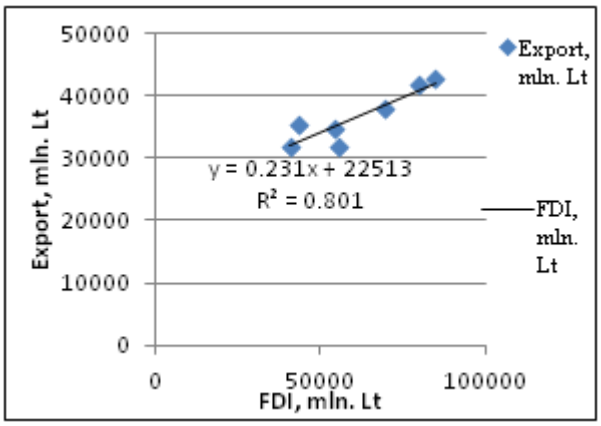

Fig. 4. Correlation between FDI and Lithuanian export (compiled by the authors with reference to the data of calculations, 2014)

The correlation coefficient is equal to 0.895, which shows that FDI and export strongly correlate. The determination coefficient is equal to 0.801, which proposes that FDI influences export by 80 per cent while the rest 20 per cent of the influence is determined by other factors. Standard deviation is not high (8441.15); thus, the observants have scattered along the regression line, which proposes that the increase of FDI should determine that of export. Since $t_{calculated}$ (4.487)> $t_{critical}$(2.5706), the value of correlation coefficient, i.e. the correlation between FDI and export, is statistically significant.

Summarizing, it can be stated that the analysis of the interrelation between FDI and export has revealed that FDI and export show strong direct correlation. However, the volumes of export can be also influenced by the other factors that are related to the shrinkage of foreign markets, which causes difficulties for domestic enterprises to compete in international markets.

Correlation between FDI and unemployment. Unemployment rate is determined by the economic situation of the country when work places are created or eliminated. Also, unemployment can be treated as an inefficient use of one of the main production resources. Unemployment rate is important for investors since it shows the stage of the business cycle. The dynamics of FDI and unemployment rate in Lithuania during the period of 2007 – 2013 have been presented in Fig. 5.

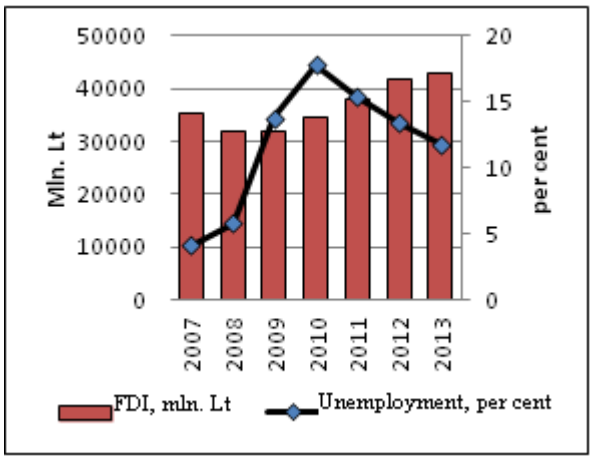

Fig. 5. FDI and unemployment rate dynamics during the period of 2007 – 2013 in Lithuania (compiled by the authors with reference to the data of Lithuanian Department of Statistics [15])

As it can be seen from Fig. 5, FDI and unemployment rate have opposite trends: while FDI is decreasing, unemployment rate is rising and vice versa. Unemployment rate in Lithuania slightly increased (only by 1.6 per cent) during the period of 2007 – 2008 whereas the increase was rather high (by 12 per cent) during the period of 2008 – 2010. From 2010 to 2013, it was gradually decreasing, and made 11.8 per cent in 2013. This gradual unemployment rate decrease could have been determined by the revival of Lithuanian economics that promotes investment in new work places. Lithuania is the only country in Central and Eastern Europe (CEE), where foreign investors created more work places in 2013 in comparison to 2008. In other CEE countries, the investment in new work places at the same period significantly shrank and has not still reached the pre-crisis level. It may propose the growing attraction of Lithuania to foreign investors, especially in the recent years, when more and more new investors discover the country, and the previously established ones appreciate the advantages of the country.

For the establishment of the links between FDI and unemployment rate, the correlation analysis was performed (see Fig. 6).

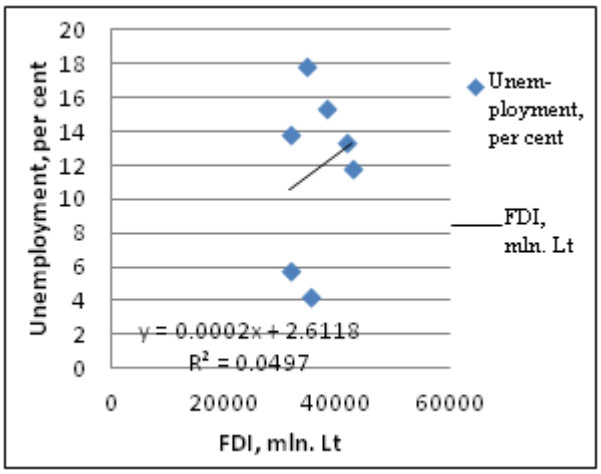

Fig. 6. Correlation between FDI and unemployment rate (compiled by the authors with reference to the data of calculations)

In this case, the correlation coefficient is equal to 0.223, which shows very weak correlation between FDI and unemployment rate. The determination coefficient is equal to 0.050, which proposes that FDI influences unemployment rate only by 5 per cent while the rest 95 per cent is influenced by other factors. Standard deviation is rather high (5.326); it means that the observants have scattered further from the regression line, which proposes that the increase of FDI does not determine that of unemployment rate. Since $t_{calculated}$ (0.050)< $t_{critical}$(2.5706), the correlation coefficient is not significant, and additional data is necessary for further analysis of the links between these two variables.

Summarising, it can be stated that the correlation regression analysis has revealed a very weak correlation between FDI and unemployment rate. However, one tendency has been observed: when FDI income increases, unemployment rate decreases because FDI determines creation of work places and development of industrial processes.

5 Conclusion

The analysis of the scientific literature has revealed that the impact of FDI on the economics of the host country is studied engaging such macroeconomic indicators as GDP, export and unemployment rate.

With reference to the results of the empirical research, it can be stated that:

1) Lithuanian economics shows strong correlation between FDI and GDP growth during the period of 2007 - 2013. It should be noted that the decrease in production determines smaller amounts of investment whereas the decreased investment reduces production and GDP even further;

2) FDI and export show strong direct correlation during the period of 2007 - 2013. However, the volumes of export can be also influenced by the other factors that are related to the shrinkage of foreign markets, which causes difficulties for domestic enterprises to compete in international markets;

3) the correlation between FDI and unemployment rate during the researched period is very weak. However, there is a tendency that increasing income from FDI contributes to unemployment rate decrease since FDI determines creation of work places and development of industrial processes.

It should be noted that the calculations performed for this research did not include the possible impact of inflation on the volumes and dynamics of the researched variables, which is considered to be the main limitation of the research. In order to get more accurate results and make comparisons, future research on the similar topic should be performed considering the impact of inflation on the volumes and dynamics of FDI, GDP, export and unemployment rate.

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