WHAT ADDS MORE TO THE ECONOMIC GROWTH IN DANUBE REGION – FOREIGN OR LOCAL DIRECT INVESTMENT?

Kamelia Assenova
Ruse university, Republic of Bulgaria, kamelia_a@yahoo.com

Abstract: The main objective of regional economic development is the achievement of high economic growth. The Danube region includes 11 districts in the North Bulgaria. This region has a Gross domestic product(GDP) per capita lower than the national average. It requires advance development, with rate higher than the average for the country. It will reduce economic imbalances compared to other regions in country in the future.

The previous research of same author [65] found the main factors for advancing development of Danube region in Bulgaria. They are investments, average population and educated part of it. The economic analysis notes strongest impact of investments in the region on the aggregate supply, measured with GDP The investments have two effects: direct- increasing the aggregate demand and there for aggregate supply for current year and indirect - additional multiple effects on the aggregate demand and the GDP. The direct investment in the industries could be foreign and local. It creates mathematical model to measure the impact of foreign and local investment on GDP. On the second stage is calculated the effect of one new BGN investments – foreign or local to GDP. The research found foreign investments have stronger and multiplier effect and add more to GDP compare with local Bulgarian investments.

Keywords: economic growth, factors of economic growth, regional development

1. INTRODUCTION

In the economic development in Bulgaria are observed regional imbalances. They comes from historically shaped differences in social processes (social, economic, managerial) in individual regions. In this way, imbalances are observed in GDP per capita, distribution of investments, the age and educational structure of the population, the level of employment (unemployment), income per capita. For this reason, the main objective of regional economic policy is overcoming the imbalances and ensure advancing development for less developed regions in order to make equally good living conditions in all parts of the country.

The main objective of economic policy over all in Bulgaria is achieving high growth. The Danube region includes 11 districts in the North Bulgaria. The Danube region has GDP per capita lower than the national average. It requires advancing development, higher than the average for the country to reduce and eliminate imbalances compared to other areas in the future. Achieving of this goal can be realized by utilizing the region's existing human, natural, capital and institutional resources, as well as the region's comparative advantages over others (by Samuelson).

2. MODEL

2.1 It creates model with the factors of economic growth according Solow.

The baseline model is following:

$$GDP = ß_0 + ß_{11} x_{11} + ß_{12} x_{12} + ß_{21} x_{21} + ß_{22} x_{22} + e_{i,t} \tag{1}$$

Where

GDP – Gross Domestic Product annually for the region

x_{11} – direct foreign investments annually for the region

x_{12} - direct local investments annually for the region

x_{21} - population annually in the region

x_{22} – citizens graduated less primary school annually for the region

The aim of model is calculating the impact of different factors of growth. By the previous research of same author (already cited), the influence of investments are strongest compared with other factors. Now it is investigated separately the impact of foreign and local direct investments on GDP.

a. On the next stage, it measured ΔGDP by 1 BGN new foreign, respectively local direct investments. The purpose is the calculation of the efficiency of foreign and local direct investments. It calculated with:

$$E = \frac{\Delta GDP}{\Delta FDI} \tag{2}$$

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Where
GDP – Gross Domestic Product annually for the region
FDI – direct foreign investments annually for the region

$$E = \frac{\Delta GDP}{\Delta LDI}$$

(3)

Where
GDP – Gross Domestic Product annually for the region
LDI – direct LDI investments annually for the region
The research investigates Danube region in Bulgaria for the period 2005-2018.

3. LIMITATIONS OF THE RESEARCH

- Because the different way to be made the data by National statistic – with or not accumulation, monthly, quarterly or annually, chronologically presented – the different variables are recalculated to be mathematically compatible;
- The research recognizes the primary factors capital and labour force.
- The foreign direct investments deliver to the economy more innovative technology and techniques, new approach for education and management of human resources. The foreign direct investments are recalculated in BGN.
- The local direct investments add more resources for technological and technical improvement of industry.
- From the population depends on disposal labour force in the region. Unfortunately, the part of population in the region migrates to main sites of the region and abroad.

4. DATA ANALYZE

The foreign direct investment has pick in 2013. After it they reduce with small pace. For the period 2015-2018 they increase continually for Danube region. The local investments depend on the accumulation of capital in the country. The liabilities of banks show enough disposal resources to invest in the economy. The data shows high negative change of local direct investments in the region in 2016 compared with previous year. In 2017 tendency continues. In 2018 is found small positive change. The impact on GDP of local direct investments are lower compared with foreign.

Graph 1

Foreign and local investments for Danube region for period 2005-2018 (thousand BGN)
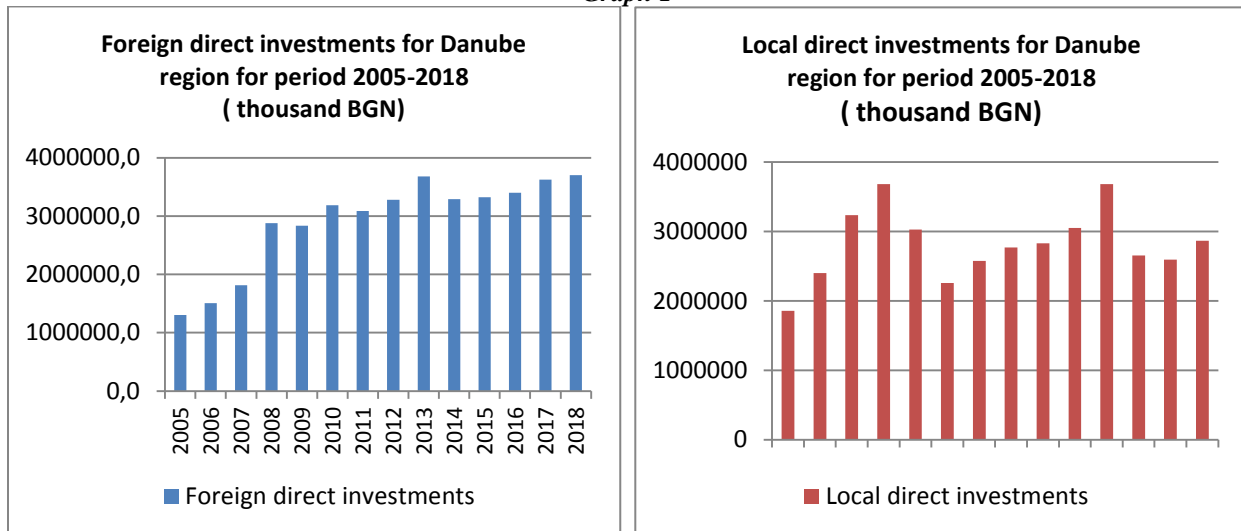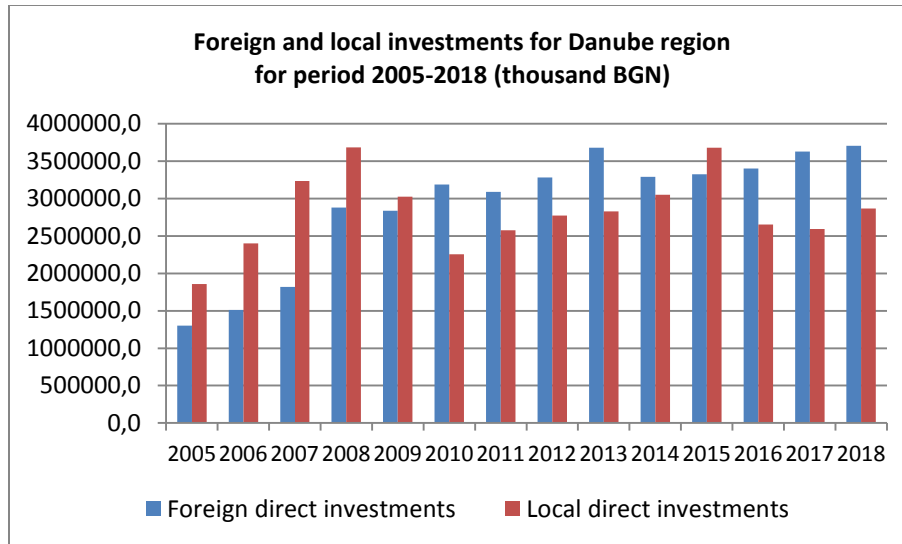
Source: National statistic

5. RESULTS

On Tab. 2. Model Summary is given the coefficient of determination of the multifactorial regression model. As expected, the coefficient is $R^2 = 0,972$, which means almost a functional link. Also, the coefficient is statistically significant (Table 3, Sig. $< \alpha = 0,05$).

Table 2

odel Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986ª	.972	.958	376.96427

a. Predictors: (Constant), Cgrless PS, LDI, AvPopulation, FDI

In the Table 3. Coefficients - are defined the standardized coefficients for the multifactor regression model for each factor of economic growth.

Table 3
Coefficientsª

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21349.387	3693.624		5.780	.000
	FDI	.001	.000	**.541**	4.188	.003
	LDI	.001	.000	**.160**	2.488	.038
	AvPopulation	-.008	.002	**-.625**	-5.391	.001
	Cgrless PS	.082	.029	**.268**	2.869	.021

a. Dependent Variable: GDP

The statistical analysis shows the coefficient of determination for foreign and local direct investments is significant. The economic analysis notes strongest impact of investments in the region on the aggregate supply measured with GDP. The investments have two effects: direct-increasing the aggregate demand and there for aggregate supply for current year and indirect - additional multiple effects on the aggregate demand and the GDP in next several years. The capital expenditure, because long duration of each stage of their turnover, retains the impact on the aggregate demand and therefore on the GDP for long period of time. As known from the theory, as a result - income increases and employment reduces not only in sectors, where the capital spending made, but in others. It leads to an increase of aggregate demand, not only through investment (I), but also indirectly through the consumer spending (C).The correlation coefficient of foreign direct investments, calculated for the region is stronger than for local and

probably shows foreign direct investments add more to GDP, because better management, nowadays technology and techniques. The higher income paid in foreign companies adds to multiply effect of these investments through consumption.

Graph 2
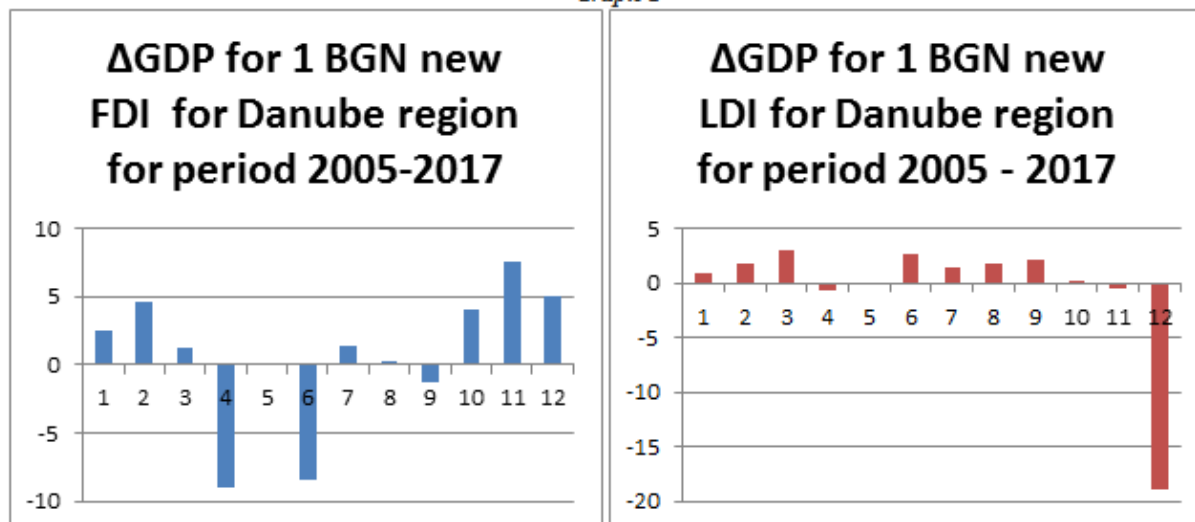
ΔGDP for 1 BGN new FDI average for the period is 0.6958 and for local is minus 0.5220. The efficiency of foreign direct investments vary from +7.5865 for 2016 to – 8.9585 in 2009 during the crises. The local direct investments change from +3.06 for 2008 to -18.855 for 2017. For last year in the period is found ΔGDP for 1 BGN local investment is high negative, because fast increasing of GDP in the region by negative change in local investments. The local GDP rises with 1152 mil. BGN and at same time there is negative change of LDI.   It means ΔGDP is depends on other factors in this period of time. They are factors of intensive growth as productivity, reducing the recourse and energy consumption in the business, improving of management and finally more efficiency in the economy.

6. CONCLUSION

The economic development of Bulgaria's characterizes by strong regional imbalances. They comes from historically shaped differences in the development of social processes (social, economic, managerial) in individual regions. In this way, imbalances are observed in GDP per capita, distribution of investments, the age and educational structure of the population, the level of employment (unemployment), income per capita. For this reason, the main objective of regional economic policy is overcoming the imbalances and ensure advancing development in order to make equally good living conditions in all parts of the country.

The previous research of same author [66] found the main factors for advancing development of Danube region in Bulgaria. They are investments, average population and educated part of it. The economic analysis notes strongest impact of investments in the region on the aggregate supply, measured with GDP. By structural analyzes of investments, the correlation coefficient of foreign direct investments, calculated for the region is stronger than for local and probably shows foreign direct investments add more to GDP, because better management, nowadays technology and techniques. For 1 BGN new foreign investments add more to GDP compared with 1 BGN new local. It required to be stimulated foreign and in the same time to increase efficiency of local direct investments. It will be strong instrument to overcome regional imbalances.

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