Does the gross fixed capital formation represent a factor for supporting the economic growth?

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Abstract: *The present study aims to show an analysis of relationship between gross fixed capital formation[1] and economic growth in Romania, Bulgaria, Czech Republic, Poland and Hungary for the period 2003-2009.*

For this, the statistical connection analysis method is applied. The used variables are: the economic growth (gross domestic product - GDP) – considered dependent variable and the gross fixed capital formation (GFCF) – considered independent variable.

This workpaper uses the quarterly of GDP and GFCF, considering the period from the last quarter of 2003 until the last quarter of 2009. That analysis indicates the relation between those two indicators separately for each country in order to draw a conclusion regarding the role of GFCF to the growth and development of the Central and Eastern Europe (*CEE) countries and as well as its contribution to the formation of GDP.*

Using this data, we appy the correlation analysis to verify the existence of the connection between two macroeconomic indicators. The obtained results show a direct and strong connection between economic growth and gross fixed capital formation, relation which is expressed by correlation coefficient with a level very close to the value of 1 for Romania, Bulgaria, Czech Republic and Poland .

The conclusion is that the level of the between gross fixed capital formation may influence in the positive way the economic growth, in Romania, Bulgaria, Czech Republic and Poland

Key words*: macroeconomics, growth, gross fixed capital formation, gross domestic product, the correlation*

JEL classification*:* E00, E01, E20, E22, E25

1. Introduction

In the economic literature, to economic growth is given particular attention, because the general welfare of society depends on its level and there are numerous approaches regarding classifying and ordering factors of economic growth:

✓ In the economic growth process the human factor intervenes by increasing the volume of work at the macroeconomic level and quality of its synthetic expressed by labor productivity.

✓ The second factor of traditional economic growth is the natural resources: arable land, deposits of oil and natural gas, forests, water and mineral resources.

✓ The capital formation, the third factor of economic growth, consists of large-scale projects (construction of roads, irrigation channels and waterways or measures which are taken in health care) to be made in order to economic activity and trade to be carried out.

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[1]**Gross fixed capital formation** represents the value of the durable goods (tangible and intangible assets) for non-military purposes, purchased by the resident producing units to be used at least one year in the production process, as well as the value of services incorporated in fixed capital goods.

Results of the macroeconomic level activity, resulting in material goods and services, reflect the structure, dynamics and performance of the economy. The main indicator for measuring economic growth is gross domestic product (GDP).

2.Presentation of data

The analysis studies the correlation between the two indicators calculated on the basis of the data collected from the national banks of the respectively countries.

The value of the correlation coefficient indicates the intensity of the relation between these two variables.

Figure 1 - Relationship between GFCF and GDP, in Romania
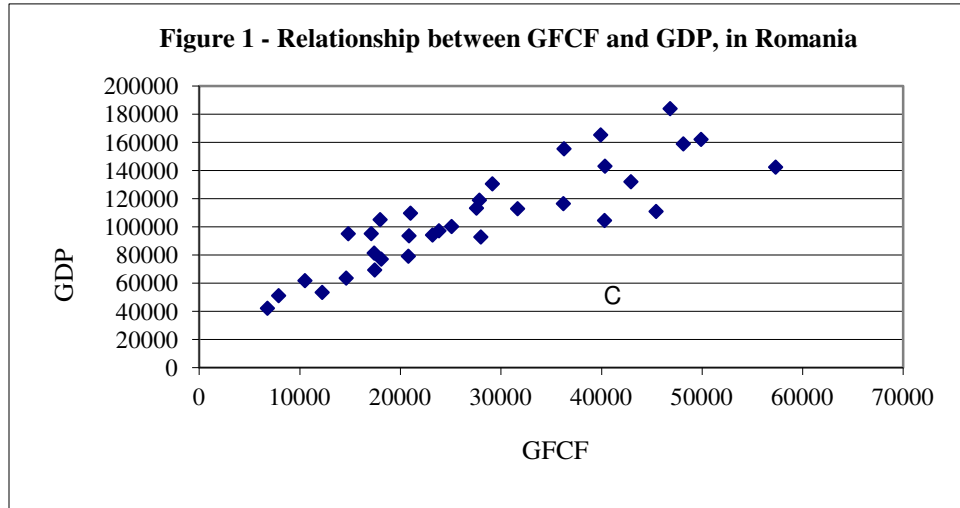
Source: National Institute of Statistics; National Bank of Romania

The value of the correlation coefficient is 0,781334 which means a direct relation between indicators, but not very strong (its value is positive and higher than 70%).

Figure 2 - Relationship between GFCF and GDP, in Bulgaria
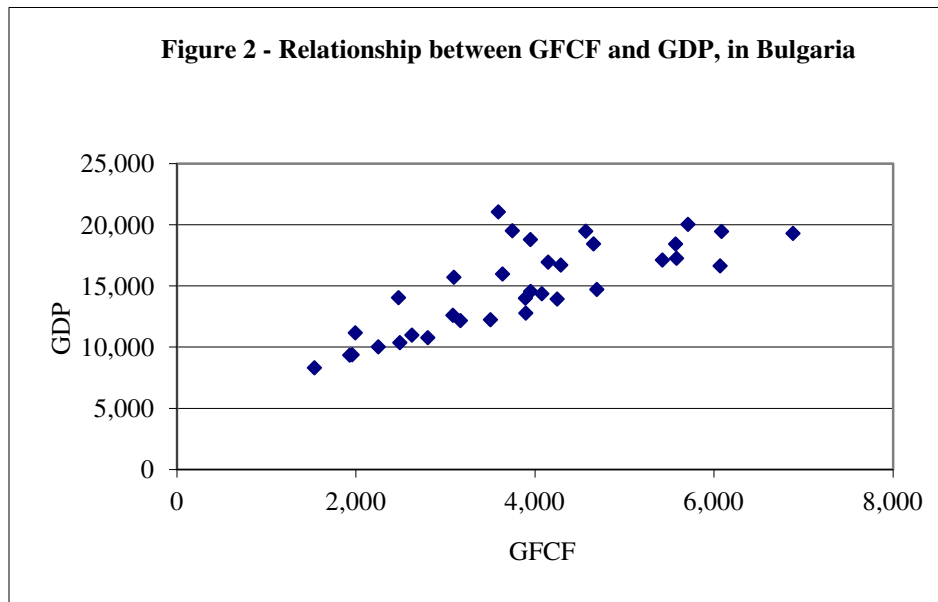
Source: National Statistical Institute of Bulgaria; National Bank of Bulgaria

The value of the correlation coefficient is 0,951547 which means a very strong relationship between indicators (its value is positive and approaches by 1).

**Figure 3 - Relatioship between GFCF and GDP, in Cehia**
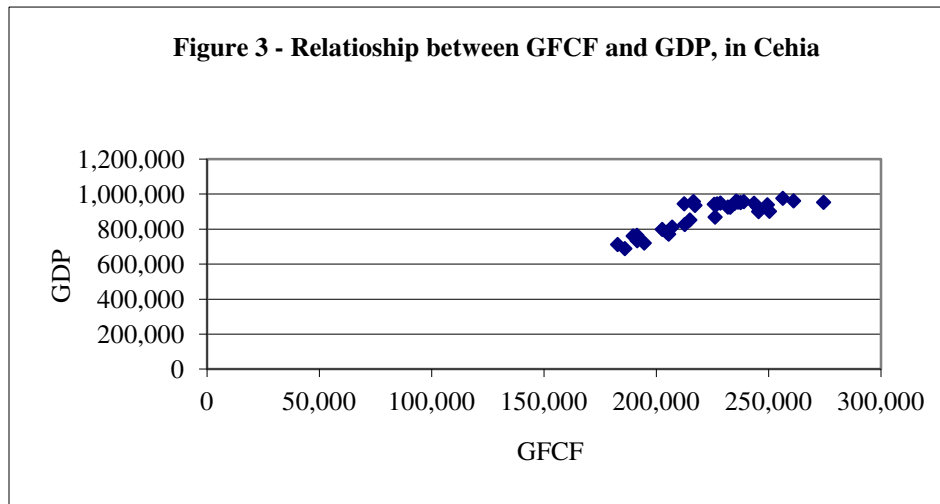
Source: Czech Statistical Office; National Bank of Czech Republic

The Czech Republic is seen in the same situation: the value of the correlation coefficient is 0,928339 which means a very strong relationship between indicators (its value is positive and approaches by 1).

Figure 4 - Relationship between GFCF and GDP, in Poland
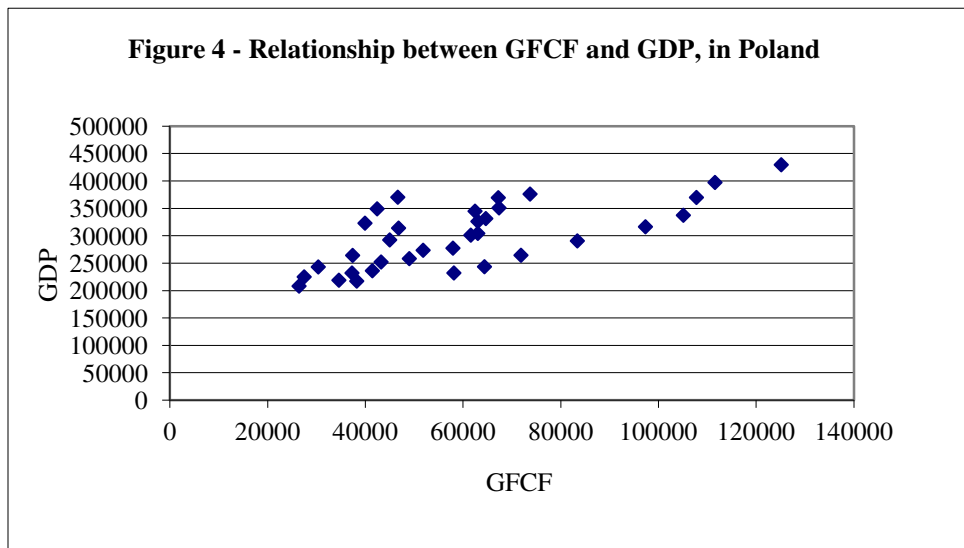
Source: Central Statistical of Poland; National Bank of Poland

In Poland the situation is similar to Romania. The relationship between indicators is not very strong, because the value of the correlation coefficient is 0,781334.

Figure 5 - Relationship between GFCF and GDP in Hungary
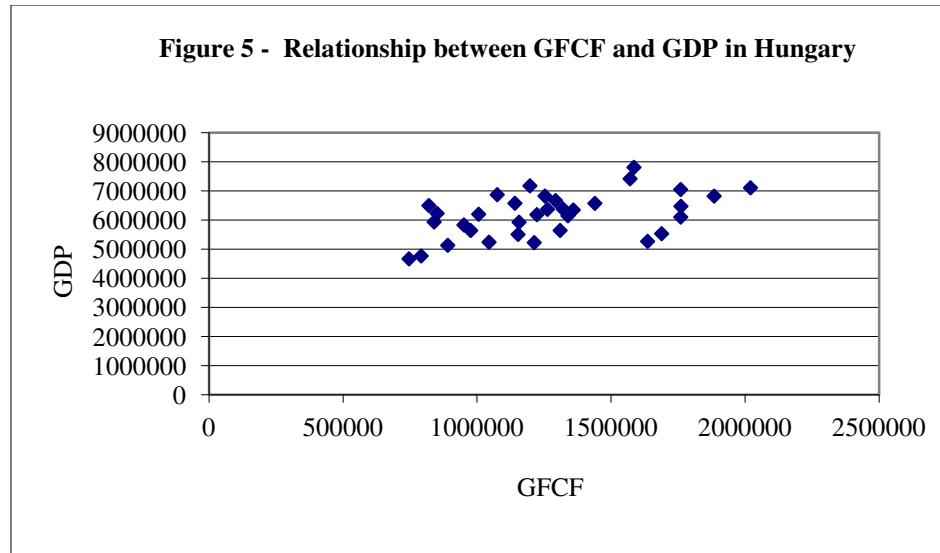
Source: Hungarian Central Statistical Office; National Bank of Hungary

For Hungary notice that the value of the correlation coefficient is 0,68278 which means that there is no connection between the two indicators (its value value is less than 1).

We notice that the biggest value is registered in Bulgaria which means that the GDP increasing is much more dependent on the GFCF comparing to other countries. In other words, GFCF has a more important role for the development of Bulgaria and Czech Republic and the GFCF has a lower impact on countries like Romania and Poland. These countries could either try to develop the contribution of the fixed capital or to develop other growth factors depending on their possibilities.

3. Conclusions

This paper encloses a comparative approach on the manner in which gross domestic product is inter-related with the gross fixed capital formation at the of CEE countries (Romania, Bulgaria, Czech Republic, Poland and Hungary).

The statistic output corresponding to the analysis at the level of CEE countries reveals important findings in terms of relation between gross domestic product and gross fixed capital formation. Research permitted to draw an important conclusion regarding the rol played by gross fixed capital formation on the economic growth in Romania, Bulgaria, Czech Republic and Poland, less Hungary for the period 2003-2009.

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