

Statistical Analysis of the Evolution FDI Comparative with Growth Rate of Labour Productivity per Employed Person and Growth Rate of GDP per Capita

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Abstract: This paper aims at making a comparative analysis of the evolution FDI rate influence in Romania vs growth rate of labour productivity per employed person and growth rate of GDP per capita. The starting point of this analysis is the position of FDI occupies in Romania, because the competition between firms and countries is getting bigger due to globalisation. The comparative analysis of the evolution FDI comparative with growth rate of labour productivity per employed person and growth rate of GDP per capita in period 2003 - 2015 with adjusted data based seasonally used the average and the function AVEDEV, DEVSQ as well as the coefficient of variation and graphics.

Keywords: FDI (Foreign direct investment); GDP; growth rate of labour productivity per employed person; growth rate of GDP per capita

JEL Classification: E27

1. Introduction

The Foreign direct investment FDI, growth rate of labour productivity per employed person and growth rate of GDP per capita are annual statistical data of Romanian National Institute of Statistics.

Foreign direct investment (FDI) is defined by Eurostat as: “the category of international investment made by a resident entity (direct investor) to acquire a lasting interest in an entity operating in an economy other than that of the investor (direct investment enterprise); the lasting interest is deemed to exist if the investor acquires at least 10 % of the equity capital of the enterprise; FDI stocks are the value of FDI assets (for outward FDI stocks) and of FDI liabilities (for inward FDI stocks) at the end of the reference period.” <http://ec.europa.eu/eurostat/web/products-datasets/-/tec00095>.

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Growth rate of labour productivity per employed person is defined by International Labour Organisation as “the growth rate of output per unit of labour input”. The output is considered as added value. <http://www.ilo.org/empelm/units/employment-trends/lang--en/index.htm>.

Growth rate of GDP per capita (annual %) is defined by World bank as “annual percentage growth rate of GDP per capita based on constant local currency. GDP per capita is gross domestic product divided by midyear population. GDP at purchaser’s prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.”¹

2. Statistical Data

The Evolution of FDI in Period 2003 - 2015 with Adjusted Data Based Seasonally Statistical Data

According to the data provided by the www.insse.ro the evolution of FDI in Romania for the period 2003 - 2015 with adjusted data based seasonally, synthesised in the following tables.

Table 1. Foreign Direct Investment in Romania

Anul	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
FDI (millions Euro)	9662	15040	21885	34512	42770	48798	48827	51414	53723	57851	59958	60198	64433
Growth rate of labour productivity per employed person (%)	5.6	10.2	5.8	7.3	6.5	8.4	-5.2	-0.5	1.9	5.7	4.4	2.3	5.3
Growth rate of GDP per capita (annual%)	6.0	9.0	4.8	8.7	8.5	10.3	-6.3	-0.2	1.6	1.1	3.9	3.5	4.5

Sources: http://www.insse.ro/cms/files/Web_IDD_BD_ro/index.htm

Analyse of Statistical Data

Analyse of statistical data for the evolution FDI comparative with growth rate of labour productivity per employed person and growth rate of GDP per capita in period 2003 - 2015 with adjusted data based seasonally use the average and the function AVEDEV, as well as the coefficient of variation and graphics, centralised as well as:

¹ <https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG>.

Table-2

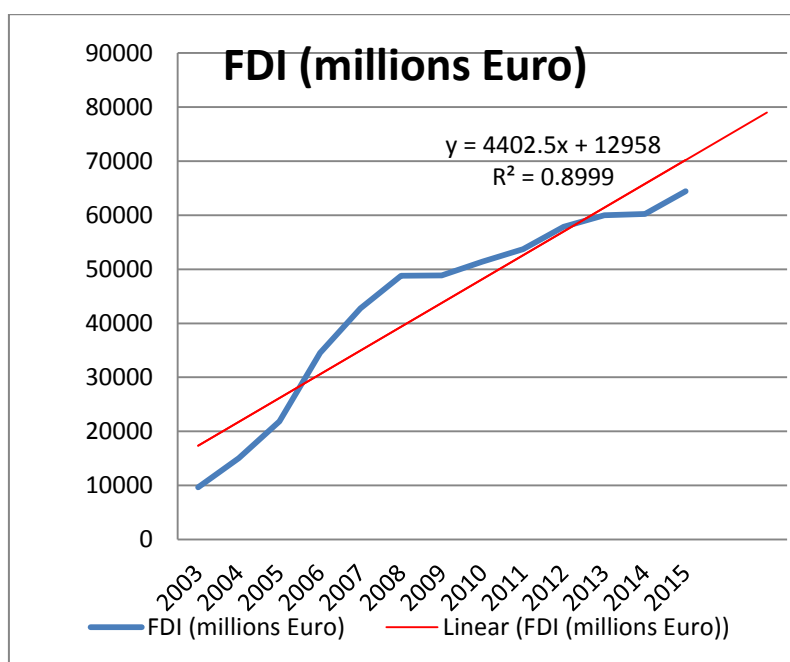
Function	Average	AVEDEV	Coeff. variation
FDI (millions Euro)	43774.69	14616.07	0,33
Growth rate of labour productivity per employed person (annual %)	4.44	2.97	0,67
Growth rate of GDP per capita (annual %)	4.26	3.38	0,79

Sources: own calculations

The comparative analysis by Growth rate of labour productivity per employed person (annual %) and Growth rate of GDP per capita (annual %) shows a perfect correlation, per total.

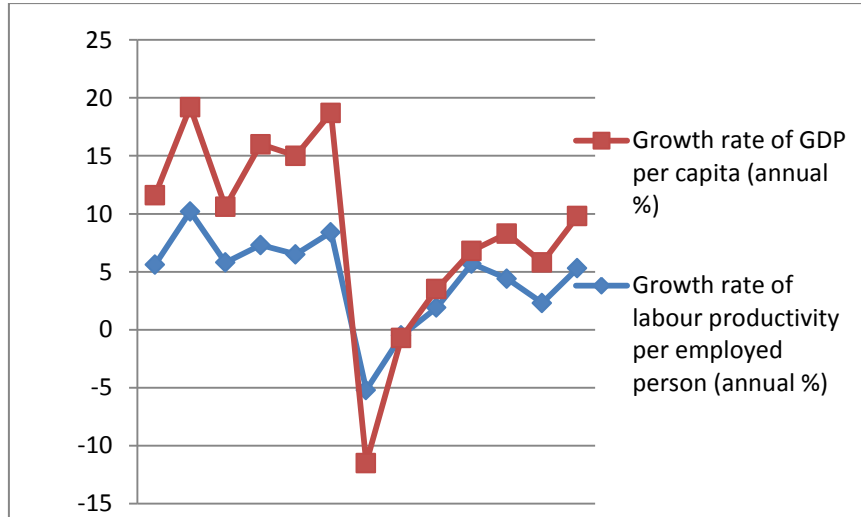
Graphical Evolution

The graphical evolution of FDI in Romania of 2003 – 2015, the forecast linear trend line and R-squared value is the following:



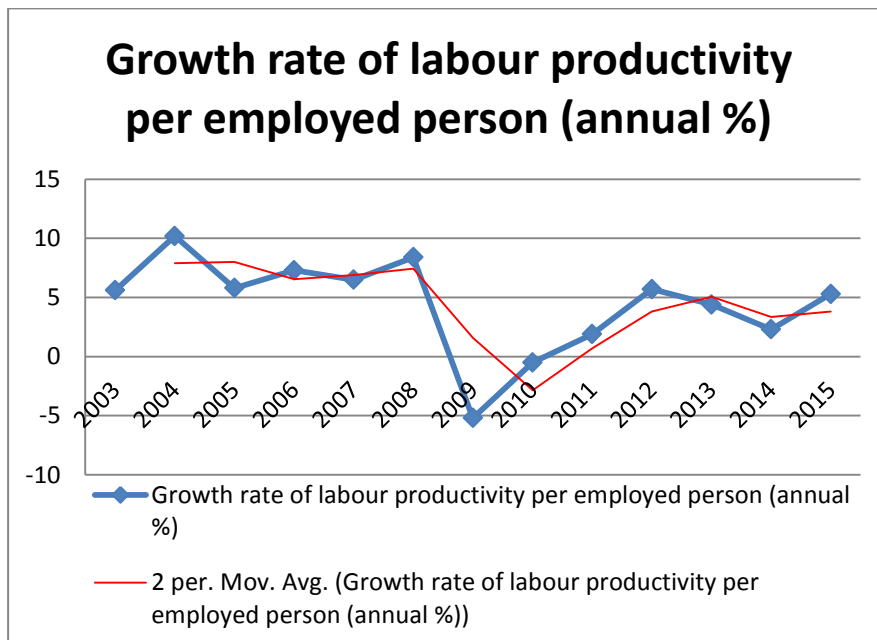
Graphic 1

Sources: own calculations

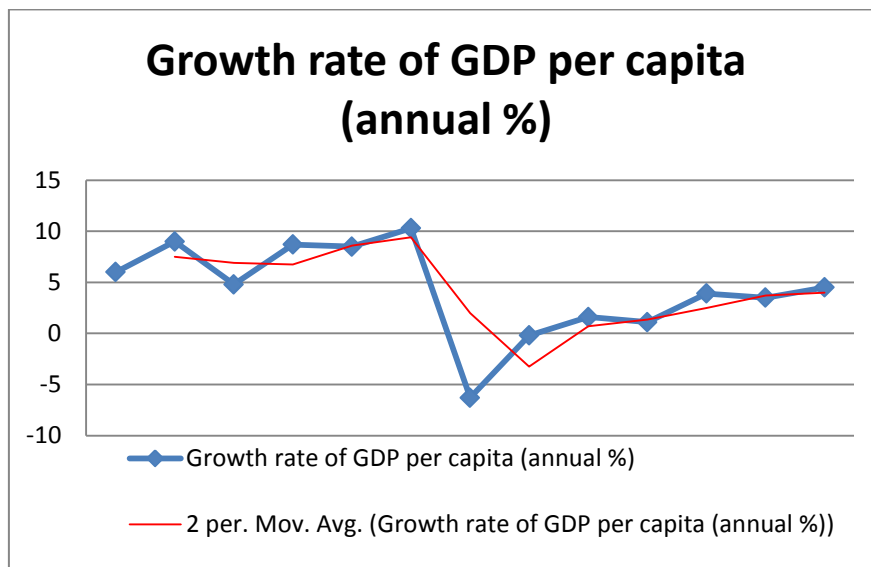


Graphic 2

Sources: Own calculations



Graphic 3



Graphic 4

As can be seen by using the smallest square method, both the series growth rate of labour productivity per employed person and growth rate of GDP per capita, can be estimated using the moving average trend line method, relative to FDI that are approximated by a linear regression equation. Thus, we consider that between FDI and the other two series is not a direct and strong correlation, the only correlated being growth rate of labour productivity per employed person and growth rate of GDP per capita.

3. Conclusions

This work trying to discover the correlation between FDI, growth rate of labour productivity per employed person and growth rate of GDP per capita. After analyzing the series we can say as decision to invest in a particular country through foreign direct investment depends by the level of taxation in that country, but also depends on the cost of the workforce and its level of qualification. The comparative analysis of the FDI, Growth rate of labour productivity per employed person (annual %) and Growth rate of GDP per capita (annual %) in period 2003-2015, shows a perfect correlation between Growth rate of labour productivity per employed person (annual %) and Growth rate of GDP per capita (annual %) per total, with adjusted data based seasonally used the average and the function AVEDEV, as well as the coefficient of variation, graphics and with moving average trend line method.

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