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FACULTY OF ECONOMICS  
UNIVERSITY of BANJA LUKA

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# THE INFLUENCE OF FOREIGN INVESTMENTS ON EMPLOYMENT AND ECONOMIC GROWTH IN FYROM

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## Abstract

*The relationship and influence of foreign direct investment (FDI) on the economic growth and unemployment has been the subject of long debates. In global terms, the relationship between FDI and economic growth has been the subject of many research studies: from purely theoretical analysis of the channels through which this is accomplished, the motives and determinants of investment, to empirical studies on a broad panel of countries. Because of these shared arguments about the impact of foreign direct investments on economic growth and unemployment, as an area of investigation in this paper we took FYROM, a country in transition, which has its own particularities in FDI inflows that uses or wants to use FDI as a form of rapid economic growth.*

*The purpose of this paper is to examine the impact of foreign direct investment (FDI) on economic growth and unemployment in FYROM. The paper examines existing theory to create an analytical framework for the relationship between FDI and economic growth and unemployment, then to quantitatively evaluate the importance of these investments in economic growth and unemployment in FYROM. The theoretical literature, elaborated in this paper suggests that foreign direct investment affect economic growth and unemployment through the following channels: transfer of technology and know-how, upgrading the workforce, integration into the global economy, increasing competition and development in the host-country and reorganization of domestic firms and lowering difficulties in implementing economic policies. Theoretical literature and empirical literature suggest shared thoughts and conclusions on the impact of FDI on economic growth and unemployment.*

*Foreign direct investment (FDI) attract much attention and interest in every country, especially countries in transition. Hence, each host-country stands for promoting and attracting foreign direct investment because of their contribution to the economy by offering affordable fees, taxes and financial incentives to attract FDI. In this context, the efforts that governments do to attract FDI significantly reduce budget revenues (due to the cost of attracting FDI, as well as direct budget subsidies allowed to foreign investors) who otherwise could be used for investments in education and infrastructure, which automatically speeds up the economic growth of the country which becomes attractive for investment in the long run.*

*Key words: FDI, GDP, unemployment, economic growth, industrial output*

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## Introduction

The connection between foreign direct investment (FDI) on one hand and economic growth and unemployment on the other has been the subject of long debates among the creators and observers of the domestic and international economics. In the literature there are different considerations and conclusions about the impact of FDI on economic growth and unemployment. One group of authors (Ghosh and Wang, 2009; Hetes, 2009, etc.) emphasizes that FDI accelerates economic growth of the host country, while another group of authors consider that FDI have negative effects on economic growth of the host country (Mencinger, 2003; Vissak and Roolaht, 2005, etc.). Analyzing both perspective, FDI accelerated economic growth and job creation through increased productivity and competitiveness, industrial specialization, the transfer of sophisticated technology, faster access to the global market. On the other hand, the negative effects are seen through job cuts due to the sophisticated technology, reduced support to the domestic companies, worsening the balance of payments, etc.

In this paper we take FYROM as a country in transition, which has its own peculiarities in the inflow of foreign direct investment and who uses or wants to use foreign direct investment as a form of rapid growth of its economy. Namely, Campos and Kinoshita (2002) considered that countries in transition are suitable for analyzing the effect of FDI on economic growth for the following two advantages: First, at the beginning of the transition (from central planning to a market economy), these economies were far from limits of sophisticated international technology. However, in contrast to developing countries, countries in transition started with a complete industrial structure and relatively educated labor force, which allows the transfer of technology to accelerate economic growth; Second, close position of these countries to European markets.

The positive impact of foreign direct investments on employment and foreign trade, and hence the economic growth of countries is more pronounced in export-oriented countries than in developing countries based on the policy of import substitution. If complementarity is prevailing between foreign direct investment and exports, foreign direct investment will cause an increase in employment and a favorable state of the foreign trade balance. Opposite, if there is substitution element between foreign direct investments and imports, employment in the export oriented sector departs place of employment to economic entities that sell their products exclusively on the domestic market.

There are divided opinions on the impact of FDI on economic growth. Positive effects are mirrored by improving technology, increasing competitiveness and productivity, increasing exports, job creation, transmission and management skills training, better organization of local businesses etc., while the negative effects are mirrored by local firms depending on foreign technology, foreign influence and control, worsening the balance of payments, spreading economic problems in the world, decay and reduced support for local businesses, reduced interest for employment because of the sophisticated technology etc.

## FDI in FYROM

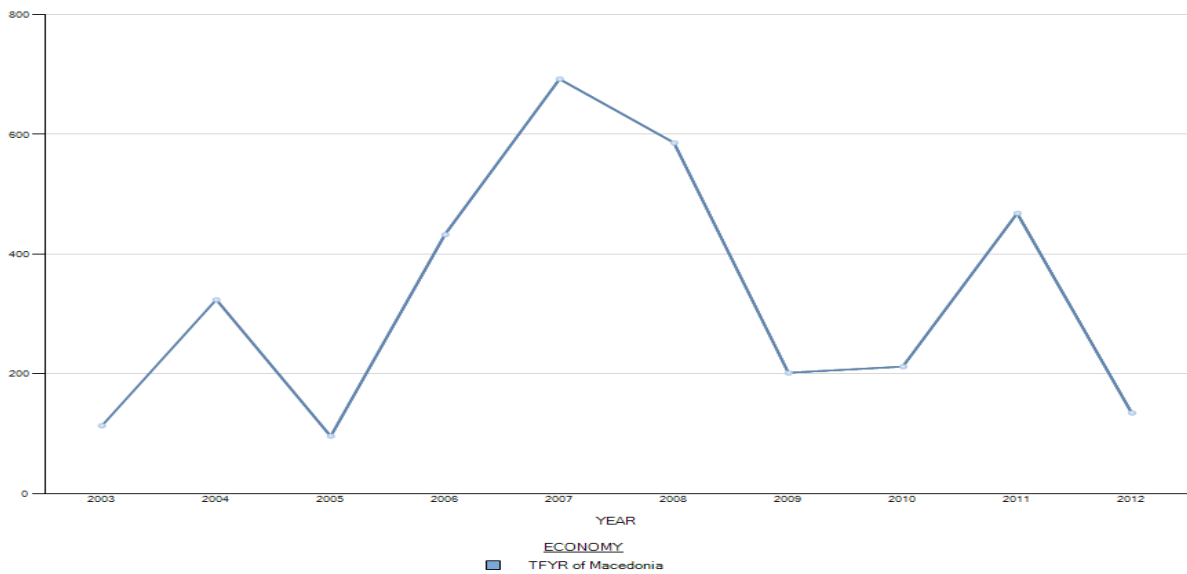
FYROM, as well as other transition countries, from its independence constantly makes efforts to attract most of the foreign capital through foreign direct investment. There are constant measures of economic and legal aspects of creating a favorable international investment climate and achieving a favorable international investment position. In order to increase the interest of foreign investors to invest their capital, the country is committed to range macroeconomic policies and reforms, reform of the tax system, protection of property rights and contract enforcement, and improving efficiency in the functioning of the legislative, judicial and more executive and efficient public administration.

However, foreign investment between 1990 and 1996 was only 64 million U.S. dollars, of which 30 million dollars is generated in the process of privatization. A significant volume of foreign direct investment of approximately 150 million U.S. dollars was recorded in 1998, followed by a further decline - only 88 million U.S. dollars in 1999, mainly due to the increased political risk and the escalation of the crisis in the region. In the next two years the level of foreign direct investment was mainly due to growth in sales of several public companies, sales of "Stopanska bank" - Skopje, "ADOR" - Skopje, "Feni" - Kavadarci, "Bucim" - Radovish, "Mermeren Kombinat" - Prilep, "Learnica" - Ohrid, "Pivara" - Bitola etc. The maximum during this period foreign investments accomplished in 2001, as a result of sales of Macedonian Telecommunications, "EMO" - Ohrid, "Zito Luks" - Skopje, Skopje Fair, etc. In 2001, foreign investments amounted to 447.1 million U.S. dollars and achieved the highest percentage of GDP (13 %). In 2002, again there is a decline in foreign direct investment and they totaled 105.6 million dollars and participate in GDP only for 2.8 %. In the coming years there are oscillating movements of foreign direct investment, mainly retaining the low level of 117.8 million U.S. dollars in 2003, 323.0 million U.S. dollars in 2004 and 97.0 million U.S. dollars in 2005, also with low share of GDP during the same years.

The aggressive policy of the Government to attract foreign investment supported by well-defined and targeted informative advertising, overcome the negative trend in 2006, when a considerable increase of 424.2 million U.S. dollars and 6.5% share in GDP is reported as total FDI in 2006. Its maximum foreign direct investment in the country has reached in 2007 when it was 699.1 million U.S. dollars.

The impact of the global economic crisis in 2008 and 2009 contributed to the trend growth of foreign direct investment to decline significantly in FYROM, as in the other countries in transition. Although in the first year of the crisis there was a slight decline in foreign direct investment of 587 million U.S. dollars, already in 2009 a significant decline of 197.1 million U.S. dollars with a minimum contribution of 2.1 % of GDP. This tendency of decline in foreign direct investment is interrupted with minimal growth of 4.09 % compared to 2009, amounting to 211 million U.S. dollars in 2010, an increase of 11.61 % compared to 2010 or the amount of 463, 30 million U.S. dollars in 2011 and again big decline in 2012 with 98, 9 million US dollars, which amounts are far below the level reached in 2007. The trend of foreign direct investments can be seen from the graph below.

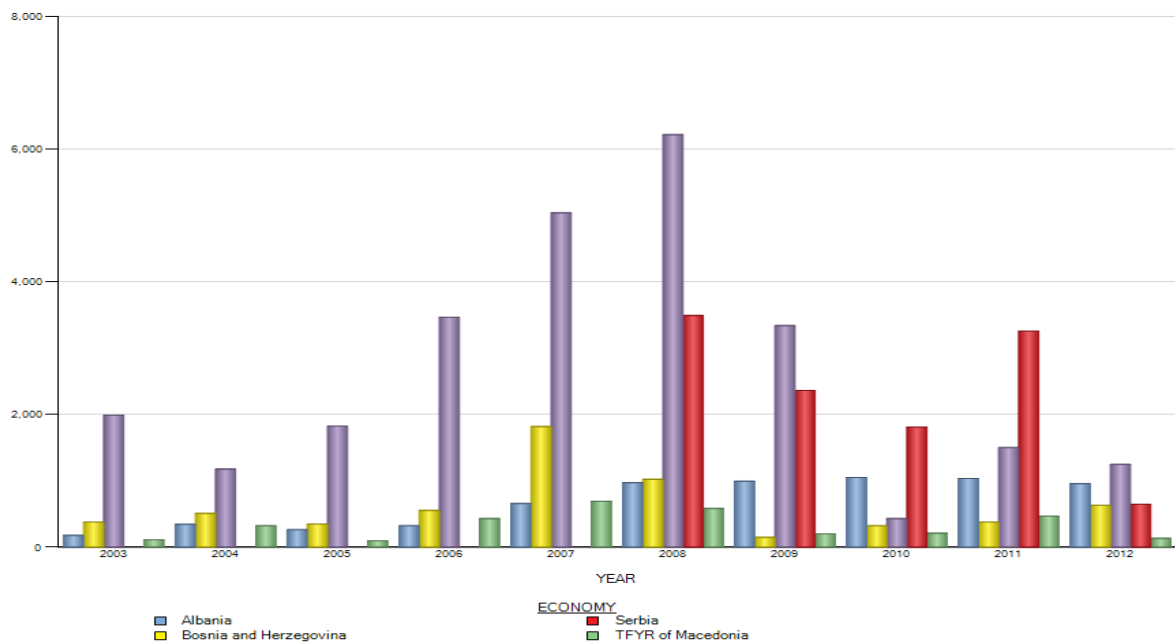
**Graph 1: FDI in FYROM ( 2003-2012)**



Source: UNCTAD STAT

According to the numbers taken from UNCTAD about foreign direct investments in Balkan countries which are not part of EU, plus Croatia which enter the European Union in July 2013, FYROM is at the bottom, far below Serbia during the years 2008-2012. Taking into consideration Bosnia and Herzegovina, 2007 was also the most important years for foreign direct investments in this country, same as in FYROM, with the main difference in the amount received, which is almost double. Comparing the FDI of Albania and FYROM, it is noticeable that the direct investments are much bigger for Albania after entering NATO force from 2009. These trends can be seen from the graph below.

**Graph 2: FDI in Balkan countries**



Source: UNCTAD STAT



## Literature review

In global terms, the relationship between FDI and economic growth has been the subject of many research studies: from purely theoretical analysis of the channels through which it is exercised, motives and factors that determine the investment, to empirical studies on a broad panel of countries (in transition). Important works in this context are: Hetes (2009) Xu and Wang (2007); Campos and Kinoshita (2002); Kornecki and Rhoades (2007) etc. Empirical evidence generally suggests a positive and strong relationship between FDI and economic growth in transition countries.

Empirical research from Finndlay (1978) at the end of the 1970s, pointed out that the contribution of FDI to economic growth goes through the "diffusion of knowledge" of domestic firms with advanced technology and better managerial practices from the investment companies, and Blomstorm and Kokko (2002) example of 78 developing countries concluded that technological progress and knowledge transfer are mechanisms through which foreign direct investments are stimulating economic development.

Bogun (2009) argues that greater inflow of FDI is more profitable for the host. He argues that considering the industrial level, FDI creates greater productivity in the industrial branch. Thus, FDI creates cumulative system where the remarkable results of past FDI result in attracting new investments. However, he notified that the impact of FDI will be significantly greater if it is directed in appropriate industry sectors with comparative advantage (higher productivity, employee training, and higher level of marketing activities).

Hetes et al. (2009) develop research on the correlation between FDI and economic growth represented by the GDP in the host country. First, they examined the role of FDI in Central and Eastern Europe, and then consider in more detail the role of FDI in Romania, Bulgaria, Hungary and Slovenia. Their analysis refers to the period 1994 - 2006. Analyzing the role of FDI in economic growth in the countries of Central and Eastern Europe, Hetes et al. (2009) conclude that there is a positive correlation between FDI and economic growth. Analyzed by years the positive interdependence of FDI and economic growth is noticeable in the period 1994 - 1997. In 1998, the increase in FDI did not lead to an acceleration of economic growth, but otherwise, a significant decrease in GDP in this region. Further increase in FDI has led to the achievement of the maximum level of growth rate of GDP in the year 2000. The positive trend of the impact of FDI on economic growth continued through the years from 2001 - 2006, and the study shows greater stability in this correlation.

Kornecki and Rhoades (2007) conducted research on the relationship between FDI and economic growth (real GDP), based on the correlation coefficient. This research was conducted in Hungary, the Czech Republic, Poland, Slovakia and Slovenia in the period 1990 - 2005. This study, as it is the case with the previous ones, observed a strong positive correlation between FDI and real GDP growth rates.

Branču and Lucaciu (2009) conducted research on the impact of FDI on employment in Romania. For this purpose, they used data from 62 French companies from various fields who have invested in Romania. In their study, they examined the impact of FDI on employment in terms of the type of FDI (Greenfield and takeover of local firms) and investment motive (market incentives and resource motives).

On the other hand, Vissak and Roolaht (2005) suggest that the large inflow of FDI leads to a parallel economy (meaning that foreign companies are stronger, more competitive, grow faster, have higher levels of wages, have no tendency to cooperate with domestic companies, etc.) that may accelerate inflation, lead to political, social and cultural conflicts, destruction of the environment, reduced autonomy of domestic firms, the absence of technological spillover etc. The destructive approach that is especially present in imperfect market structures suggests that FDI lead to bankruptcy of domestic producers, strengthen and expand the power of transnational companies in the domestic market, repatriation of profits and favoring the "elite" of the labor force compared to other employees.

From the literature review can be concluded that in some studies FDI have a positive effect on economic growth through various channels, but on the other hand, notes that in some cases FDI inflows are not statistically significant or have no impact on employment and economic growth.

### **Methodology**

The effects of foreign direct investments inflows in FYROM is investigated by using an LS regression model where we are analyzing the influence of the foreign direct investments on the gross domestic product, unemployment rate and industrial growth. Here our focus is on the relationship between a dependent variable (FDI) and independent variables (GDP, Unemployment rate, Industrial growth). For these regression models we use quarterly data for GDP growth, FDI, industrial output and unemployment rate for the years 2003-2013.

For the simple regression models we are using the equation

$$Y = a + b X + e$$

where, respectively, we plug in the independent variables mentioned above.

For the multiple regression model we are using the equation

$$Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + \dots + b_k X_k$$

Analyzing the results, we are focusing on the F-statistics and its overall significance F (its P-value), which estimations of significance level should be less than or equal to 0,05 (or 5%). A low p-value (< 0.05) indicates rejection of the null hypothesis of non significance. In other words, a predictor that has a low p-value is likely to be a meaningful addition to our model because changes in the predictor's value are related to changes in the response variable. Conversely, a larger (insignificant) p-value suggests that changes in the predictor are not statistically significant thus not associated with changes in the response.

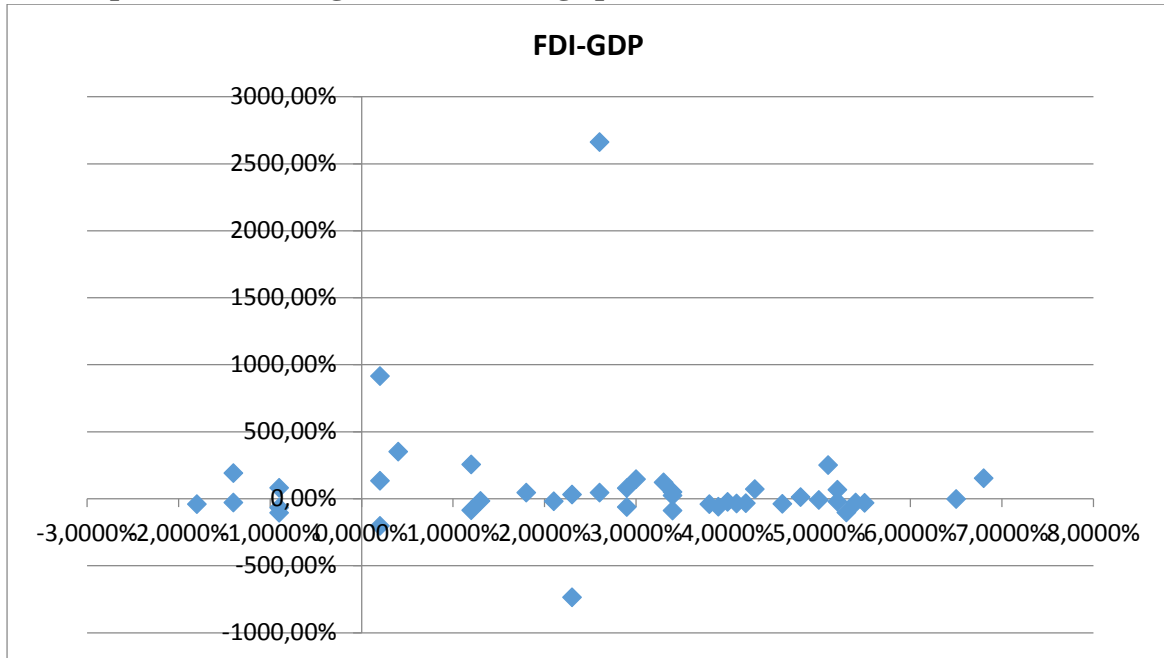
From the models we are also analyzing the R-squared and Adjusted R<sup>2</sup>. R-squared is a statistical measure of how close the data are to the fitted regression line. We are using as the coefficient of determination, or the coefficient of multiple determination for multiple regression. In the simple and multiple regressions, the higher the R-squared, the better the model fits the data.

### **Analysis**

The first relationship under examination is the effect of FDI changes on GDP changes. Thus, we estimate the LS regression of

$$GDPchange = a + b FDIchange$$

**Graph 3: GDP change and FDI change plot**



As seen on Table 1, we fail to find any statistically significant relationship between the two variables. It seems that in the period 2003-2013, changes in the FDI do not explain changes in the GDP.

**Table 1: Regression statistics-FDI change and GDP change**

Regression Statistics	
Multiple R	0,059024612
R Square	0,003483905
Adjusted R Square	-0,020821366
Standard Error	0,023257906
Observations	43

ANOVA				
	SS	MS	F	Significance F
Regression	7,75367E-05	7,75367E-05	0,143339477	0,706936889
Residual	0,022178138	0,00054093		
Total	0,022255674			

	Coefficients	Standard Error	t Stat	P-value
Intercept	0,027497354	0,003615099	7,60625238	2,32767E-09
FDIchange	-0,000299907	0,000792144	-0,378602003	0,706936889

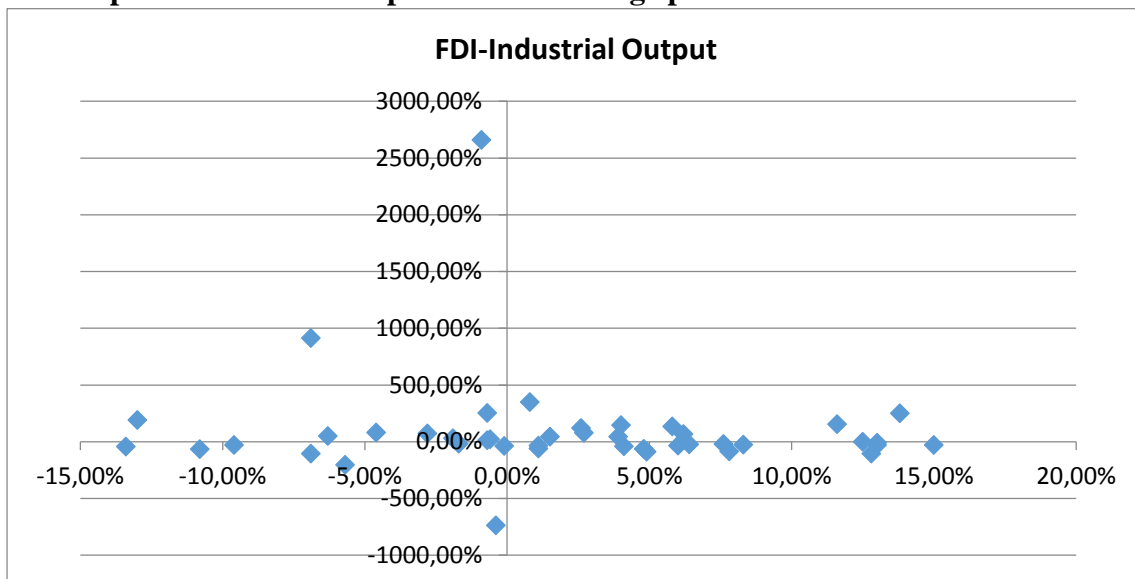
The table above is showing that there is not any statistical relationship. The R squared is minimal, equal to 0,34%, showing that there is little, if any, significant relationship. The

significance of the variable FDI, taking into consideration F-stat and its P-value=0,7069 and t-stat and corresponding P-value, which is 0,7069, is also showing that there is no significance of FDI of GDP in the country. What should be noted here is the sign of the coefficient of FDI which is negative (notwithstanding the non-significance) that reveals an inverse effect of the FDI on GDP in the country, contrary to regular expectations.

The next relationship under investigation is the effect of FDI changes on Industrial Output, thus examining the LS regression of

$$\text{Industrial Output} = a + b\text{FDI}$$

**Graph 4: Industrial Output and FDI change plot**



In this model, similarly to the previous one, when we analyze the main criteria, there is not any statistical significance of the foreign direct investments on the industrial output in the country. First, the R squared is marginally equal to zero, 0,0088. The significance of the variable FDI, taking into consideration F-stat and t-stat and their corresponding P-value=0,5644 is also showing that there is no significance of FDI on the industrial output in the country during the period 2003-2013.

Table 2: Regression statistics-FDI change and industrial output change

<i>Regression Statistics</i>				
Multiple R	0.090369058			
R Square	0.008166567			
Adjusted R Square	-0.01602449			
Standard Error	0.073880854			
Observations	43			
<i>ANOVA</i>				
	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	0.001842674	0.001842674	0.337586	0.564406389

Residual	0.223793605	0.005458381		
Total	0.225636279			

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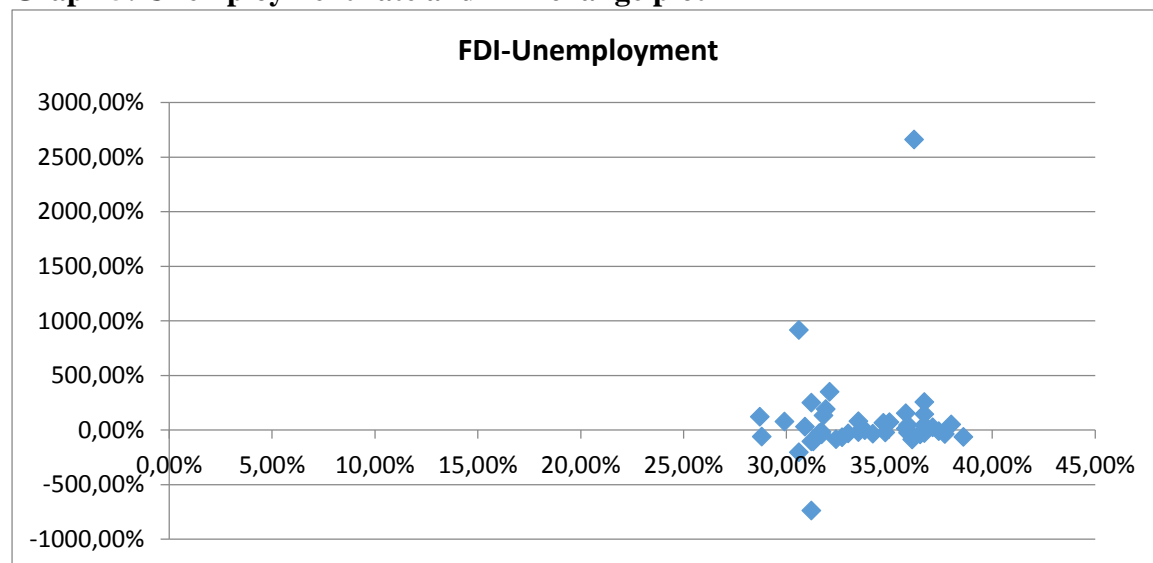
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.020895522	0.01148369	1.819582	0.07612979
FDIchange	-0.00146203	0.002516317	-0.58102	0.564406389

Surprisingly enough, the FDI changes in FYROM during the last ten years fail to prove influencing the GDP and Industrial Output figures. In addition to the above, if there exists any relationship this appears to have a negative sign, which is against common belief. This could reveal a peculiarity of the domestic economy and its structure, especially taking into consideration the small size of the economy and its structural weaknesses that still remain an obstacle to its future development.

Finally, the last relationship under examination is the effect of FDI changes on the Unemployment rate, thus estimating the following regression

$$Unemployment = a + bFDI$$

**Graph 5: Unemployment rate and FDI change plot**



As seen on Table 3 below, the LS regression fails to prove any relationship between FDI changes and Unemployment rates during the 2003-2013 period. The R square is again marginally equal to zero, 0,009 and the P value of the coefficient is 0,526 far above the 5% significance level. It appears that in the economy of FYROM FDI changes do not influence any of the three macroeconomic variables under examination during the ten year period.

**Table 3: Regression statistics-FDI change and unemployment rate**

<i>Regression Statistics</i>
------------------------------

Multiple R	0.099378503			
R Square	0.009876087			
Adjusted R Square	-0.014273277			
Standard Error	0.027304193			
Observations	43			
<b>ANOVA</b>				
	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	0.000304886	0.000304886	0.4089585	0.526055875
Residual	0.030566277	0.000745519		
Total	0.030871163			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.338335383	0.004244035	79.720223	1.36377E-46
FDIchange	0.000594706	0.000929957	0.6394986	0.526055875

In addition, we have estimated the correlation matrix in order to verify our above mentioned results and examine any other possible relationships between the four macroeconomic variables. The correlation matrix is the following:

Table 4: Correlation matrix

	<i>GDP (real growth)</i>	<i>FDIchange</i>	<i>Unemployment rate</i>
GDP (real growth)	1		
FDIchange	-0,059024612	1	
Unemployment rate	0,389267227	0,099378503	1
Industrial production growth	0,781935227	-0,090369058	0,249011557

The results verify our aforementioned findings. It can be seen that the correlation between FDI and GDP in FYROM in the period 2003 -2013 is almost zero. In fact, the correlation has a negative sign, which verifies the fact that there is little or no correlation between these two variables. These results which are showing non-existing relationship are in complete distinction to the overall public opinion about the foreign direct investment inflows and their contribution to the gross domestic product and overall economic growth in the country. There are many factors that can underpin and support these findings. First of all, there is the structure of the domestic economy that cannot benefit from the FDI inflow. Second, the focus of the public policies is mostly oriented to attracting foreign direct investments, while in the meantime, the domestic investments and helping domestic companies is put as secondary importance. Also, this goes in parallel with the fact that the corporate profits mostly are transferred abroad, without strict regulations part of the profit to be reinvested in the country. But, these consequences should be further investigated with more details included in the whole analysis, and with closer attention to other facts and parameters which we just mention previously, but could be very important for the undersized and small effect of the impact of foreign direct investments to GDP in FYROM.

On the other hand, there are another two relationships that should be brought into attention for future analysis: first, the correlation of industrial output and GDP and second the correlation of industrial output and unemployment rates. Both of them are positive (as expected) and quite high (0,78 and 0,25 respectively) that show that these sets of macroeconomic figures do have an effect on each other.

Another important result from the correlation matrix is the negative (almost zero) correlation of the FDI change on the industrial growth. The similar relations we also have between FDI and the unemployment rate, where there is not statistical significance and the correlation is almost zero. Although we got these results, one important conclusion from the models is that FDI is not giving the expected results to the domestic economy, even though it is advertised and perceived as the main important drive for the economic development and growth for FYROM.

Finally, we run a multiple regression model that examines the effect of FDI and Industrial Growth on GDP, in order to evaluate their potential combined effect. The regression model is

$$GDPchange = a + b1 FDIchange + b2 Industrial\ growth$$

The multiple regression model is in complete agreement with our previous results. The overall statistical significance of the regression (P value<5% of F significance) is revealing potential relationships. The coefficients' significance however, show that only industrial production growth (P value<5%) is influencing GDP at a positive rate of 0,2459, while FDI changes prove non-significant (P value 0,90).

Table 5: Regression statistics-FDI change and industrial growth on GDP change

<i>Regression Statistics</i>				
Multiple R	0,782022545			
R Square	0,611559261			
Adjusted R Square	0,592137224			
Standard Error	0,014701199			
Observations	43			
<i>ANOVA</i>				
	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	0,013610664	0,006805332	31,48790534	6,11639E-09
Residual	0,008645011	0,000216125		
Total	0,022255674			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0,022358948	0,002375558	9,41208333	1,07595E-11
FDIchange	5,96209E-05	0,000502767	0,118585547	0,906197255
Industrial production growth	0,245909465	0,031076273	7,913093754	1,03726E-09

Form the table above, which is done from the multiple regression model  $GDP\ change = a + b1\ FDI\ change + b2\ Industrial\ production\ rate$ , we can see that R square is 61,155%, which means that it is good fitted. The significance of variables, in this case the FDI and Industrial production, are showing different results. From the t-statistics and the corresponding P-value for the first independent variable in the model, which is the FDI, it is obvious that this variable is not significant, with P-value= 90,61%. So, from this model it is noticeable that there is no statistical relationship between the Gross Domestic Product of FYROM and the Foreign Direct

Investments in the country. On the other hand, taking into consideration the second variable, the industrial production growth, with P-value= 0,000000001037, which is less than 5%, there is a statistical relationship and significance concerning the GDP of the country. Concerning the signs of the coefficients, they are positive for FDI and Industrial production (5,96209E-05 and 0,245909465), which is following the economic theory that FDI and Industrial production growth is provoking the growth of GDP in the country. Concerning the joint significance, which we can see from F-stat and corresponding P-value, it is obvious that there is joint significance of the FDI and Industrial growth, because the P-value is 0, 00000000611639, which is less than 5%.

After the regression models, we state the table with coefficients, t-stat, P-value and F-value significance for FDI concerning GDP, Industrial growth and unemployment.

Table 6: Coefficients, t-stat, P-value and F-value significance

Variable	Coefficient	t-stat	P-value	F-value sign.
FDI(regarding GDP)	-0,000299907	-0,378602003	0,706936889	0,706936889
FDI (regarding industrial output)	-0.00146203	-0.58102	0.564406389	0.564406389
FDI (regarding unemployment)	0.000594706	0.6394986	0.526055875	0.526055875

From the table, comparing together the three correlations (FDI and GDP, FDI and industrial output, FDI and unemployment) we can see the same trends and results as previously concluded, that there is no significant relationship and influence of the FDI for the overall economy growth and employment in the country.

### Conclusion

The purpose of this paper was to analyze the impact of foreign direct investments of the overall economic growth, presented by GDP growth, industrial output growth and unemployment rate. For the analysis we use the regression models where we are analyze the influence of the foreign direct investments on the gross domestic product, unemployment rate and industrial growth separately, and the influence of GDP growth and industrial output on the GDP change.

The main conclusion of the empirical analysis is that the relationship between the rate of growth of FDI and the rate of real GDP growth is statistically insignificant, and that there is no significant relationship between these variables. The same conclusion has brought and the relationship between the growth rate of FDI and unemployment, and also the relationship between the FDI growth rate and industrial output.

This result for insignificant impact of the FDI growth rate on the real GDP growth may be due to: the time lag effect on FDI, large fluctuations in the growth rate of FDI over time series, small share that FDI has in GDP in FYROM compared to other countries in transition, the large share of FDI in terms of privatization of state monopolies.

These observations may be a good indicator for future research on this topic. In this context, we emphasize the need to reconstruct the policy to attract FDI and to create a macroeconomic environment in which FDI will not be directed only to the manufacturing industry (which so far is the practice), but also in agriculture, IT and tourism sector, which means that there is a need for industrial diversification of FDI. Also, there is a need to consider geographical



diversification for attracting FDI because current statistical results indicate that the major sources of FDI in Macedonia are EU countries, so the country should work on attracting new foreign partners as investors.

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