IMPACT OF MACROECONOMIC FACTORS ON FOREIGN DIRECT INVESTMENT IN SELECTED SOUTHEASTERN EUROPEAN COUNTRIES

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Abstract

Foreign direct investment has a significant role in Southeastern European countries. The aim of the paper is reflected in assessing the character and nature of the relationship between macroeconomic factors and foreign direct investment in Southeastern European countries. Further, the subject of paper includes the examination of the impact of selected macroeconomic variables on foreign direct investment in six countries for the period from 2000 to 2012. The selected countries are Albania, Bosnia and Herzegovina, Bulgaria, Macedonia, Romania and Serbia. The research includes an examination impact of market size, national competitiveness and employment on foreign direct investment. By using the Hausman test, it was confirmed that the fixed effect model is an appropriate model in panel analysis. Based on the result, it determined the positive impact of market size, while the industry’s share of GDP and employment have a negative impact on this variable. Also, the results confirmed that only the market size of the countries significantly affected on the flow of foreign direct investment in Southeastern European countries.

Key words: foreign direct investment, macroeconomic factors, Southeastern European countries.
страни директне инвестиције. Коришћењем Хаусман теста потврђено је да тзв. рандом ефект модели представља адекватан модел у панел-анализи. На основу резултата, утврђен је позитиван утицај величине тржишта, док учешће индустрије у БДП-у и запосленост имају негативан утицај на ову варијаблу. Такође, резултати су потврдили да само величина тржишта значајно утиче на прилив страних директних инвестиција у земљама југоисточне Европе.

Кључне речи: стране директне инвестиције, макроекономски фактори, земље југоисточне Европе.

**INTRODUCTION**

One of the fundamental characteristics of contemporary world economy is the globalization and liberalization process where foreign direct investment has greater role in the world, especially in Southeastern European countries. Namely, foreign capital is an important part of their economic flows and a necessary condition for the faster development of national economies.

In the past decade, transition economies were the biggest receivers of foreign direct investment, which were primarily driven by low costs of the workforce, market liberalization and natural resources. In Southeastern European countries, foreign direct investment mostly came in form of privatization of domestic companies by foreign investors from the European Union countries.

Liberalization of the market of Southeastern European countries has started in 2001 with the signing of Memorandum on Trade Liberalization and Facilitation of Trade in Brussels, under The Stability Pact for Southeastern European countries. In this way, process of negotiations is opened which led to concluding a network of 32 agreements on mutual liberalization of trade of industrial and agricultural products that has been established between the countries of Central and Southeastern Europe, respectively Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldova, Romania, Serbia and Montenegro (Agency for Foreign Investments and Export Promotion, 2015).

Looking at the countries in the region, the biggest receivers of total foreign direct investment in the period leading up to the onset of the economic and financial crisis were three countries EU members: Bulgaria, Romania and Croatia, while Serbia was in the fourth place. Slovenia was first when it comes to total outflow of foreign investments among chosen countries. Other countries: Albania, Bosnia and Herzegovina, Montenegro and Macedonia attracted the insignificant amount of foreign direct investments. In 2006 just prior to the onset of the world economic and financial crisis, the FDI reached their peak. The countries of Central and Eastern Europe attracted significantly more FDI than the countries of Southeastern Europe.
In literature there are a large number of empirical studies dealing with the analysis of the factors influencing the process of attracting capital from foreign investors. One of the most influential models in literature used as an assessment for choosing an entry mode to a certain foreign market is undoubtedly Dunning's "eclectic paradigm" or these called OLI-model (Dunning, 2001). The OLI model consists of three groups of factors. The “O” factor stands for ownership advantages, the “L” factor stands for locational advantages, and the “I” factor stands for internalization advantages. This model explains that if a company owns rare resources and competency enabling it to achieve competitive advantage, then it would be best to use a model of full ownership as internalization model, since it provides the best opportunity to exploit the rare resources it possesses (Stoian & Filippaios, 2008). Contemporary literature on foreign direct investment expands the OLI model, especially the part that refers to specific assets or resources and to quasi-internationalization, in other words, internationalization through non-ownership organizational forms – networks and alliances (Scott-Kennel & Enderwick, 2004).

There is no dilemma in literature regarding numerous determinants affecting the process of attracting foreign direct investment but on the other hand, there is a great deal of disagreement on how significant the impact of chosen determinants actually is (Wei, Liu, Parker, & Vaidya, 1999). There are also opposing opinions on whether economic growth has an impact on FDI, or the FDI have an impact on the economic growth (Pritchett, 2000), or it is simply the matter of cause-effect relationship. Thus, researching thirteen countries of Central and Eastern Europe, in the period from 1989 to 2006, when foreign direct investment recorded a continuous upward trend, and therefore confirmed the substantial positive effect on the economic growth, Neuhaus (2006) confirmed that countries with a high inflow of FDI had high growth rates as well. In the post-crisis period, foreign direct investment has a large role in dynamics of economic growth and strengthening of export competitiveness in Serbia (Radukić & Randelović, 2014).

Earlier researches focused mainly on entry of western developed companies into markets of developing countries in Central and Eastern Europe, using OLI variables (ownership, location and transaction costs) as their starting point (Erramilli & Rao, 1990; Agarwal, S. 1994; Aulakh & Kotabe, 1997; Meyer, Estrin, Bhaumik & Peng, 2009). According to (Meyer et al, 2009) in the initial years of transition, in the countries of Central and Eastern Europe, privatization was performed in form of partial acquisition. It can be said that the privatization was done by the principal of partial ownership of a state-owned company, where the state retained part of the ownership since the government did not allow total acquisition of state-owned companies. In their empirical study about entry modes of developed western countries into developing countries of Eastern and Central Europe,
Bevan & Estrin (2004) arrived at a conclusion that the very announcement of a country’s accession to the European Union increases its attractiveness, leading to an increase in foreign direct investment i.e. models of full ownership. Authors further claim that workforce costs are a dominant factor in choosing a country, in other words, they follow efficiency seeking strategy. Dunning (2001) claims that building an infrastructure represents the most important factor in creating competitive advantage of a country and region especially in European countries in transition. Derado (2013) dealt with studying determinants that impact the attraction of the foreign capital by studying bilateral flows between pairs of Eastern European countries in order to determine whether Croatia used all its potential to attract foreign investment.

The structure of research is as follows. After the introduction, a detailed literature is manifested by similar studies that have explored the role and importance of foreign direct investment and relation to market size, competitiveness and employment in the world. The paper analyzes the next determinants: gross domestic product per capita, gross domestic product, share of industry in GDP and share of employment rate in total population.

The third segment shows macroeconomic framework in selected countries of South East Europe: Albania, Bosnia and Herzegovina, Bulgaria, Macedonia, Romania and Serbia from 2000 to 2012. After that, the methodology includes panel model creation with aim to identify the impact of macroeconomic factors on foreign direct investment. Also, the results reflect which factors are essential for foreign direct investment in selected countries. Finally, the last segment summarizes the conclusions with emphasis on future research.

**LITERATURE REVIEW**


Martinez-Zarzoso et al (2003) confirmed that a higher income in some country attracts the foreign investor interest to invest in that country. Likewise, author Stefanović (2008) pointed out that high growth rate of GDP per capita have positive impact on foreign direct investment inflows.

Also, a large number of papers researched the impact of GDP growth rate on foreign direct investment inflows (Ranđelović-Petrović, Milić-Janković & Kostadinović (2017), Aseidu (2002), Somlev & Hoshino (2005), Ang & Michailov (2008)).

The authors Ranđelović-Petrović, Milić-Janković & Kostadinović (2017) examined the relationship between market size and market growth rate on foreign direct investment in selected Western Balkan countries and concluded that these variables have a significant and positive impact on foreign direct investment.

Based on 30 empirical research conducted in developing countries and transition countries, the authors (Hornberger et al, 2011. in Ranđelović-Petrović, Milić-Janković & Kostadinović, 2017) confirmed a significant and positive relationship between market size and market growth rate on foreign direct investment inflows.

Bevan & Estrin (2004) researched the entry of developed western countries of EU into Eastern and Central European countries and results show the importance of market size to attract foreign direct investment.

Campos & Kinoshita (2003) used panel data regression analysis to study 25 transition economies to study in the period from 1990 to 1998. They concluded that market size has a significant impact on foreign direct investment. Also, Kudina and Jakubiak (2008) as well as Resmini (2000) investigated significant and positive impact of market size on foreign direct investment in transition countries.

Shukurov (2016) researched the determinants for attracting FDI in transition countries with a special emphasis to the countries of Commonwealth of Independent States (CIS) countries, from 1995 to 2010. The results concluded that due to higher risk in transition countries, the choice of FDI location always depends on FDI stock, market size, abundance in natural resources and fiscal imbalance and inflation.
The author Aseidu (2002) studied economic factors in selecting an investment type for chosen countries of the African continent. Based on the research, it is concluded that the growth rate of GDP per has a positive impact on foreign direct investment. Ang & Michailov (2008) studied determinants for attracting foreign direct investment in Malaysia in the period from 1960-2005. They arrived at the conclusion that the real GDP has a significant positive effect on the inflow of foreign direct investment, whereas GDP growth rate has a moderately positive effect on the inflow of foreign direct investment. The author Nasir (2016) also confirmed positive and significant impact market size on foreign direct investment in Malaysia.

Researching developing countries authors (Kok & Ersoy (2009), Aqeel & Nishat (2004), Sasi & Hristos (2015), Demirhan & Masca (2008)) confirmed significant and positive impact of market share on foreign direct investment.

In addition to market size (GDP per capita) and market growth rate (GDP growth) as the most tested variables in empirical research, the employment share in total production as well as industry share stand out as important determinants for attracting FDI (Marjanović & Marjanović (2014), Villaverde & Maza (2012), Somlev & Hoshino (2005)).

Likewise, the industry is a development driver for the economic sector, productivity and employment of the national economy (Marjanović & Marjanović, 2014). More industry's share of gross domestic product represents an essential factor for attracting foreign investors. Authors Somlev & Hoshino (2005) confirmed significant impact the industry share growth of GDP on foreign direct investment inflows. Villaverde & Maza (2012) studied the impact of 16 determinants on attracting foreign direct investments (FDI) in the Spanish market. They divided the stated factors into four big groups: (a) economic potential, (b) workforce conditions, (c) market and (d) competitiveness. Their findings show that workforce conditions and competitiveness, among which factors are the employment rate and share of industry GDP in the total GDP, have significant impact on the attractiveness of FDI.

Based on previous literature review, it is created a conceptual framework for defining a research problem, which relates to the examination of factor's influence in external environment on the process of attracting foreign investment in the market of Southeastern European countries.
MACROECONOMIC FRAMEWORK IN THE SOUTHEASTERN EUROPEAN COUNTRIES

In order to analyze the impact of macroeconomic factors on the foreign direct investment in selected countries: Albania, Bosnia and Herzegovina, Bulgaria, Macedonia, Romania and Serbia, it is necessary to show their trend during the observed period.

![GDP Growth (2000-2012)](image)

*Figure 1 Gross domestic product in Southeastern European countries (%)  
Source: Authors based on World Bank*

Looking at GDP growth rate in selected countries, it can observe a similar trend during the period. Specifically, this applies particularly to the period before and after the crisis. In the pre-crisis period, the countries of Southeast Europe had an average GDP growth rate of 5.29%, where Albania, Bulgaria and Romania had the highest growth rates. However, in 2009 there was an average decline of 2.55%, whereas GDP declined for 5% and 6.8% in Bulgaria and Romania. Likewise, other countries recorded negative GDP growth rates, except Albania which had a positive GDP growth rate of 3.7%. In analyzing the last three years, the average GDP rate stood at 0.18%, which is far less than the level of the pre-crisis period. One of the reasons for this is the lower level of foreign direct investment in observed countries.

Based on Figure 2, Bulgaria and Romania are the leaders in terms of the level of foreign direct investment. As we can see, Romania had the highest level of 11450 million dollars in 2006 while Bulgaria attracted 13875 million dollars in next year. This is more even in other countries in the analyzed group for the observed period. For example, the maximum
level of foreign direct investment is 4968 million dollars in Serbia while other countries attracted far less.

Figure 2 Foreign direct investments in Southeastern European countries (millions $)
Source: Authors based on World Bank

Figure 3 Competitiveness and employment in Southeastern European countries (%)
Source: Authors based on World Bank
Figure 3 represents the movement of competitiveness and employment in Southeastern European countries in the period 2000-2012. Looking at countries, industry's share is the highest in Romania about 40% compared to Albania where it is the lowest share, which can be attributed to the level of economic development in these countries. Looking at the trend, it is most reduced in Macedonia by 8.4%, as well as Albania and Serbia, while there was an increase in other countries, especially in Romania with 8.9%.

**DATA AND METHODOLOGY**

This segment is focused on the presentation data and examination effect of observed factors on foreign direct investment. The analysis includes panel model of six countries for the period 2000-2012, using a secondary database of World Bank. Selected countries are: Albania, Bosnia and Herzegovina, Bulgaria, Macedonia, Romania and Serbia.

<table>
<thead>
<tr>
<th>Table 1 Review of variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>Dependent variable</td>
</tr>
<tr>
<td>Independent variables</td>
</tr>
<tr>
<td>GDPgrowth</td>
</tr>
<tr>
<td>IND/GDP</td>
</tr>
<tr>
<td>EMP/TOTP</td>
</tr>
</tbody>
</table>

Based on Brooks (2008) panel model is reflected as:

\[ Y_{it} = \alpha + \beta x_{it} + \mu_{it} \]  

\( Y_{it} \) = foreign direct investment (LOGFDI)  
\( \alpha \) constant  
\( \beta x_{it} \) = coefficients of the variables (LOGGDPpc, GDPgrowth, IND/GDP, EMP/TOTP)  
\( i = 6 \) countries  
\( t = 2000 - 2012 \)  
\( \mu_{it} \) = residual

The explanatory variables include:

**Dependent variable:**

LOGFDI - logarithmically value of foreign direct investment which is measured by millions $;
Market size factors:
LOGGDGPpc - logarithmically value of gross domestic product per capita which is measured by millions $;
GDPgrowth - growth rate of gross domestic product measured by percentage;

Competitiveness factors:
IND/GDP - measured by ratio of industry to gross domestic product by percentage;

Employment factors:
EMP/TOTP - measured by ratio of employees to total population by percentage;

RESULTS

In this part of the paper, the results are presented from a model which examines the impact of factors related to market size, competitiveness of the economy and employment in Southeastern European countries.

Table 2 Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGFDI</td>
<td>78</td>
<td>6.830256</td>
<td>1.315752</td>
<td>3.95</td>
<td>9.54</td>
</tr>
<tr>
<td>LOGGDGPpc</td>
<td>78</td>
<td>8.144487</td>
<td>0.2527442</td>
<td>7.64</td>
<td>8.7</td>
</tr>
<tr>
<td>GDPgrowth</td>
<td>78</td>
<td>3.785897</td>
<td>3.296071</td>
<td>-6.8</td>
<td>9.1</td>
</tr>
<tr>
<td>LOGGDP</td>
<td>78</td>
<td>7.562051</td>
<td>1.070122</td>
<td>5.84</td>
<td>9.92</td>
</tr>
<tr>
<td>IND/GDP</td>
<td>78</td>
<td>28.26026</td>
<td>6.363221</td>
<td>11.56</td>
<td>42.78</td>
</tr>
<tr>
<td>EMP/TOTP</td>
<td>78</td>
<td>43.75256</td>
<td>7.770953</td>
<td>29.6</td>
<td>60.3</td>
</tr>
</tbody>
</table>

Source: Author's calculation based on STATA

Table 2 reflects descriptive statistics of the explanatory variables for observed countries and includes 78 observations from 2000 to 2012. As it can see, EMP/TOTP and IND/GDP have the highest standard deviation, which is almost two or three times more compared to other variables.

Table 3 VIF test

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGGDGPpc</td>
<td>1.88</td>
<td>0.531435</td>
</tr>
<tr>
<td>IND/GDP</td>
<td>1.44</td>
<td>0.694895</td>
</tr>
<tr>
<td>EMP/TOTP</td>
<td>1.34</td>
<td>0.747059</td>
</tr>
<tr>
<td>GDPgrowth</td>
<td>1.15</td>
<td>0.873249</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>1.45</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author's calculation based on STATA

VIF test is used to determine the validity of the model and exclude potential multicollinearity between independent variables. Based on the value, it can be noted that there is no problem of multicollinearity, since the reference value is less than 4.
Table 4 Hausman test

<table>
<thead>
<tr>
<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random effect model vs fixed effect model</td>
<td>[ \chi^2(6) = (b-B)/<a href="b-B">(V_b-V_B)^{-1}</a> = 7.68 ]</td>
</tr>
<tr>
<td>Prob&gt;\chi^2 = 0.02</td>
<td>Fixed effect model</td>
</tr>
</tbody>
</table>

Source: Author's calculation based on STATA

In order to choose an adequate model, the Hausman test is included and as it can see, p-value (0.02) is less than 0.05 which means that fixed effect model is an appropriate model. Next table involves the impact of observed variables on foreign direct investment.

Table 5 Panel regression model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>T</th>
<th>P&gt;(t)</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGGDPpc</td>
<td>4.266033</td>
<td>.417753</td>
<td>10.21</td>
<td>0.000</td>
<td>3.43242 5.099646</td>
</tr>
<tr>
<td>GDPgrowth</td>
<td>.1014672</td>
<td>.0221671</td>
<td>4.58</td>
<td>0.000</td>
<td>.0572334 1.45701</td>
</tr>
<tr>
<td>IND/GDP</td>
<td>-.0466559</td>
<td>.0286238</td>
<td>-1.63</td>
<td>0.108</td>
<td>-.1037737 .0104619</td>
</tr>
<tr>
<td>EMP/TOTP</td>
<td>-.0042823</td>
<td>.0282217</td>
<td>-0.15</td>
<td>0.880</td>
<td>-.0605979 .0520332</td>
</tr>
<tr>
<td>C</td>
<td>-2.547276</td>
<td>.88532</td>
<td>-2.88</td>
<td>0.004</td>
<td>4.282471 .8120806</td>
</tr>
</tbody>
</table>

R-squared 0.7337
Prob>\chi^2 0.0000
Number of observation 78

Source: Author's calculation based on STATA

Table 5 represents panel regression model which measures the impact of four independent variables on foreign direct investment which is the dependent variable. Based on the result, it can see the positive impact of LOGGDPpc and GDPgrowth on foreign direct investment. On the other hand, IND/GDP and EMP/TOTP negatively affect on the observed variable. Likewise, it is important to emphasize LOGGDPpc and GDPgrowth have a significant impact on LOGFDI, while the effect of other variables is not statistically significant. The validation and reliability of this model are manifested in a high value of R-squared 0.7337.

CONCLUSION

Based on the results in panel regression model, it can conclude that market size factors have a significant impact on foreign direct investment foreign in the countries of Southeast Europe. Gross domestic product per capita and gross domestic product growth rate have had a significant positive impact on foreign direct investment, which is in accordance with a number of...
empirical studies that have also confirmed a significant impact of market factors (Randelović-Petrović, Milić-Janković & Kostadinović (2017), Aseidu (2002), Ang & Michailov (2008), Campos and Kinoshita (2003), Kudina & Jakubiak (2008), Nasir (2016), Resmini (2000), Kok & Ersoy (2009), Aqeel & Nishat (2004), Sasi & Hristos (2015), Demirhan & Masca (2008)). This market was attractive in the period from 2000 until the escalation of the global economic crisis due to an unused market potential which creates an opportunity for profitable investment because of the high growth rates of the market.

In mid-2008, Serbia reached only 72% of GDP from 1989. Although, only three countries of Southeast Europe exceeded the level of GDP from 1989, where Albania reached in 2000, Macedonia in 2008, while Serbia was in the worst position. One of the less developed countries, Bosnia and Herzegovina achieved a 84% level of GDP from 1989 (Uvalić, 2012, p. 205). In the period from 2001 to 2009, Romania, Albania, Bulgaria and Serbia had GDP growth rate over 5%. After the escalation of the global economic crisis, there was a sharp decline of growth rate in all of Southeastern European countries, which is negatively affected by foreign direct investment. From 2011, investment activity has increased in this region. The industry's share of gross domestic product had affected the foreign direct investment inflows, but in a way that countries, which have smaller industry's share, attract more investment because of unused industrial potential, and thus the opportunities for greater growth of foreign direct investment. The results show that foreign direct investment significantly affected by market share Southeastern European countries.

The contribution is manifested in the fact that paper gives adequate information support to policy makers about the impact of different factors on foreign direct investment. This is particularly important for the countries of Southeastern Europe, where economic growth is largely dependent on the foreign direct investment inflows. Future research will be focused on expanding other factors such as the labour conditions, productivity and taxes which can have a significant impact on foreign direct investment. Similarly, a comparison with other EU countries can give certain answers in terms of the diversity of influence and importance of selected factors.

REFERENCES


Утицај макроекономских фактора на стране директне инвестиције у одабраним земљама Југоисточне Европе

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Резиме
У условима глобализације стране директне инвестиције представљају један од најзначајнијих развојних ресурса савремене светске привреде и један од важнијих фактора развоја националних економија. То се нарочито односи на земље југоисточне Европе које су прешле са планског концепта привреде на либералнотржишни концепт. Сходно томе, интерес земаља се у привлачењу стране директних инвестиција будући да оне доприносе привредном расту, модернизовању привредне структуре, расту производње и конкурентности, као и извозне оријентације и порасту запослености. У раду су испитивани фактори који утичу на прилив стране директних инвестиција у одабраним земљама југоисточне Европе: Албанија, Босна и Херцеговина, Бугарска, Македонија, Румунија и Србија, у периоду од 2000. до 2012. године. Анализирани фактори подељени су у неколико група: а) величина тржишта посматрана је кроз логаритмовану вредност бруто домаћег произведа по глави становника и стопу раста; б) конкурентност привреде анализирана је кроз учешће индустрије у бруто домаћем производу и в) запосленост је посматрана кроз учешће запослених у укупној популацији. Коришћењем одговарајућих тестова, представљен је модел који одражава значајност утицаја одабраних фактора. Истраживање је показало да величина тржишта позитивно утича на прилив стране директних инвестиција, док с друге стране, учешће индустрије у БДП-у и запосленост имају негативан утицај на стране директне инвестиције. Исто тако, утицај датих варијабли значајан је само у погледу ефеката величине тржишта на прилив стране директних инвестиција у посматраним земљама југоисточне Европе.


