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[ijmp@ijmp.jor.br](mailto:ijmp@ijmp.jor.br)

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Mitic, Branislav; Ivic, Mladen

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## THE IMPACT OF FOREIGN DIRECT INVESTMENT ON EXPORT PERFORMANCE: CASE OF EUROPEAN TRANSITION ECONOMIES

*Branislav Mitic, PhD  
ITS Information High School, Republic of Serbia  
E-mail: mmmbane@gmail.com*

*Mladen Ivić, PhD  
Faculty of Economics, UPIM, Bosnia & Herzegovina  
E-mail: ivic.mladen@gmail.com*

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### ABSTRACT

One of the most important conditions for successful process of economy restructuring and efficient return into the global market framework of transition countries from Central and Eastern Europe, including Balkans region, is opening of these economies towards foreign investors. Export orientation of multinational companies has a significant impact on transition economies, especially from the Balkans, which are still fragile and exposed to different pressures. European integration processes also had the great effect, especially on the changes in the foreign trade exchange of transition economies and countries which were able to strengthen the exports sector and provide high level of exports, have gone through the process of transition more quickly and easily. The research presented in this paper is focused on the effects of foreign direct investments (FDI) in the last two decades, regarding relation of FDI to the export of goods and high-tech exports in transition economies, based on correlation analysis and including time-lag of one year. This analysis is covering eleven transition countries that are currently at different levels of economic development.



As an imperative and guideline for the future, remains the focus on export oriented foreign direct investments, in order to harmonize two strategies on two fields: export competitiveness and attracting FDI.

**Keywords:** Foreign Direct Investments, European transition countries, Exports, High-tech exports, Correlation, Strategy, Competitiveness.

## 1. INTRODUCTION

According to statistical data (UNCTAD, 2014) regarding global flows of foreign direct investment - FDI, there is cautious optimism about current level of FDI inflow and also about estimates for the next period. In developed countries, FDI flows recorded growth in 2013 (by 9%) and now they are at a level of 566 billion \$, accounting for 39% of the global total FDI inflows, while developing economies are new on their maximum of up to 778 billion \$, which represents 54% of total FDI globally. Transition and developing countries now account for half of the top 20 countries ranked according to the FDI inflows. At the same time, output FDI flows of developing countries also recorded a record level.

Foreign direct investment flows in transition countries are at record levels, recorded a growth of 28% and in 2013 reached the level of 113 billion \$ (UNCTAD, 2014B). In the region of Southeast Europe - SEE, FDI flows recorded increase from a level of 2.6 billion \$ in 2012 up to 3.7 billion \$ in 2013, mostly as the consequence of the privatization of the remaining state-owned enterprises in the services sector. FDI were affected not only by low production costs, but also by the EU accession process or EU membership. We also must emphasize an important role of the EU countries that have contributed significantly intensifying FDI flows, both in the role of investors and in the position of recipients of investment. The EU countries account for more than two-thirds of the total inward FDI stock of SEE countries. However, there are no major dilemmas about future FDI flows in the SEE region, which will largely depend on regional stability, both in economic and also in political terms.

Having in mind all these conditions on a global level, from the aspect of FDI, as well as the mentioned position of all European transition countries, in this study we examined the impact of FDI on export performance, in the domain of goods and high-tech exports. The study begin with the hypothesis that there is a strong correlation between FDI inflows on the one hand, and exports of goods and high-tech



exports on the other. So, this means the assumption is that FDI contributed to the strengthening of export performance of transition economies in the last two decades.

The analysis refers to eleven countries from the region of Central, Eastern and Southeastern Europe. Countries are different not only by the inward FDI stock, but also by many other indicators. For example, macroeconomic indicators vary significantly from country to country: according to data for 2013 (UNCTADSTAT, 2015), GDP expressed in million \$ was the least in Albania - 12,649, and the highest in Poland - even 516,534. Also, GDP per capita varies considerably between countries: from 3986 \$ and 4741 \$ in Albania and Bosnia & Herzegovina (respectively), to 19009 \$ and 22606 \$ in Estonia and Slovenia (respectively). In addition, some of the countries are in the process of joining the EU, while some other have already become EU member states, taking into account all three cycles of EU enlargement - starting with the Czech Republic, Poland, Slovakia, Slovenia and Estonia in the first round, through Romania and Bulgaria in the second round and finally Croatia in the third round of enlargement process.

The first part of this work discusses the theoretical frameworks of research, based on the results of relevant studies from the previous period. In the next segment of work, we are explaining the sources of data used for calculations in this paper, with mentioning different recommendations and experiences of other authors regarding statistical series. We analyze the differences among the countries that are the subject of our research, with a focus on macroeconomic indicators which are relevant to our calculations. Research methodology applied in this study is particularly explained, as well as the problem with time-lag, which is unknown factor not only in this study but also in many other studies in this field. In the next part we present results of our research, diversified into two segments: the relationship between FDI and exports of goods and between FDI and high-tech exports. Finally, we are giving concluding remarks with some guidelines for the future.

## **2. IMPACT OF FDI ON THE ECONOMY AND EXPORT PERFORMANCE OF TRANSITION COUNTRIES: THEORETICAL FRAMEWORK**

Taking into account the findings of previous research works, first we will look at the results related to the impact of foreign direct investment in overall economic growth, in transition countries as well as in developing countries at all. Results of



many earlier studies refers to a positive impact of FDI. Asteriou, Dassiou and Glycopantis, based on the theoretical model, finds a positive relationship between FDI and economic growth (ASTERIOU; DASSIOU; GLYCOPANTIS, 2005).

It should be noted that in the transition countries still present both politically and risks of institutional character, which is particularly in connection to the less protection of creditors; mentioned determinants may even affect negatively on attracting FDI, viewed in the longer term (ALFARO; ÖZCAN; VOLOSOVICH, 2005).

Ahmadi and Ghanbarzadeh (2011) note that developing countries probably still do not have adequate investment policy to attract more FDI, or even, as the authors note, this policy is completely wrong conceived (AHMADI; GHANBARZADEH, 2011). For European countries in transition, relationship with the EU is very significant. The impact of the EU accession process on the FDI inflow in European transition countries are examined by Bevan and Estrin, in a study related to 11 countries in transition (BEVAN; ESTRIN, 2000).

Based on the results of regression analysis, they concluded that there is a direct impact of the integration process on FDI inflow in European transition countries, and correlation was positive. The authors also showed that the process of joining the EU did not have a direct impact on credit rating of transition countries, but that the dynamics of this process involves a certain time-lag.

Consequently, this impact can be defined as indirect: the influence of the increase in FDI inflows, after a certain period of time, obvious increase of overall economic performance, which improves the ranking of countries in terms of credit rating, and this increase in credit rating indicates a positive impact on the growth of FDI inflow. FDI positively affect the growth of the economy of developing countries, while in the case of developed countries, the effects are much less evident (JOHNSON, 2005).

Acaravci and Ozturk (2012) analyzed the causal relationship between economic growth, exports and foreign direct investment in ten European transition countries that are members of the EU1 (ACARAVCI; OZTURK, 2012). Results of this study indicate that the prospects for overall economic growth depend on the

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<sup>1</sup> Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.



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implemented policies to promote foreign direct investments. The authors emphasize that the most effective way to attract FDI is to focus on free trade zone, trade regime, tax benefits, human capital in the host country, regulations of financial markets, financial system and the quality of infrastructure.

The positive impact of FDI inflows as a result of empirical studies, therefore, as already mentioned, is often figure in the research results, but it certainly does not mean that there are no some opposing viewpoints. Stančík (2007) analyzed the horizontal and vertical spillover effects of foreign direct investment in the Czech Republic (STANČÍK, 2007).

The author gave an explicit statement that foreign investors negatively affect the performance of domestic companies and considers that domestic companies basically do not have the capacity to achieve a satisfactory level of competitiveness; this is particularly evident in intra-sectorial analysis. Bilas also finds that FDI affect the displacement of domestic companies from the market due to intensive competition in the market (BILAS, 2006); moreover, the deterioration of the current account balance is evident, if the newly created company imported more goods; also there are disturbances in the labor market. Lipsey also emphasizes the negative impact of FDI on economic growth (LIPSEY, 2002).

Pejaković, on the other hand, does not deny the positive effects of FDI on economic growth and strengthening competitiveness but he notes that FDI can not be the answer to all problems that countries in transition are faced with; he further points out that a clear economic development strategy of the country is necessary, with the incorporated strategy of attracting FDI (PEJAKOVIĆ, 2011).

Considering the impact of FDI on exports of European transition countries, we must primarily have in mind the initial conditions of these economies, together with the fact that many of these countries, before the collapse of SEV<sup>2</sup>, were mainly suppliers of raw materials in the OECD countries; during the nineties, however, there was an increase of share of final production and the simultaneous reduction in the share of raw inputs in total exports of these countries; this shift was much more

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<sup>2</sup> Warsaw Pact, signed in 1955; member states: SSSR (the Soviet Union), Romania, Bulgaria, DDR (Democratic Republic of Germany - Eastern Germany), Hungary, Albania (later abandoned), Poland and Czechoslovakia.



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evident in foreign trade exchange with EU countries than with the less developed countries; that fact implies the conclusion that the increase in exports of industrial components on the EU market, in fact, recompensed the stagnation of exports to other markets (KAMINSKI, 2000).

There are different influences on the structure of goods exchange, and European transition countries had different results in this field: some of them have succeeded and significantly changed the structure of exports while the other faced with the growing imbalance in the international exchange of goods; in addition, there is evidence of a positive relationship between FDI, the level of specialization and changes in export structure in favor of products with higher value added. (LOVRINČEVIĆ; BUTURAC; MARIC, 2004).

For all developing countries, the impact of FDI on exports is also important in terms of defining the relevant strategies; FDI can strongly influence the growth of exports (SHAW; SHEN, 2013). Kaminski and Riboud warns that it is not disputed that higher potential economic growth attracts capital investment, but we should not forget that these effects occur with a time lag, while this effect does not diminish their importance; also, a negative impact on the current account is particularly present when FDI are aimed at producing for the domestic market, particularly in an effort to bypass customs. (KAMINSKI; RIBOUD, 2000).

The impact of FDI on the acceleration of productivity is considerably more evident in the case of economically developed countries, but the positive impact of FDI over time becomes more significant in terms of international trade relations for European transition countries (BAČIĆ; RAČIĆ; ŠONJE, 2004). EU membership was a key factor for attracting FDI and for foreign trade of countries in transition, including the shift of exports towards higher stages of production (KAMINSKI, 2000).

In the fifteen-year period, starting with 1994, including fifteen European transition countries, the FDI inflows and exports are positively correlated and complementary; at the same time, the correlation coefficients has slightly higher values than in the case study of the relationship between FDI and GDP; also, negative correlation that was found in the case of Bulgaria and Croatia becomes much more statistically significant by calculating time-lag of one and two years (MITIC, 2009 ).





Regarding the impact on industrial exports, the results of an UNCTAD study explicitly indicate that between FDI and industrial export there is a positive and significant correlation; also, FDI impact would be higher if the export could be much more technological intensive;<sup>3</sup> so, conclusion of this study is that the impact of FDI is evident, primarily in technology intensive exports (UNCTAD, 1999).

Taking into account the mutual relations of FDI, GDP and exports, Ahmadi and Ghanbarzadeh concluded that there is a positive link between these three macroeconomic variables (AHMADI; GHANBARZADEH, 2011). Foreign investments, which have an impact on the growth of export competitiveness of transition countries, can lead to positive economic processes; these benefits are, on the other side, affected by the position of certain countries in transition process (DIMITRIJEVIĆ; FABRIS, 2007).

### **3. METHODOLOGY OF RESEARCH AND DATA SOURCES**

The research presented in this paper includes eleven European transition countries: Albania, B&H - Bosnia and Herzegovina, Bulgaria, Czech Republic, Estonia, Croatia, Hungary, Poland, Romania, Slovakia and Slovenia. Sources of statistical series are as following: for inward FDI flows, expressed on an annual basis in the mill. \$ (UNCTAD, 2014c), the value of merchandise exports, expressed on an annual basis in the mill. \$ at current prices (UNCTADSTAT, 2015), and for high-tech exports, expressed on an annual basis in the mill. \$ at current prices (WORLD BANK, 2015).

For foreign direct investment and exports, correlation analysis covers the period 1993-2013. - for B&H, data series is available for the period 1998-2013. For the second segment of this research, correlation analysis between SDI and high-tech exports, the series is slightly limited by data available for high-tech exports, involving the period 1996-2012. with the exception of Bosnia and Herzegovina: 2003-2012.

Regarding statistical data that are the basis for calculations of interdependence and influence of FDI on macroeconomic indicators, the authors in some previous studies suggest that results may lose its relevance when the analysis takes too many countries that are at the same time at different stages and at different

<sup>3</sup> According to the results of this UNCTAD study: FDI are extremely important for technology intensive exports, with the elasticity of 0.78, which means that 1% increase in FDI per capita leads to a rise in technology intensive exports to 0.78%.



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levels of economic development, which points to the necessity to separate data series for the developed countries and the developing countries (Johnson, A., 2005). This author also recommends to avoid short time series, due to the effects of short-term business cycles. Variations in the results often have a cause in econometric methods which are used, as well as in the variables, that can be taken in nominal or real terms (AHMADI; GHANBARZADEH, 2011).

For correlation analysis in this study we used the coefficient of linear correlation between two variables in the sample, or the Pearson correlation coefficient ( $r$ ), which is calculated as:

$$r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

As we have already mentioned in the Introduction of this work, eleven European countries in transition, that are in focus of our research, have different macroeconomic indicators and they are at different levels of economic development. Except the difference in GDP and GDP per capita, cumulative incoming foreign direct investment (FDI inward stock) is drastically different between countries and according to the data for 2013 was the highest in Poland (approximately 252 bn. \$) and the smallest in Albania (6.1 bn. \$) - see the chart on Figure 1.

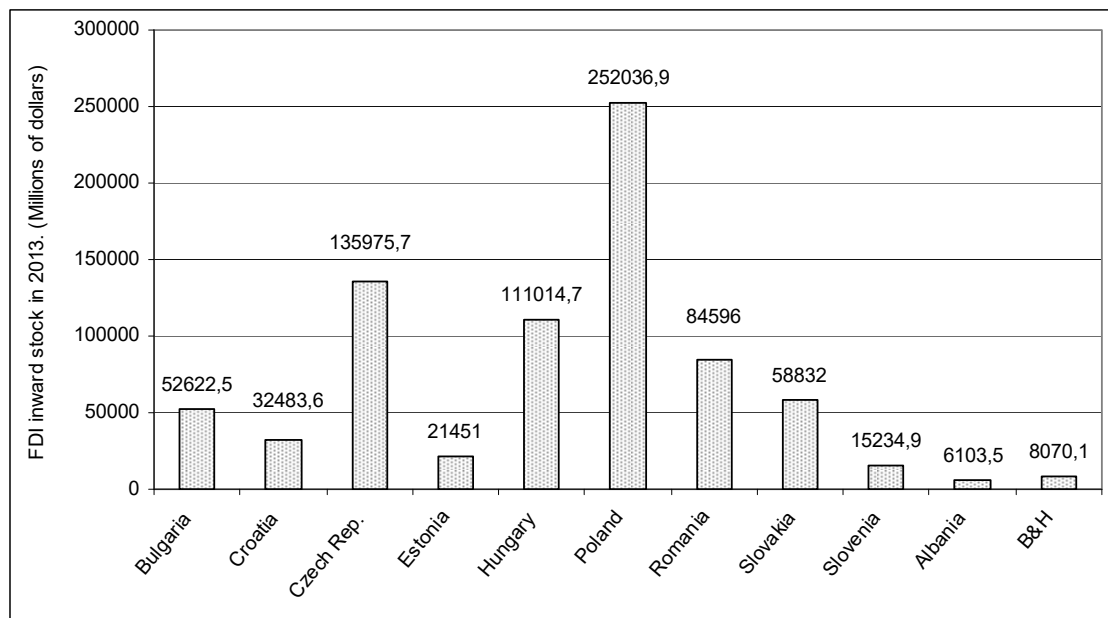


Figure 1: FDI inward stock, 2013. (Millions of US\$)

Source: UNCTAD, (2014) "World Investment Report JUNE 2014", Webtable 3. (<http://unctad.org/en/Pages/DIAE/WorldInvestmentReport/Annex-Tables.aspx>)



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From the aspect of FDI, it is interesting to analyze the cumulative inward FDI in relation to GDP. According to this indicator, in 2013, Bulgaria is the best positioned, followed by Estonia and Hungary (all three countries have a cumulative inward FDI relative to GDP above the level of 80%). Among all eleven observed transition countries, Slovenia is the worst positioned (less than 40 %). It is also interesting to note that, in 2013 comparing to 2000, the biggest growth is in the case of Albania (up to seven times), followed by Bulgaria and Croatia (approximately four-fold increase), while in Hungary and Slovakia this indicator is not even doubled.

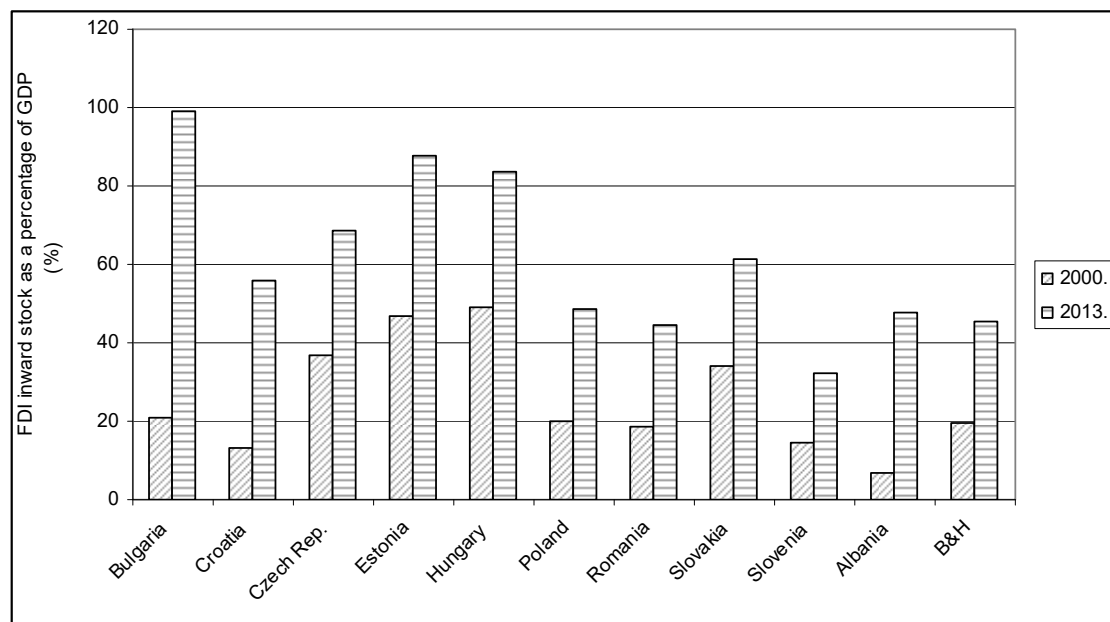


Figure 2: FDI inward stock as a percentage of GDP, 2000. & 2013(Percent)

Source: UNCTAD, (2014) "World Investment Report JUNE 2014", Webtable 7.

(<http://unctad.org/en/Pages/DIAE/WorldInvestmentReport/Annex-Tables.aspx>)

According to high-tech exports data (Chart in Figure 3), Hungary and the Czech Republic are clearly distinguishable in relation to other countries.

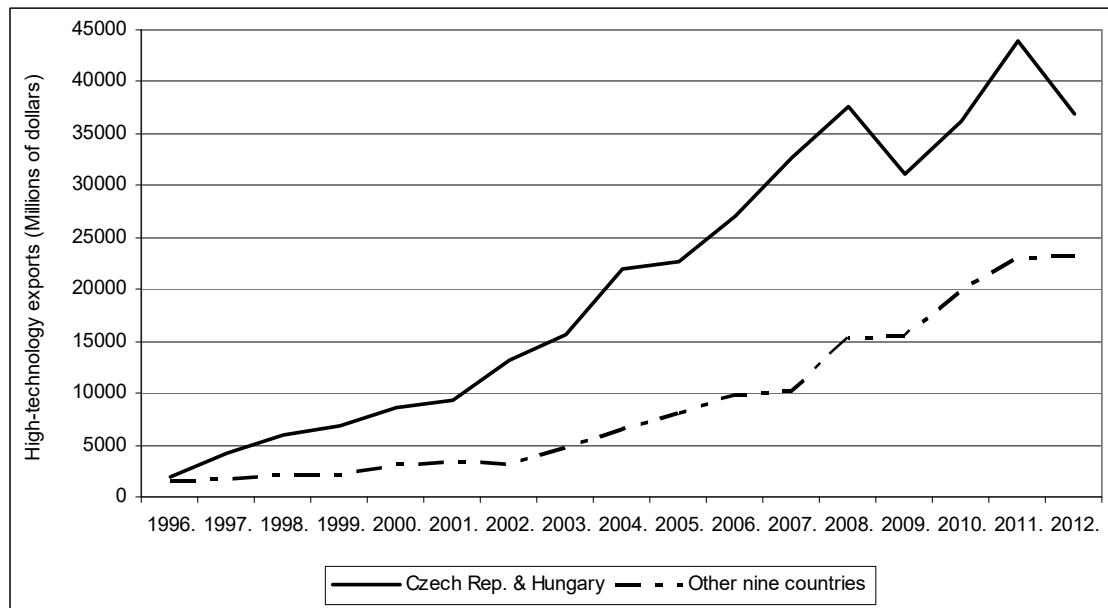


Figure 3: High-technology exports, Czech Republic and Hungary v.s. other nine countries, 1996-2012 (current US\$, in millions)

Source: World Bank, (2015): World Bank Database;

<http://databank.worldbank.org/data/views/reports/tableview.aspx> (19.02.2015.; 02.11)

Those two countries, previously mentioned, have a higher total values of this indicator in relation to all the other nine countries. What is even more interesting to notice, apart from this fact, is that during the whole period, earlier mentioned discrepancy between the two countries and other transition countries, noticeably increased.

The problem of time-lag is essentially evident when analyzing the correlation of FDI with any macroeconomic indicator. The reason for this is that from the moment of placement, the effects of foreign direct investments delayed for a certain period of time, which is difficult to identify in terms of the length of its duration. Also, the time-lag varies from country to country, so that fact further complicates its inclusion in econometric study.

Nunenkamp, in correlation analysis applied to 28 developing countries, examined the connection between FDI flows and GDP growth, FDI restrictions, risk factors and other variables, uses time-lag of two years (NUNNENKAMP, 2002). On the other hand, the cross-section regression analysis, done by Vidas-Bubanja, took a time-lag of one year, but in the end of analysis she concluded that it is possible that the time-lag of one year is not the one that shows statistically the best results; she

pointed that, probably, variable with higher time-lag, or even a combination of both, would show a statistically more significant connection (VIDAS-DRUM, 1998).

Many authors in their studies highlight the problem of time-lag as unknown; in some studies it does not even take into account, while the other usually calculated with a time-lag of one or two years, and for all countries linearly. This is the reason why, in a number of econometric analysis, conclusion is that difference in the final results could be possible if the different time-lag is calculated.

#### 4. RESEARCH RESULTS

Regarding the impact of FDI on exports, the results of correlation analysis showed that correlation exist between these two variables, although there is evidence of a certain variation among countries (see the table, Table 1). Pearson's correlation with respectable level of significance is evident in Bosnia and Herzegovina and Bulgaria (SEE countries) and the Czech Republic and Slovakia (CEE countries and EU member states from the "first round" of enlargement). Other values of Pearson's degree vary in the range of 0.446587747 (Hungary) to even 0.938930528 (Albania), but with the level of significance of 0.01 and 0.05, respectively.

Table 1: Results of correlation analysis: SDI / exports

|            | The mean value of FDI inflows | The standard deviation of FDI inflows | The mean value of merchandise exports | The standard deviation of merchandise exports | Pearson's correlation | Pearson's correlation (Time-lag: 1 year) |
|------------|-------------------------------|---------------------------------------|---------------------------------------|---|-----------------------|--|
| Albania    | 411.8857                      | 409.38118                             | 762.6005                              | 694.21709                                     | 0,938930528**         | 0,912386905**                            |
| B&H        | 452.4875                      | 426.64244                             | 2996.7063                             | 1943.24767                                    | 0,427737888           | 0,490109874                              |
| Bulgaria   | 2570.5810                     | 3383.82346                            | 12060.7857                            | 8951.75594                                    | 0,419500108           | 0,467635867                              |
| Czech Rep. | 4829.3190                     | 3082.18951                            | 73256.2095                            | 55056.97794                                   | 0,389474043           | 0,455402174                              |
| Estonia    | 968.5714                      | 846.50211                             | 7121.8381                             | 5191.24759                                    | 0,53905395*           | 0,648809047*                             |
| Croatia    | 1598.6048                     | 1556.62358                            | 7807.0352                             | 3718.89362                                    | 0,613511999**         | 0,613364593*                             |
| Hungary    | 4345.9048                     | 2800.95287                            | 54840.5714                            | 37650.63689                                   | 0,446587747*          | 0,466443812                              |
| Poland     | 9279.5857                     | 6319.13560                            | 84805.2381                            | 66791.29615                                   | 0,62263766**          | 0,749034062*                             |
| Romania    | 3606.1095                     | 3912.55271                            | 26486.3643                            | 20782.48324                                   | 0,49556447*           | 0,51658464                               |
| Slovakia   | 2338.2762                     | 1893.96871                            | 34244.0524                            | 28732.71258                                   | 0,255876282           | 0,400103222                              |
| Slovenia   | 567.2619                      | 543.93681                             | 17912.4238                            | 10806.17435                                   | 0,519523252*          | 0,444921644                              |

\* Correlation is significant at the 0.05 level

\*\* Correlation is significant at the 0.01 level

What should be noted and what attracts attention, is that the taking in account a time-lag of one year, as a result has higher values of Pearson's coefficient for eight out of eleven analyzed transition countries (worse score is only in the case of Albania, Croatia and Slovenia). So, countries with a significant increase in FDI inflows, with



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taking in account a time-lag of one year, recorded higher Pearson's coefficient when we are talking about merchandise exports.

**Table 2: Results of correlation analysis: SDI / high-tech exports**

|            | The mean value of FDI inflows | The standard deviation of FDI inflows | The mean value of high-tech exports | The standard deviation of high-tech exports | Pearson's correlation | Pearson's correlation (Time-lag: 1 year) |
|------------|-------------------------------|---------------------------------------|-------------------------------------|---|-----------------------|--|
| Albania    | 425.4706                      | 381.02490                             | 4.1065                              | 2.78624                                     | 0,771382862**         | 0,613550049**                            |
| B&H        | 613.4400                      | 470.41870                             | 62.0660                             | 38.67518                                    | 0,185728847           | 0,67410578                               |
| Bulgaria   | 3076.2353                     | 3577.45980                            | 403.7059                            | 340.61296                                   | 0,395120809           | 0,523566136                              |
| Czech Rep. | 5431.8647                     | 3015.90653                            | 9507.4294                           | 7464.62934                                  | 0,238818511           | 0,230757802                              |
| Estonia    | 1106.3941                     | 873.42102                             | 605.2529                            | 374.52325                                   | 0,187032557           | 0,174001719                              |
| Croatia    | 1921.2118                     | 1561.38855                            | 538.2529                            | 212.04368                                   | 0,551257634*          | 0,574370165*                             |
| Hungary    | 4675.4706                     | 2947.82482                            | 11432.8353                          | 6611.78317                                  | 0,32130827            | 0,224329009                              |
| Poland     | 10681.4471                    | 6179.95339                            | 3322.7941                           | 3199.88696                                  | 0,481096702           | 0,74225577                               |
| Romania    | 4191.6176                     | 4086.40890                            | 1412.4294                           | 1523.00183                                  | 0,205272371           | 0,376450186                              |
| Slovakia   | 2675.9647                     | 1898.80956                            | 1879.6059                           | 1807.04294                                  | 0,239217306           | 0,243812034                              |
| Slovenia   | 638.4294                      | 572.06158                             | 820.0353                            | 431.42165                                   | 0,4664686             | 0,60007078                               |

\* Correlation is significant at the 0.05 level

\*\* Correlation is significant at the 0.01 level

Researching the connection of inward FDI with high-tech exports, the result indicate a stronger interdependence between these two variables, with much higher level of statistical significance (Correlation results are presented in the table in Table 2). With the exception of Albania, which has a maximum value of Pearson's coefficient (0.771382862) but with low statistical significance, and Croatia (0.551257634 with significance level of 0.05), Poland and Slovenia recorded the highest values of correlation (0.481096702 and 0.4664686, respectively). Results of analysis, therefore, indicate a significant level of correlation between FDI and high-tech exports.

Unlike the previous analysis, where we have examined the impact of FDI on exports, the influence of the time-lag of one year is a little less pronounced. Namely, four countries (Albania, Czech Republic, Estonia and Hungary) do not have larger values Pearson's coefficient when we took in account a time-lag, while the most dramatic increase of the degree of correlation we found in the case of Bosnia and Herzegovina and Poland (up to 0.488 and 0.261 for, respectively).

## 5. CONCLUSION

Analysis results that are presented in this paper generally indicate a significant level of correlation between FDI and export of goods, with the stronger correlation in the case of high-tech exports. These results confirm the hypothesis set at the



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beginning of the research that there is an correlation between FDI inflows on the one side and export of goods and high-tech exports on the other. We have taken into consideration recommendations of other authors to use much longer time series for calculation (Pearson's coefficient was calculated for the time series of 21 and 17 years), as well as we accepted suggestions to do the calculation with time-lag, regardless of controversy (discussed in the previous part of the paper) which relate to certain unknowns about time-lag.

Consequently to the results of this research, we can give some guidelines for growth of FDI invested in export-oriented activities, which are primarily associated with the political stability in the region. Qualitative index of political risk is an important determinant of FDI inflows. This is primarily concerning countries that are in the accession process but not yet become EU members, and considering the links between these economies with the EU market.

Based on past experiences, it should be pointed that European integration agreements increased the credibility of the governments in transition countries in terms of commitment to reforms and focusing on the opening of their economies. Another important precondition for attracting FDI is a constant work to improve the legal and institutional environment, together with simplification of administrative procedures.

For countries that made significant progress during the transition process (according to their macroeconomic indicators), which primarily refers to Hungary, the Czech Republic, Poland, Slovakia and Slovenia, it is necessary to resolve regional disparities of economic development and increasing the efficiency of local governments, especially in the field of regional infrastructure. Level of infrastructure development is, generally speaking, an essential prerequisite in terms of attracting FDI, which significantly determines the attractiveness of a country. In particular, we want to underline the necessity of intensive implementation of specific development tools (industrial and technology parks, free zones), in order to stimulate FDI inflows, especially export-oriented.

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