THE IMPACT OF FDI ON EXPORT PERFORMANCE: EMPIRICAL EVIDENCE

УТИЦАЈ СТРАНИХ ДИРЕКТНИХ ИНВЕСТИЦИЈА НА ИЗВОЗНЕ
ПЕРФОРМАНСЕ: ПРИМЕР ИЗ ПРАКСЕ

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Abstract: *The objective of this paper is to investigate empirically the impact of the FDI inflows on export performance of Macedonia and Turkey. To achieve this objective we use a popular model of export and estimate two models. The first (benchmark) model includes the real effective exchange rate, the potential GDP, trade liberalization and export in the previous year. Along with these explanatory variables, in the second model we include the FDI inflows variable. The results of the benchmark model indicate that trade liberalization has a positive and significant impact on export. The export performance is positively and significantly affected by the last year's exports. The estimated coefficient of real effective exchange rate is not statistically significant. The potential output has a positive impact on the increase of export but it is also statistically not significant. The results of the second model indicate that FDI have a positive impact on export performance of Macedonia and Turkey, but not significant.*

Keywords: *exports, foreign direct investment, pooled data, Macedonia, Turkey.*

1. INTRODUCTION

Export has been in the focus of economic literature and policy making for years due to its multi-fold contribution to achieving and maintaining macroeconomic stability, resolving severe macroeconomic problems, like unemployment and trade deficit, accelerating the economic growth and increasing the international competitiveness of economies. These contributions are of great importance for Macedonia and Turkey for accelerating their full membership of European Union. Recent empirical studies have proven that the membership in economic integrations, such as the European Union, have a positive impact on improving export performance on a long-term. Therefore the increase of export of EU candidate countries will depend greatly on the readiness of these countries to enter the international market more aggressively with improved international competitiveness of their goods and services.

In the recent years Macedonia and Turkey have been experiencing a constant growth of their total value of goods exported. In the period 2001-2011, despite the global financial and economic crisis which affected the whole world, Turkey's exports of goods increased 2,7 times

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and Macedonia's exports grew by 2,5 times. "The total value of the goods exported by Turkey in 2011 was roughly three times the value of export of all the other enlargement countries combined." (European Commission 2013, p. 80).

Table 1.: International trade in goods (in million EUR)

Country	Exports		Imports		Balance	
	2001	2011	2001	2011	2001	2011
EU-27	884707	1558415	979143	1717122	-94436	-158707
HR	5072	9582	9903	16281	-4831	-6699
ME	461	454	974	1823	-514	-1369
IS	2247	3839	2536	3472	-289	367
MK	1293	3198	1893	4986	-600	-1789
RS	3148	8058	8439	13706	-5291	-5648
TR	35055	96938	46256	173099	-11200	-76161
AL	340	1400	1486	3876	-1145	-2477
BA	1238	4203	4264	7939	-3026	-3736

Source: EUROSTAT Database, epp.eurostat.ec.europa.eu.

With regard to the relative importance of the exports of goods for the national economy (see Table 2), this indicator in 2011 was particularly high in Macedonia (43%), compared to 17,5 % in Turkey.

Table 2.: International trade in goods (% of GDP)

Country	Exports			Imports		
	2001	2006	2011	2001	2006	2011
EU-27	9,2	9,9	12,3	10,2	11,6	13,6
HR	19,7	20,8	21,3	38,5	43,0	36,2
ME	:	20,5	14,1	:	67,7	56,4
IS	25,5	20,7	38,1	28,7	35,9	34,5
MK	33,7	36,7	42,6	49,3	57,0	66,4
RS	:	21,4	25,9	:	44,9	44,0
TR	16,1	16,2	17,5	21,2	26,5	31,2
AL	7,5	8,8	13,2	32,7	34,0	39,1
BA	16,5	27,6	32,3	56,8	60,9	61,0
XK	1,9	2,6	6,9	36,1	42,1	50,9

Source: EUROSTAT Database, epp.eurostat.ec.europa.eu.

The European Union member countries are the main trading partners for Macedonia and Turkey. According to the European

Commission (2013), 60 % of all goods exported by Macedonia went to the EU-27, and 43% of Turkey's exports of goods were directed to the European Union (Figure 1).

Figure 1.: International trade of EU enlargement countries with EU-27

Source: EUROSTAT Database, epp.eurostat.ec.europa.eu.

Although in the last decade Macedonia and Turkey have been experiencing a constant growth of the value of exports of goods, with an average annual growth rate of 9% in Macedonia and 11% in Turkey, as a result of market-oriented reform processes, often associated with NATO and EU accession, the two analyzed EU candidate countries recorded far higher goods trade deficits as a percentage of the total trade volume (value of export and imports) in 2011. Turkey doubled its trade deficit, from 14% in 2001 to 28% in 2011, and Macedonia increased its deficit from 19% in 2001 to 22% in 2011.

Regarding the global foreign direct investment inflows to the EU candidate countries these countries “have attracted considerable FDI over the past decade, which to a large extent has helped in covering their current account deficits” (Orszaghova, et al., 2013, p.34).

**Figure 2.: Trade deficits of EU enlargement countries
(% of the total trade volume)**

Source: EUROSTAT Database, epp.eurostat.ec.europa.eu

The levels of the global FDI inflows to the EU candidate countries (see Figure 3) experienced a drop in most countries in 2002, after which an upward trend was generally observed until 2007, when they reached their peak, growing particularly strongly between 2005 and 2007 in Turkey (with rates of 240%, and 120% respectively). Macedonia recorded the largest growth of FDI inflows (by 7 times) in the period between 2005 and 2007. However, as a result of the worldwide financial and economic crisis, the global FDI inflows to Macedonia and Turkey declined sharply between 2007 and 2009 (by 3.5 and 2.5 times, respectively).

The EU-27 traditionally have been the largest sources of FDI inflows in the EU candidate countries. Macedonia recorded a five-fold increase in the amount of the EU-27's FDI inflows between 2005 and 2007, from EUR 45.8 million in 2005 to EUR 233 million in 2007. The FDI flows from EU-27's direct investors to Turkey increased significantly (by three times) between 2005 and 2007, peaking at EUR 15 billion in 2007. As a result of the global financial crisis and recession in Germany and other major EU economies, the FDI outward flows from the European Union to Macedonia have dropped sharply (by 60%) in 2010 compared to 2007. In the same time frame, the EU-27's FDI outward flows to Turkey in 2009 have decreased by 67% compared to 2007.

Figure 3.: Global FDI inflows to the EU candidate countries, annual, in millions of US Dollars, 2000-2012

Source: UNCTAD, FDI/TNC database www.unctad.org/fdistatistics

Having in mind that export is the engine of the economic growth, it is very important to estimate empirically the impact of FDI on export performance of the host (recipient) countries. While there are numerous theoretical and empirical studies about the relationship between FDI and export performance, there are no studies treating this issue in the case of Macedonia and Turkey as EU candidate countries.

The purpose of this paper is to investigate empirically the impact of the FDI inflows on the export performance of Macedonia and Turkey as EU candidate countries. The issue is important because the promotion of inward FDI in the sample countries as EU candidate countries is one of the key issues of their economic programs.

The paper is organized as follows: In Section 2 we undertake a brief review of the literature on the different potential effects of FDI inflows on the host countries' exports. In Section 3 we investigate a number of determinants that could influence export and estimate two specified econometric models. The last, fourth section discuss the obtained empirical results and draws some conclusions.

2. LITERATURE REVIEW

Below we undertake a brief review of theoretical literature and empirical studies regarding the direct and indirect potential effects of FDI inflows on the host country's exports.

From a theoretical point of view, the causality between FDI inflows and the the host country's exports can be explained with the Akamatsu's model of flying gees, Vernon's theory of Product Life Cycle (PCL) and the New Trade theory.

The model of Flying Geese which was introduced by Akamatsu (1962) establishes a complementary relationship between FDI and trade. According to this model the multinational enterprises (MNE) contribute to an increase of the host country's exports through utilization of the lower costs of production, mainly labor costs, which improves their competitiveness. The improved competitiveness of the MNE directly improves the export performance of the host country by increasing the export supply capacity of the host country, and indirectly through transfer of new technologies, equipment and managerial expertise into the host countries.

The product cycle theory (PCT) of trade, developed in 1966 by Raymond Vernon, is concerned with the life cycle of a typical "new product" and its impact on international trade. PCT was developed in response to the failure of the United States to conform empirically to the Heckscher-Ohlin model.

The PCT divides the life cycle of the new product into three stages. In the first stage, the new product stage, the product is produced and consumed only in the United States and no international trade takes place. In the second stage of the life cycle maturing product stage some general standards for the product and its characteristics begin to emerge, and mass production techniques start to be adopted. With more standardization in the production process, economies of scale start to be realized. In addition, foreign demand for the product grows, but it is associated particularly with other developed countries, since the product is catering to high-income demands. This rise in foreign demand (assisted by economies of scale) leads to a trade pattern whereby the United States exports the product to other high-income countries. In the maturing product stage U.S. firms may begin to assess the possibilities of producing abroad in addition to producing in the United States. If the production costs abroad are lower, then U.S. firms will tend to establish production facilities in the other developed countries. This relocation-of-production aspect of the PCT is a useful step because it recognizes - in contrast to H-O and Ricardo - that capital and management are not immobile internationally.

The final stage is the standardized product stage. By this time in the product's life cycle, the characteristics of the product itself and of the production process are well known and production may shift to the developing countries. Labor costs again play an important role, and the developed countries are busy introducing other products. Thus, the trade pattern is that the United States and other developed countries may import the product from the developing countries. In summary, the PCT postulates a dynamic comparative advantage because the country source

of exports shifts throughout the life cycle of the product. The dynamic comparative advantage, together with factor mobility and economies of scale, makes the product cycle theory an appealing alternative to the Heckscher-Ohlin model.

Applying Vernon's model at industry level, Kojima (1985) found when FDI is made in the sector in which the country of origin has comparative disadvantage and the host country has comparative advantage, then this kind of investment has trade creating effect implying that the host country's export will increase.

The new trade theory (NTT), developed in the late 70s and early 80s, represents a collection of economic models in international trade which concentrate on the role of increasing returns to scale and a preference for diversity in consumption opposite to the unlimited free trade theory which concentrates on the comparative advantage of countries with very different characteristics. However, the trade between countries with similar characteristics in the 20th century increased as such international trade allowed firms to save on costs by producing at a larger, more efficient scale, and because it increases the range of brands available and sharpens the competition between firms. This phenomenon initiated the development of other economic models which are based on the assumptions that some countries have advantages in producing certain goods and that there are difficulties in the globalization of trade. The authors of these models Krugman (1979) suggest that countries with an advantage in producing certain goods could benefit if they initially protect the trade of such goods. Many models of international trade have followed Krugman's model. Helpman (1984) and Helpman and Krugman (1985), assuming no transaction cost, argue if choice of location of production facilities is based on relative factor prices and recourse endowments, then, vertical FDI would cause trade creation effect in the form of export of finished product from affiliate company to parent company and intra firm transfer of intangible services from parent company to affiliate company.

The number of empirical studies on the effect of the inward FDI on export performance of host countries is relatively limited compared to that on productivity spillovers and they provide mixed results (positive, negative and weak impact) for different countries.

Aitken et al. (1997) investigated the role of geographic and multinational spillovers on the export decisions of local companies in Mexico in the period 1986-1989 by estimating a probit model. They find evidence that export activities by multinational firms positively affect the export activity of the domestic firms in the same sector of a firm in the same sector and region being an exporter.

By using panel data for companies in the United Kingdom in the period 1992–1996, Greenaway et al. (2004) find that the probability of exporting is affected positively by both total and MNE export activity, and that MNE employment, and not MNE export activity, generates positive spillovers on firms' export propensity

Ruane and Sutherland (2005) find similar evidence for Ireland for the period 1991–98 i.e. that the presence of multinational enterprises in one sector positively affects the decision of the domestic firms in that sector to export their good and services. However, they find that the export intensity of MNEs is negatively influenced by the export decision and export intensity of domestic firms on the manufacturing sector.

Kutan and Vuksic (2007) test the direct and indirect effects of FDI inflows in twelve Central and Eastern European economies in the period 1996–2004 and find that FDI have contributed to an increase of exports by increasing the domestic supply capacity and that FDI have indirect effects on exports only in the new member states of the European Union.

On the other hand, Khan and Leng (1997) do not find evidence that FDI affects the export of Taiwan and South Korea. By investigating a sample of U.S. manufacturing firms in the period 1984–1992, Bernard and Jensen (2004) finds evidence of negative spillovers of FDI on the export activities of the U.S. firms. Barrios et al. (2003) find no spillover from the export activities by MNEs on the likelihood of export by Spanish companies

While there are a number of studies on the determinants of inward FDI to Turkey and Macedonia [Erdilek (1982), Coskun (1996), Tatoglu & Glaister (2000), Halicioglu (2001), Erdal & Tatoglu (2002)], the number of studies that analyze the impact of FDI on the export performance of these EU candidate countries is very limited. The purpose of this paper is to contribute to the existing literature by investigating the direct and indirect effects of inward FDI on the export performance of Macedonia and Turkey as EU candidate countries.

3. DATA AND METHODOLOGY

The existing theoretical and empirical studies find the following variables: the real effective exchange rate, the gross domestic product (*GDP*), the ratio of trade openness, the cumulative FDI stock and the export from the previous period, as most significant determinants of export.

The real effective exchange rate (*REER*) is one of the most important determinants of a country's export. It serves as a proxy of a country's international competitiveness. Overvaluation of the local

currency reduces its exports due to lower competitiveness. On the other hand, the depreciation of the real exchange rate might increase country's exports through reduced prices of export goods. Therefore, it is expected the coefficient of REER to have a negative sign.

With regard to the FDI as a determinant of export, we take the FDI stock (*RFDI*) and not the FDI inflow in the host country, in order to assess the indirect FDI effects on the host country's export. If we include the FDI inflows, and not the FDI stock, as an explanatory variable in the model, it could happen that the value of FDI inflows into the host country in the first years of the sample period is very high compared to FDI inflows in the following years, which could reduce the significant impact of the FDI in the first years. Therefore, we include the variable cumulative FDI stock which is a proxy for the indirect effects of FDI on the host country's export. This variable enters our model with a lag of one period due to the fact that it takes some time for an export oriented FDI to build capacities in the host country and to achieve the desired level of production.

In order to differentiate between the direct and indirect effects of FDI on export performance, we also include the GDP per capita trend as a proxy for a domestic supply capacity. It is expected that this variable will encompass the effect of the increased domestic supply capacity as a result of FDI inflows. This variable also enters a model with a lag of one period as it takes time the increased domestic supply capacity to have an effect on increasing the value of export.

The country's trade openness degree (*TLI*) is obtained as a ratio between the sum of import and export of goods to GDP. This determinant is included into the model in order to account for the potential influence of trade liberalization measures taken by a country. The coefficient of this variable is expected to have a positive sign.

We have also included the real export from the previous period ($REXP_{t-1}$) in order to take into account the fact that export dynamics in one year is a good predictor of the export trend in next years.

Below we test the impact of the above described explanatory variables on real export, with specific focus on the FDI effects on host economies' exports by employing the models developed by Kutan and Vuksic (2007):

$$\ln REXP_{it} = \beta_0 + \beta_1 \ln GDP_{it-1} + \beta_2 \ln REER_{it} + \beta_3 \ln TLI_{it} + \beta_4 \ln REXP_{it-1} + u_i \quad (1)$$

$$\ln REXP_{it} = \beta_0 + \beta_1 \ln GDP_{it-1} + \beta_2 \ln REER_{it} + \beta_3 \ln TLI_{it} + \beta_4 \ln REXP_{it-1} + \beta_5 \ln FDI_{it-1} + u_i \quad (2)$$

where the subscript i denotes the EU candidate country and t denotes year in the period between 1999 and 2012. The model (1) is our benchmark model.

The estimation of the two models is based on the method of GLS, with country dummies in order to capture the unobserved country-specific variables, which influence countries' export performance using annual pooled data for Macedonia and Turkey for the period 1999-2012. For example country-specific variables can be the geographic position, natural resources or specific political conditions in the country and etc.

"To test the impact of FDI on exports, it is important that we control for the other determinants of exports". (Kutan and Vuksic, 2007, p.7) In the two model specifications we take the natural logarithm of real export ($\ln REXP$) as an endogenous variable and the natural logarithms of the following exogenous variables: the real effective exchange rate index ($REER$) in order to capture the impact of relative prices on the exports, the trend of real GDP per capita through Hodrick -Prescott filter (HP), which represents a proxy for domestic supply capacity, the level of trade openness (TLI) of the host countries measured by the sum of exports and imports as a share of GDP, and the real export from the previous year ($REXP_{t-1}$), since the export performance in one year should be a good predictor of the next year's exports. In the second econometric model we add the cumulative stock of FDI in the recipient countries (FDI). We use the real values of the dependent and all explanatory variables in order to eliminate the effect of price changes.

The data for the above described variables are obtained from the Eurostat database. However in order to obtain the real value of export and GDP per capita and the trade openness, we have made our own calculations. We have also tested the stationarity of all the variables and find out that all the variables are integrated of order 2, except $REXP$ and $REER$ which are integrated of order 1.

4. CONCLUSIONS

The results of the estimation of the benchmark model obtained using the econometric software package EViews 6, are given in Table 3.

Table 3.: Estimation of real export using GLS and specific effects of countries

Dependent Variable: RIZV				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 11 after adjustments				
Cross-sections included: 2				
Total pool (balanced) observations: 22				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
<i>HP</i>	21.10030	25.07996	0.841321	0.4126
<i>REER</i>	0.514141	0.342381	1.501665	0.1527
<i>TLI</i>	0.856079	0.152496	5.613773	0.0000
<i>REXP (-1)</i>	0.570615	0.160914	3.546081	0.0027
<i>MK-C</i>	0.012166	0.029992	0.405624	0.6904
<i>TR-C</i>	0.036344	0.040635	0.894410	0.3844
Weighted Statistics				
R-squared	0.711937	Mean dependent var		0.025313
Adjusted R-squared	0.621917	S.D. dependent var		0.158470
S.E. of regression	0.097244	Sum squared resid		0.151302
F-statistic	7.908668	Durbin-Watson stat		2.439172
Prob(F-statistic)	0.000644			

Source: Author's calculations

The results show that the estimated coefficient of the real effective exchange rate (*REER*) does not only have the expected sign but it is also statistically insignificant. The insignificance of this variable can be explained by the fact that in the sample period both analyzed countries have fixed exchange rate regimes.

The trend of potential output (*HP*) has a positive impact on the increase of export and is not statistically significant at level of 0,05 significance.

The estimated coefficient of the variable *TLI* has a positive sign and is statistically significant.

The export performance is positively affected by the last year's exports and the estimated coefficient of this variable is highly statistically significant.

By adding the real value of the cumulative *FDI* stock variable to our benchmark model we estimate the model (2) and obtain the following results:

Table 4.: The effect of foreign direct investments on real export

Dependent Variable: RIZV				
Method: Pooled EGLS (Cross-section weights)				
Sample (adjusted): 4 14				
Included observations: 11 after adjustments				
Cross-sections included: 2				
Total pool (balanced) observations: 22				
Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
<i>HP</i>	20.98580	26.19078	0.801267	0.4355
<i>REER</i>	0.538982	0.355112	1.517780	0.1499
<i>TLI</i>	0.850692	0.158443	5.369089	0.0001
<i>REXP (-1)</i>	0.563000	0.168074	3.349706	0.0044
<i>RFDI (-1)</i>	0.004218	0.014032	0.300637	0.7678
<i>MK-C</i>	0.012048	0.031495	0.382533	0.7074
<i>TR-C</i>	0.034715	0.041910	0.828311	0.4205
Weighted Statistics				
R-squared	0.708740	Mean dependent var		0.024634
Adjusted R-squared	0.592237	S.D. dependent var		0.156699
S.E. of regression	0.099929	Sum squared resid		0.149786
F-statistic	6.083410	Durbin-Watson stat		2.449639
Prob(F-statistic)	0.002143			

Source: Author's calculations

As we can see from Table 4, the estimated coefficient of the *FDI* stock variable is positive, but not significant meaning that *FDI* does not exhibit direct, supply-increasing (since *HP* variable is also not significant) neither indirect, specific effects on the exports of Macedonia and Turkey. The other explanatory variables in the model have kept their expected signs (except *REER*) and only *TLI* and *REXP*_{t-1} remain statistically significant when the cumulative *FDI* stock variable has been added.

In this study we have not find a significant influence of *FDI* on export spillovers to domestic firms. This can be explained by the fact that most of the inward *FDI* especially in Macedonia are directed to the free industrial zones and the foreign investors import the inputs (raw materials and intermediate products) for their processing from abroad without establishing business relationships with the local companies in the host country. The final products produced by the MNEs operating in these zones are exported. Therefore, they have neither positive effect on increasing the domestic supply capacity, nor they have specific effects on the value of host countries' exports.

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