The Influence of Foreign Direct Investment on Foreign Trade in the Visegrad Countries from 2001 to 2011

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A B S T R A C T
Objective: This paper is an attempt to settle the controversy around the motives connected with investing in the Visegrad countries and the verification of the hypothesis that FDI makes a significant impact on V4's foreign trade.
Research Design & Methods: The relationship between the value of foreign direct investment in V4 countries in 2001-2011 and the geographic structure of trade in two directions: exports and imports, will be examined. The paper includes an analysis of the influence of FDI on foreign trade (the linear gravity model was used).
Findings: FDI strongly influences the volume of Polish, Slovak and Czech exports and imports; only in the case of Hungary does FDI not stimulate foreign trade, the value of imports and exports is correlated with value of FDI inflow, as far as statistics are concerned, there is a significant inter-dependence between the inflow of FDI to V4 countries and the geographical and commodity pattern of their foreign trade.
Implications & Recommendations: The scale and structure of FDI in the V4 requires further study. It is also important to examine the number and value of greenfield investment projects, as well as mergers and acquisitions (brownfield investment).
Contribution & Value Added: This article attempts a holistic approach to the relationship between capital inflows in the form of foreign direct investment (FDI) and foreign trade of the host country, both export and import.

INTRODUCTION

The international movement of capital, especially foreign direct investment (FDI) and the consequences of the inflow of this capital for the host country, is an issue that provokes a lot of studies, disputes and discussions. In the era of globalization and internationalization, dynamic international capital flows make an impact on the elements of the economic structure of many countries in the world. Foreign capital that has been flowing from the beginning of the 1990s into the Visegrad countries (Poland, the Czech Republic, Hungary and Slovakia; V4) has affected the mentioned economic processes. It is generally acknowledged that the inflow of foreign direct investment accelerates the economic development of host countries, but there are also concerns about its actual and continuous impact on creating the conditions for sustainable economic growth. Positive effects dominate in the evaluation of foreign direct investment; however, the potential and real risks and costs should be taken into account. These issues are particularly important in the case of the Visegrad countries, where there has been a significant increase in investment in recent years, especially after their accession into the European Community in May 2004. Figures 1, 2, 3, and 4 present the inflow of capital in the form of FDI into Poland, the Czech Republic, Hungary and Slovakia in the period between 1990 and 2011.

The Visegrad countries compete with each other in attracting foreign investors. Taking advantage of that potential, the pace of economic development and investment attraction, the Visegrad countries use a variety of investment incentives. Individual countries depend on attracting foreign capital, which contributes to the activation of regions, provision of jobs, and an opportunity to work with local partners, at the same time making an impact on local economic development. It is important to note - and this issue will be given a clear focus in this paper - that capital inflows affect the foreign trade of the host country, both for exports development, but also for the development of imports. This paper presents an attempt to settle the controversy around the theme of investing in Visegrad countries and the verification of the hypothesis that foreign direct investment has a significant impact on the V4 countries' foreign trade.

Polish[1], Czech, Hungarian and Slovak membership in the European Community in 2004 (the so-called impulse accession) encouraged decisions to invest capital in the form of FDI (including reinvested earnings) by foreign companies (including TNCs), and this process made a strong impact on the development of exports and imports. The integration processes of the European Community brought a number of benefits to the countries in the region (Zysk & Śmiech, 2013):

− an increase in foreign trade (due to the trade creation effect and trade diversion effect),
− an increase in the profitability of exports (lower transaction costs after the abolition of customs duties and the cost of crossing the border),

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[1] The issue of the relationship between FDI flows and changes in Polish foreign trade in the previous period (1993-2002) is described in Zysk (2012).

Figure 1. Inflow of FDI into Poland, period 1990-2011 (millions of USD)
Source: own calculation based on OECD data Retrieved on December 29, 2013 from http://stats.oecd.org/

*1990-1992 estimations based on the date for Czechoslovakia
Figure 2. Inflow of FDI into the Czech Republic, period 1990-2011 (millions of USD)
Source: own calculation based on OECD data Retrieved on December 29, 2013 from http://stats.oecd.org/
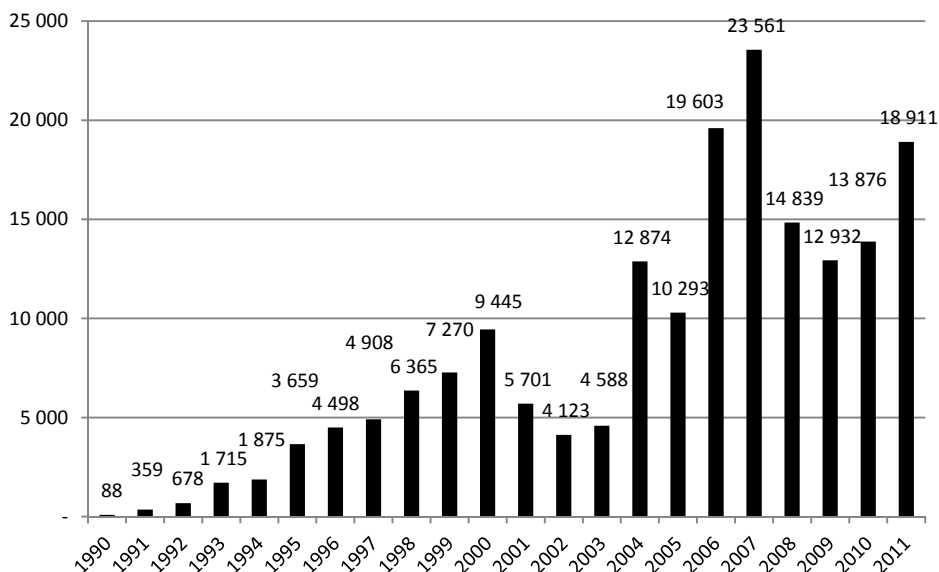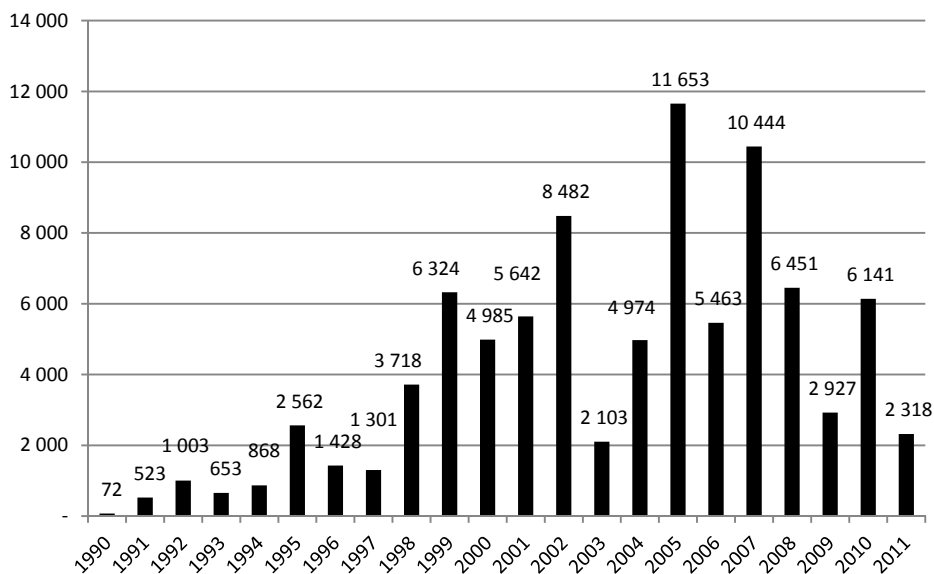
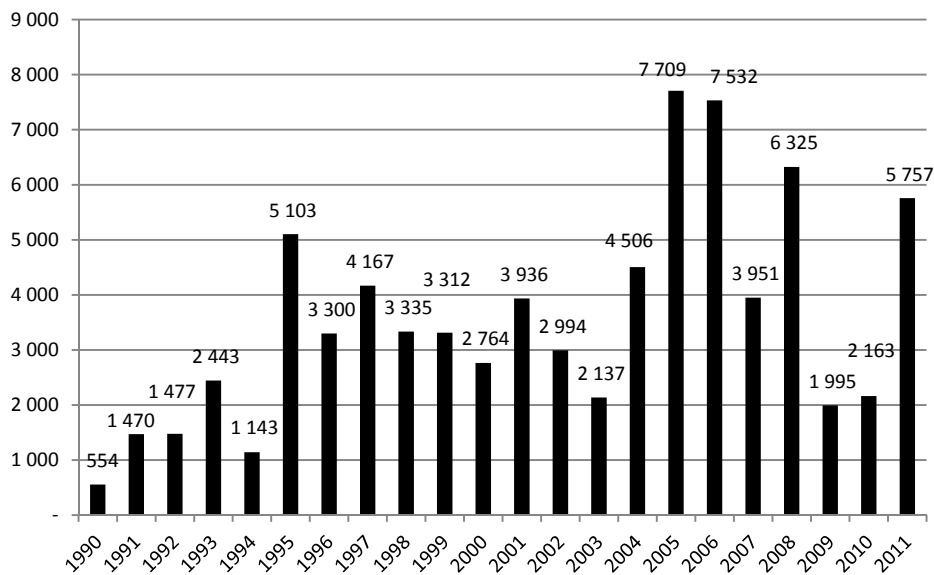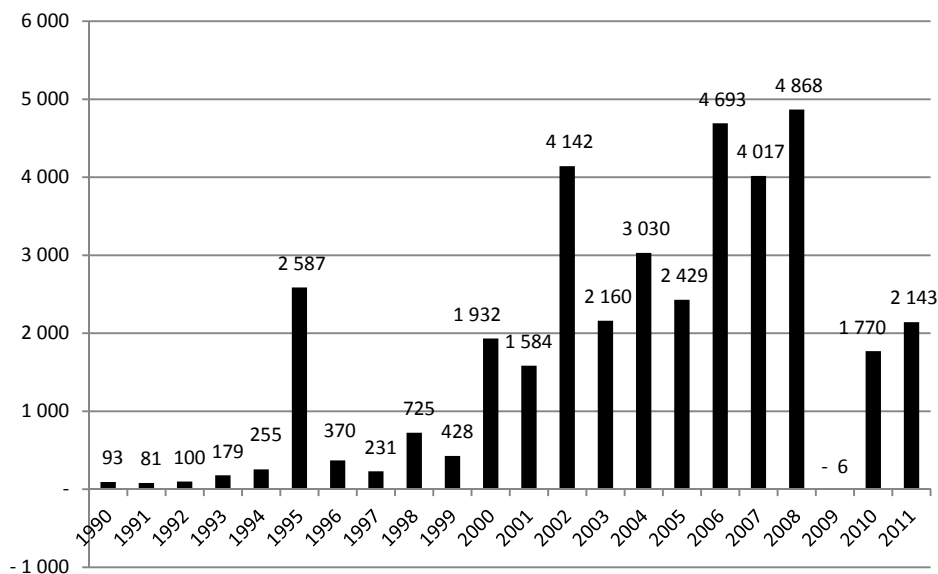**Figure 3. Inflow of FDI into Hungary, period 1990-2011 (millions of USD)**
Source: own calculation based on OECD data Retrieved on December 29, 2013 from http://stats.oecd.org/

*1990-1992 estimations based on the date for Czechoslovakia
Figure 4. Inflow of FDI into Slovakia, period 1990-2011 (millions of USD)
Source: own calculation based on OECD data available at <http://stats.oecd.org/>. [29 December 2013].

− the influx of new technologies and management methods,
− the inflow of capital in the form of FDI (in both greenfield and brownfield investment).

The relationship between the value of inflow of foreign direct investment in the period 2001-2011, and the geographic structure of foreign trade in our country in two directions: export and import were examined. The hypothesis that inflows of FDI to the Visegrad countries influence Polish, Czech, Hungarian and Slovak foreign trade was verified with the use of the gravity model. Taking into account the heterogeneity of countries and time periods, several specifications of the gravity model were considered. We used random and fixed-effect panel models. There were several outliers in the sample. In order to limit their influence on the analysis results, a resistant regression (least-trimmed squares) was used. The results obtained in this case characterized a typical investor's country and typical periods.

LITERATURE REVIEW

World literature presents numerous studies on the relationship between capital inflows in the form of foreign direct investment and elements of the economic structure, along with foreign trade - including exports and imports. Table 1 shows examples of a synthetic summary of the selected studies' results focused on this subject.

Table 1. Summary of research results focused on the interdependence of FDI and the elements of the economic structure, including foreign trade

Reference	Subject	Country, period	Conclusions
Jayachandran, & Seilan (2010)	A causal relationship between trade, foreign direct investment and economic growth.	India, 1970-2007	The results of the Granger causality test showed that there is a causal relationship between the examined variables. Economic growth, trade and FDI appear to be mutually reinforcing under the open-door policy.
Makki & Agapi, (2004)	Impact of foreign direct investment and trade on economic growth.	66 developing countries, 1971-2000	FDI, trade, human capital, domestic investment are important source of economic growth.
Alfaro, Chanda, Kalemli-Ozcan & Sayek (2004)	Various links among foreign direct investment, financial markets and growth.	41 countries, 1982-1999	The empirical evidence suggests that FDI plays an important role in contributing to economic growth. The level development of local financial markets is crucial for these positive effects to be realized.
Weresa (2001)	The impact of foreign direct investment on Poland's trade with the European Union	Poland, 1990s	The FDI's impact on Polish trade can be seen as its contribution to export creation. Moreover, externalities caused by trade and FDI inflow are influencing Polish specialization patterns.

Cieślik (2009)	Relationship between the volume of trade and foreign direct investment in Poland.	Poland	FDI contributes positively to the development of international trade between Poland and OECD countries. In contrast, it seems that incomplete specialization H–O model better explains Poland's trade with the OECD countries.
Al-Iriani & Al-Shamsi (2007)	Foreign Direct Investment and Economic Growth in the GCC Countries	six countries comprising the Gulf Cooperation Council (GCC), 1970-2004	Results obtained from a heterogeneous panel analysis indicate a bi-directional causality between FDI and GDP in the panel of the GCC
Sridharan, Vijayakumar & Chandra Sekhara Rao (2009)	Relationship between foreign direct investment (FDI) and growth.	BRICS countries, 1996-2007 for Brazil, 1994-2007 for Russia, 1992-2007 for India, 1999-2007 for China and 1990-2007 for South Africa	The existence of a long-term relationship was traced and the test result revealed that the growth leads FDI bi-directionally for Brazil, Russia and South Africa and FDI leads uni-directional growth for India and China, respectively.
Kutan & Vuksic (2007)	Foreign direct investment (FDI) outlays on exports	12 Central and Eastern European (CEE) economies, 1996 -2004	Empirical results indicate that, for all countries in our sample, FDI has increased domestic supply capacity and hence exports
Zysk (2012)	Foreign capital and foreign trade in Poland. Pre-accession period	Poland, 1993-2002	FDI influences geographical and commodity structure of Polish foreign trade to a high extent, FDI strongly influences the volume of Polish exports and imports, the value of imports is correlated with the value of FDI inflow to a higher extent than with the value of export.
Zysk & Śmiech (2013)	Foreign direct investment and foreign trade in Poland.	Poland, 2004-2011	FDI influences Polish foreign trade, strongly influences the volume of Polish exports and imports, the value of imports is correlated more with the value of FDI inflow than with the value of exports.
Ambroziak (2012)	Impact of foreign direct investment (FDI) on intra-industry trade (IIT).	Visegrad Countries (VCs) (the Czech Republic, Hungary, Poland and Slovakia), 1995-2008	The obtained results confirmed that FDI in the VCs stimulated not only Vertical IIT, but also Horizontal IIT.
Hunya & Richter (2011)	Mutual trade and investment, Visegrad countries before and after their EU accession	Visegrad Countries, 1999-2007	Foreign investors coming into VCs from the EU-15 and other advanced countries were the real engines of revival in mutual trade.
Hanousek, Kočenda & Maurel (2010)	Productivity spillovers.	28 emerging European markets (transition economies), 1995-2008	Specific spillover channels (absorption capacity, R&D, education, institutions) do not report the evidence of knowledge spillovers from FDI. In contrast, the importance of backward and forward linkages in producing spillovers is strongly acknowledged.

Source: own study.

METHODOLOGY AND DATA ANALYSIS

The impact of direct investment relative the size of the imports from the country of the investor and the exports to the country of the investor was assessed with the gravity

model[2]. In its form, the basic gravity model, introduced by Tinbergen (1962), assumes that the volume of trade between countries is proportional to the size of their economies, measured by the size of GDP, and is inversely proportional to the distance between these countries. There are many extended versions of the basic gravity models, which allow for the assessment of additional hypotheses (e.g. the influence of the common border, a common language, and membership in a trade organization). This study presents some assumptions inferring that the volume of foreign trade (import and export) depends on: the GDP of the trade partners (constant prices), the inflows of foreign direct investment value, and the distance between the capital city of Warsaw, Prague, Bratislava and Budapest, and the capital city of the country of the investor (and at the same time the export/import partner). Given these assumptions, the analyzed model took the following form:

$$Y_{ijt} = a_0 GDP_{it}^{a1} DIST_{ij}^{a2} FDI_{ij}^{a3} e^{\delta} \qquad (1)$$

where:

Y_{ijt} is the volume of imports to one of the Visegrad countries in the year t from country i , or export from one of the Visegrad countries in the year t to country i ,

GDP_{it} stands for the gross domestic product in country i and the year t,

FDI_{ij} denotes the cumulative volume of foreign direct investment from country i to one of the Visegrad countries in the year t,

$DIST_{ij}$ signifies the distance between the capital cities of countries i and j, δ - the error term, while $a1, a2, a3$ represent the parameters.

The estimation of the parameters model requires logarithm transformations and creates certain problems. The most significant amongst them is the heterogeneity among countries and zero trade flows. The comparison of methods of estimating parameters in gravity models can be found in the work of Santos & Tenreyro (2006). Assumptions adopted for the construction of the sample in the study allowed us to avoid the problem of zero trade flows. The estimation of parameters was conducted with the use of random panel models. We also presented (as a robustness check) the result of fixed models (two-way effect), and the resistance regression model. In this study, the following constraint modeling is applied:

1. the sample period is 11 years (annual data for the years 2001-2011),
2. variable import, export, FDI inflows, real GDP are measured in millions of USD,
3. the geographical distance in kilometers (transport costs between V4 countries and the studied countries approximated using parameter geographical distance between the capital cities, and 33 countries that were surveyed),
4. the output sample consisted of 33 countries, with 11 observations for each country: the period 2001-2011, a total of 333 observations.

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[2] The value of trade between any two objects is proportional (other things being equal) to the product of the GDP of both objects, and decreases with increasing distance between countries - it is the gravity model of trade. The reason for the adoption of such a name is an analogy to the law of gravity discovered by Newton: the attraction between two objects is proportional to their masses and decreases with increasing distance between them.

RESULTS AND DISCUSSION

Individual equations of models were constructed for the export from Poland, the Czech Republic, Hungary and Slovakia to the investor's country, and individually for the import from the investors' countries to Visegrad countries. Parameter estimates of individual models were compared in tables 2, 3 and 4. Table 2 presents the results obtained using robust regression.

Table 2. Results from robust regression (lts) for V4 countries

Variables	Poland		Czech Republic		Hungary		Slovakia	
	Export	Import	Export	Import	Export	Import	Export	Import
const	22.85	25.344	23.92	22.77	25.73	23.41	21.76	23.30
FDI	3.72e-05	1.68e-05	6.44e-06	1.91e-06	4.60e-07	2.45e-07	2.48e-06	9.41e-07
GDP	0.856	0.808	0.686	0.847	0.810	0.939	1.088	0.955
DIST	-0.958	-1.265	-1.07	-1.043	-1.391	-1.255	-1.247	-1.338

Source: own calculations with R CRAN

In this case, the parameter estimates are made for a typical pair of countries during the typical time periods. The results are not encumbered by the presence of outliers. First, we note that the signs of all coefficients are consistent with our expectations - in particular, the positive value of the parameter obtained at variable GDP, and negative value of the parameter at the DIST variable in both equations, for exports and for imports. Positive values are finally standing at the FDI variable for both equations: the import and export equation. At the same time, the values of these parameters are at least 4 orders of magnitude lower than for the other variables in the model. It is worth noting that FDI seems to have a stronger impact on exports than on imports. Evidence for this can be seen in the higher values of the parameters in all countries for the export equation than the import equation. As in the case of robust regression, the calculation of standard errors of parameter is not possible, estimates cannot be assessed whether the impact of FDI on the volume of bilateral exports and imports is important. It is also difficult to assess whether the impact of FDI on exports is actually greater than on imports.

Table 3. Results from two-way fixed model for V4 countries

Variable	Poland		Czech Republic		Hungary		Slovakia	
	Export	Import	Export	Import	Export	Import	Export	Import
	coef (*p-value*)	coef (*p-value*)	coef (*p-value*)	coef (*p-value*)	coef (*p-value*)	coef (*p-value*)	coef (*p-value*)	coef (*p-value*)
FDI	**-0.02** **(0.004)**	**-0.017** **(0.040)**	-0.003 (0.553)	0.002 (0.733)	0.003 (0.377)	-0.005 (0.157)	-0.010 (0.222)	**-0.020** **(0.006)**
GDP	0.07 (0.089)	0.048 (0.305)	**0.078** **(0.020)**	-0.025 (0.538)	**0.156** **(0.000)**	-0.038 (0.460)	0.045 (0.397)	**-0.090** **(0.045)**

Source: own calculations with R CRAN

Table 3 presents the results obtained in the two-way fixed effect model. Significant results (at 5% levels) are bolded in the above table. Because the variable DIST is constant (in time), it was not included in the model. In interpreting the results of this model, it

should be remembered that (although this has not been presented here) the constants characterizing the specific effects of pairs of countries (importer-exporter) and the impact of a given year were estimated in the model. Both constants can make a big contribution to the explanation of trade between the host country and the countries of the capital outflows. First, it may include such volatile conditions as cultural similarity (linguistic, religious, moral), the occurrence of the same diaspora trading tradition, signed trade agreements, membership in international organizations, demand for goods produced in the country, the prices and quality of goods for commerce, ease of transaction (physical distribution, trade restrictions, customs duties), the similarity of cultural and historical traditions, the way of conducting transactions, etc. The second constant (characterizing the year) will, in turn, represent the relevant variables in trade (exchange rate in both countries trading with each other or plant production, crops are not fixed in subsequent years). Parameter estimates for the two variables of FDI and GDP are statistically significant only for the two countries surveyed. In the case of Poland, FDI significantly and negatively affects the volume of trade (exports and imports), while in Slovakia, FDI has a negative impact on imports. A similar situation occurs in relation to the second variable, GDP, which has a significant and positive impact on exports to the Czech Republic and Hungary, negative and significant in the case of Slovakia. Such results are hardly in line with expectations. It seems, therefore, that the specific characteristics of trade between the host country and the country of the outflow of capital, the impact of which has been described in the context of fixed effects, are dominant with respect to FDI and GDP.

Table 4. Results from random effect models for V4 countries

	Poland		Czech Republic		Hungary		Slovakia	
	Export	**Import**	**Export**	**Import**	**Export**	**Import**	**Export**	**Import**
Variables	coef *(p-value)*	coef *(p-value)*	coef *(p-value)*	coef *(p-value)*	coef *(p-value)*	coef *(p-value)*	coef *(p-value)*	coef *(p-value)*
const	**26.06** **(0.000)**	**23.39** **(0.000)**	**23.58** **(0.000)**	**21.40** **(0.000)**	**24.08** **(0.000)**	**22.98** **(0.000)**	**22.87** **(0.000)**	**21.07** **(0.000)**
FDI	**0.057** **(0.000)**	**0.031** **(0.004)**	**0.029** **(0.000)**	**0.028** **(0.000)**	0.003 (0.540)	-0.005 (0.228)	**0.069** **(0.000)**	**0.042** **(0.000)**
GDP	**0.743** **(0.000)**	**0.648** **(0.000)**	**0.750** **(0.000)**	**0.616** **(0.000)**	**0.751** **(0.000)**	**0.466** **(0.000)**	**0.763** **(0.000)**	**0.544** **(0.000)**
DIST	**-1.358** **(0.000)**	**-0.875** **(0.000)**	**-1.085** **(0.000)**	**-0.671** **(0.000)**	**-1.132** **(0.000)**	**-0.764** **(0.000)**	**-1.148** **(0.000)**	**-0.713** **(0.000)**

Source: Own calculations with R CRAN

Table 4 demonstrates the results for random effect models.[3] Similarly to the robust regression models with parameters of the characters, all variables are in accordance with the expectation. This means that FDI and GDP (business partners) stimulate the volume of imports and exports. A barrier to trade is, in turn, the distance between the capital cities. It is worth noting that the parameter estimates are statistically significant for

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[3] Haussmann test statistics performed for each particular model suggest that random models are more suitable then fixed effect models.

almost all models and variables. The only exception is the assessment of FDI in the equations for imports and exports in Hungary. Comparing the results for models of export and import in different countries, we can see that all countries have higher (per module) values for exports than for imports. In particular, the average effect of GDP on export when GDP changes across time and between countries by one unit is between 0.743 (Poland) to 0.763 (Slovakia). Similar changes of GDP result in average increases of import by 0.466 (Hungary) to 0.648 (Poland). The situation is similar in the case of FDI. When FDI changes across time and between countries by one unit, then export increases between 0.029 (the Czech Republic) and 0.069 (Slovakia). When imports are taken into account, the effect of FDI is between 0.028 (the Czech Republic) and 0.042 (Slovakia).

CONCLUSIONS

The aim of the analysis was to examine the relationship between capital inflows in the form of foreign direct investment (FDI) and the foreign trade of the host country, both export and import (export-oriented and import-oriented level). As part of the analysis, three types of panel models were built, i.e. two-way fixed effect models, random models and robust regression models. Most of the results show that FDI significantly affects the size of the mutual trade between the country of investment and the investor's country. The analysis allowed us to draw some specific conclusions. First, the results obtained within the framework of two-way fixed effect models show that trade is largely determined by specific factors other than the size of GDP or FDI. Secondly, the results obtained show that FDI inflow is usually more export-oriented than import-oriented. Thirdly, the results for the robust regression models show that for typical countries, typical periods of FDI are not a strong determinant of foreign trade between countries of capital outflows in the form of foreign direct investment (FDI) and the host country. This is evidenced by the parameter estimates in the regression equations resistant (robust regression) for the variable FDI that is three orders of magnitude smaller than in the case of a group of random models. Comparison of the results of the impact of FDI on bilateral exchanges for each country shows its heterogeneity. Slovakia is a country where FDI is the strongest determinant of foreign trade. The smaller impact of FDI on bilateral exchange was recorded for Poland and the Czech Republic. Hungary, however, proved to be a country in which FDI had no impact on either the export or import. These different results may be explained by several factors. Among these, as first and foremost should be counted: the type of direct investment, the structure of import and export, the export and import rates (the share of or a particular direction of foreign trade in the creation or distribution of national income).

The use of traditional tools such as gravity models shows that the change in the level of foreign investment affects the level of imports and exports in a similar way. Hungary was the only case where the collected data does not allow for the conclusion that FDI in general affects export and import. In our opinion, the reasons for this phenomenon may be as follows: rapid changes in Hungarian currency (HUF) exchange, FDI disinvestment processes (for the 33 countries analyzed in this research, in 11 cases disinvestments were noted), and the fact that in our model we have assumed bilateral export/import relationships – maybe Hungary has different buyers than investors.

Hence, we do not find these results dependable. Assuming that the compound is tested for common objects and typical periods:

− the value of exports is correlated with the value of FDI inflow to a higher extent(5 results) than with the value of imports (2 results),
− two results displayed a similar impact,
− in the case of one country (Hungary) we have not found correlation between inflows of FDI and the value of exports and imports.

The scale and structure of FDI in Visegrad countries requires further study. It is also important to examine the number and value of greenfield investment projects, as well as mergers and acquisitions (brownfield investment). It should also be noted that in addition to testing the same value of FDI, it is important to focus on the structure of these investments, as well as horizontal and vertical investments. In the described Visegrad Group countries (V4), the phenomenon of capital investment in service centers, resulting in the development of business process outsourcing (BPO - Business Process Outsourcing or SSC - Shared Service Centers), should be also examined. But these are not capital-intensive investments, and make little impact on the country's foreign trade development in the host country.

REFERENCES

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and economic growth: the role of local financial markets. Journal *of International Economics, 64*, 89–112.

Al-Iriani, M., & Al-Shamsi, F. (2007). Foreign Direct Investment and Economic Growth in the GCC Countries: A Causality Investigation Using Heterogeneous Panel Analysis', Retrieved on December 29, 2013 from www.luc.edu/orgs/.../Al-Iriani%20-%20paper.doc. Available form: EBSCO's databases.

Ambroziak, Ł. (2012). FDI and intra-industry trade: theory and empirical evidence from the Visegrad Countries. *International Journal of Economics and Business Research*, *4*(1-2).

Cieślik, A. (2009). Foreign direct investment and the volume of trade: the case of Poland. *Economic Change and Restructuring*, *42*(4), 273-291.

Hanousek, J., Kocenda, E., & Maurel, M. (2010). Direct and Indirect Effects of FDI in Emerging European Markets : A Survey and Meta-analysis. *Documents de Travail du Centre d'Economie de la Sorbonne,* 2010.24, Maison des Sciences Économiques, Paris.

Hunya, G., & Richter, S. (2011). Mutual trade and investment of the Visegrad countries before and after their EU accession. *Eastern Journal of European studies*, 2(2), 77-91.

Jayachandran, G., & Seilan, A. (2010). A causal relationship between trade, foreign direct investment and economic growth for India. *International Research Journal of Finance and Economics*, 42, 74-88.

Kutan, A. & Vuksic, G. (2007). Foreign direct investment and export performance: empirical evidence. *Comparative Economic Studies*, *49*, 430–445.

Makki, S.S. & Agapi, S. (2004). Impact of foreign direct investment and trade on economic growth: evidence from developing countries. *American Journal of Agricultural Economics*, *86*(3), 795-801.

Santos, S.J., & Tenreyro, S. (2006). The log of gravity. *The Review of Economics and Statistics, 88*, 641-658.

Sridharan, P., Vijayakumar, N., & Sekhara C.R, K. (2009). Causal relationship between foreign direct investment and growth: evidence from BRICS countries. *International Business Research*, *2*(4), 198-203.

Tinbergen, J. (1962). *Shaping the World Economy: Suggestions for an International Economic Policy.* New York, NY: Twentieth Century Fund.

Weresa, M. (2001). The impact of foreign direct investment on Poland's trade with European Union. *Post-Communist Economies*, *13*(1), 71-83.

Zysk, W. (2012). *Foreign capital and foreign trade in Poland. Pre-accession period*, Warsaw: CeDeWu.

Zysk, W., & Śmiech, S. (2013). Influence of foreign direct investments on foreign trade restructuring in Poland from 2004 to 2011. *Proceedings of 7th International Days of Statistics and Economics*, Libuše Macáková. Prague: MELANDRIUM, pp.1616-1624, Retrieved on December 29, 2013 from http://msed.vse.cz/msed_2013/en/toc

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