Effects of Globalization and Corruption on the Outward FDI in OECD Countries

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Abstract

The paper investigates impacts of globalization and corruption-free on the outward foreign direct investment (FDI) for 22 OECD countries. The baseline model confirms the positive link of home and host country gross domestic product (GDP) per capita and Linder's hypothesis, home and host size of GDP and its similarity, host agglomeration of multinational enterprises, common currency euro, and the negative link with geographical distance. The results for the effects of globalization and corruption-free on the outward FDI are mixed. The significant positive association pertained to home and host country economic globalization is confirmed, but the significant negative association pertained to home and host county social globalization. The significant positive association of outward FDI with the corruption-free in host country and the significant negative association with the corruption-free in home country and for corruption similarity suggest FDI outflows from low corruption-free home country to high corruption-free host country. This finding implies FDI preference for corruption-free economically globalized OECD host countries.

Keywords: *foreign direct investment, globalization measures, corruption measure, hypotheses testing*

JEL Classifications: C23, F21, G38, K42

Introduction

Determinants of foreign direct investments (FDIs) vary widely among different studies for different countries or group of countries (Bhaumik and Gelb, 2005; Bojnec and Fertő, 2014; 2016). Baharumshah and Almasaied (2009), Reiter and

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Steensma (2010), Lejko and Bojnec (2012), among others, argue that a vast number of empirical studies have given mixed results on the relationship between FDI and factors promoting economic development and even for the relationship between FDI and economic growth by industry structure and performance, technological spillovers, and human capital development. Among possible reasons for mixed results might be the use of inadequate empirical methods for the use of panel studies vis-à-vis cross-sectional studies, the disregard of several factors that are essential for understanding the role of FDI in development in terms of country characteristics and policies, and the level of corruption (Wu, 2006; Egger and Winner, 2006; Blackburn and Sarmah, 2008; Bitzenes, Tsitouras and Vlschos, 2009; Chang, 2010; Peyton and Belasen, 2012; Randrianarisoa et al., 2015). Among such policies are price and trade liberalization, privatization and restructuring that have been introduced since the 1990s (Brada, Kutan and Yigit, 2006; Brada, Drabek and Perez, 2012; Brada and Tomšik, 2009). Brouthers, Gao and McNicol (2008) argued on possible trade-offs between different types of FDI: market-seeking, resource--seeking and labour-seeking. Market-seeking FDI aims to directly serve a host country market by substituting export with local production and distribution (Nachum and Zaheer, 2005; Brouthers, Gao and McNicol, 2008). Resource-seeking FDI aims to achieve cost-minimization in a host country owing from less costly or unavailable resources in the home market. For market-seeking FDI the additional corruption costs might be offset by increasing prices in markets that have wealthier, less price sensitive customers. On the other hand, the additional corruption's costs might be not easily offset for resource-seeking FDI such labour or materials. While corruption might not hinder market-seeking FDI, it might hinder resource-seeking FDI and market attractiveness cannot compensate for high corruption costs.

The main objective of this paper is to investigate determinants of outward FDI at the country levels. More specifically, we focus on the effects of globalization and control of corruption on outward FDI flow using panel data for 22 Organisation for Economic Cooperation and Development (OECD-22) countries. Key contribution of the paper is on investigation of possible presence of important link between globalization and corruption effects and level of FDI outflows. Therefore, the paper concentrates on the following two research questions: first, does greater globalization of home and host countries also enhances greater outward FDI flows, and second, does a home and host country degree of corruption is less or more attractive for outward FDI after controlling for other determinants of FDI location?

The rest of the paper is organized as follows. The next, section 1 presents literature review focusing on determinants of outward FDIs in the interaction with possible effects of the baseline model explanatory variables, and particularly

augmented model with globalization and degree of corruption explanatory variables. Section 2 describes methodology and data used. Section 3 presents descriptive statistics and correlation analysis. Section 4 presents main econometric results in the four steps: for the baseline model specification variables, augmented model with globalization and degree of corruption explanatory variables in the home country, augmented model with globalization and corruption explanatory variables in the host country, and augmented model with globalization and degree of corruption similarity explanatory variables between the home and host countries. Section 5 derives main findings. Finally, last section concludes and provides possible directions for research in future.

1. Literature Review and Hypotheses Development

Previous research identifies a large set of explanatory variables which may be important to explain FDI flows with policy implications (Chakrabarti, 2001; Brada and Tomšik, 2009; Blonigen and Piger, 2011; Özkan-Günay, 2011; Eicher, Helfman and Lenkoski, 2011; Bojnec and Fertő, 2014; 2016). The model specification of explanatory variables is usually based on different theoretical framework and prior empirical studies implying uncertainty on model specifications.

The gravity models have become popular tool in empirical analysis of international trade and internationalization modelling (Anderson and van Wincoop, 2003), including for modelling of FDI flows (Aggarwal, Kearney and Lucey, 2012). Within the gravity framework it is expected that outward FDI from home country is negatively associated with geographical distance between the home and host countries and positively associated with the economic size of the home and host countries. The economic size of the country is often measured by the size of GDP. Moreover, the GDP similarity is expected to affect the level of FDI flows positively (Bergstrand and Egger, 2007).

Later studies have introduced some additional trade costs variables to the gravity model including language similarity, having a common border, having a free trade agreement or having direct accession to the sea (Cuervo-Cazurra, 2008). The attractiveness for the outward FDI might be the presence of agglomeration of multinational enterprises in the host countries. The latter effect for host country FDI openness is often proxied by the ratio of inward FDI flows to the size of GDP in host country.

Finally, the role of the European Monetary Union (EMU) on the outward FDI is explained by the euro introduction in some of the EU countries (Brouwer, Paap and Viaene, 2008). Therefore, we set the following four hypotheses (H), which are used to test the validity of the baseline model specification:

H1: *Outward FDI from home to host country is positively associated with the economic size of the home and host country.*

H2: *Outward FDI from home to host country is positively associated with the economic size similarity between the home and host country.*

H3: *Outward FDI from home to host country is positively associated with home and host countries proximity in common border, language, a common currency, and host country openness with agglomeration of multinational enterprises.*

H4: *Outward FDI from home to host country is negatively associated with the distance between home and host countries capitals, and landlocked status of home country.*

The usual way for controlling income level of home and host countries as their level of economic development includes the GDP per capita measure in the baseline model specifications. As relevant control variable in the baseline regression model of the robustness check has been justified Linder hypothesis for FDI (Fajgelbaum, Grossman and Helpman, 2015). It is captured by difference in log-GDP per capita between home and host country. Therefore, we set the following additional two hypotheses (H), which are used to test the validity of the baseline model specification:

H5: *Outward FDI from home to host country is positively associated with the level of economic development of the home and host country.*

H6: *Outward FDI from home to host country is positively associated with the difference in the level economic development of the home and host country.*

In addition to these baseline explanatory variables, there is a growing stream of research on the role of a variety of globalization indicators and the control of corruption as explanatory variables for the complex relationship with the outward FDI, which has given mixed results (Lambsdorff, 2003; Mauro, 1995; Anokhin and Schulze, 2009; Cuervo-Cazurra, 2008; Perez, Brada and Drabek, 2012).

While the country's economic, social and political stability and globalization level can have unambiguous effects on the outward FDI they can in association with corruption-free enabling environment encourage outward FDI flows from home to host country (Desai, 1997; Tulug Ok, 2004; Brada, Kutan and Yigit, 2006; Nakamura, Olsson and Lonnborg, 2012; Bojnec and Fertő, 2016). However, the globalization can have positive effects on economic growth in countries with a weak institutions and higher degree of corruption, and vice versa in the others (Houston, 2007; Jiménez, 2011). In relations to level of globalization, we set the H7 in the following way:

H7: *Outward FDI from home to host country is positively associated with home and host countries globalization.*

The theoretical justification of an expected positive link between level of corruption-free, positive link between corruption-free similarity and unambiguous link between globalization and size of FDI outward can be explained by the effects of institutional quality on decision making process of a firm (Chang, 2015) and previous empirical studies focusing specifically on corruption as part of institutional setting in home and host countries and globalization aspects of FDI flows. Countries with better institutions and corruption-free are more likely to attract more per capita FDI than a country with poor institutions and important corruption (Stoian, 2013). Corruption increases agency and transactions costs, and erodes the potential value of the returns of the opportunity, while the control of corruption and greater transparency might increase the likelihood that prospective entrepreneur or innovator might be able to achieve higher levels of entrepreneurial and innovative activity (Laffont and Tirole, 1993; Drabek and Warren, 2002; Cuervo-Cazurra, 2008; Anokhin and Schulze, 2009; Pavel and Rističová, 2015). The degree of corruption in home and host countries has been specified as an additional factor among the determinants of FDI location. Corruption as paying bribes to corrupt government bureaucrats in return for some gains is generally viewed as an additional cost of doing business or a tax on profits, which decreases the expected profitability of investment projects (Al-Sadig, 2009). The empirical literature on the effects of the home and host countries degree of corruption on outward FDI flows has found the mixed results of a link between a complex phenomenon of degree of corruption and outward FDI flows (Perez, Brada and Drabek, 2012). Corruption might be a consequence of economic and noneconomic variables and thus treated as an endogenous variable. Institutional quality and degree of corruption have been defined in different ways. The degree of corruption can negatively affect the costs of investment operation and costs of doing business (Mauro, 1995). The relationship between degree of corruption and FDI can be of a mixed sign or insignificant in a spite of general believe that the degree of corruption is inversely associated with per capita FDI flows and that countries with a low degree of corruption attract more per capita FDI (Abed and Davoodi, 2000; Akçay, 2001; Al-Sadig, 2009). We set the H8 in relation to the degree of corruption-free in the following way:

H8: *Outward FDI from home to host country is positively associated with home and host countries level of corruption-free.*

As a measure of corruption-free is scaled inversely, a positive sign of association between outward FDI from home to host country with the level of corruption-free is expected: more corruption-free is a country, a greater FDI flows are expected. Because we analyse developed OECD countries, we also expect that host country corruption-free encourages inward FDIs into host country or outward FDI from home to host country. On the other hand, important determinant for FDI

flows can be also home and host countries globalization and degree of corruption similarity at their different globalization and degree of corruption levels. Habib and Zurawicki (2002) suggested that the greater the absolute difference in the degree of corruption between the home and host countries, the smaller the FDI inflows for the host country. This suggests on the importance of globalization and degree of corruption similarity in absolute difference between the globalization and degree of corruption in the home and the host countries for bilateral FDI flows. Therefore, we set the following H9 and H10:

H9: *Outward FDI is positively associated with home and host countries level of globalization similarity.*

H10: *Outward FDI is positively associated with home and host country degree of corruption-free similarity.*

The degree of corruption might be correlated with other country characteristics such as the level of economic development, quality of institutions, lack of competition, and cultural values. On the other hand, the corruption-free similarity might also encourage outward FDI in a way that corrupt countries tend to attract FDI from other corrupt countries, and less corrupt countries tend to attract FDI from less corrupt countries (Hellman and Kaufmann, 2004; Cuervo-Cazurra, 2008; Perez, Brada and Drabek, 2012).

2. Methodology and Data

There is no agreement between scholars how to estimate empirically bilateral FDI flows (Sarisoy Guerin, 2006; Lane and Milesi-Ferretti, 2008; Daude and Fratzscher, 2008). Standard approach is the application of gravity type's model (Aggarwal, Kearney and Lucey, 2012). Bergstrand and Egger (2007) provide theoretical foundation for the use of gravity model to analyze FDI patterns. In this paper we employ the following baseline version of FDI model:

$$\text{outwardFDI}_{ijt} = \alpha_0 + \alpha_1 \ln\text{GDP/capita}_{it} + \alpha_2 \ln\text{GDP/capita}_{jt} +$$
$$+ \alpha_3 \ln\text{GDP/capita}_{ijt}\text{difference} + \alpha_4 \ln\text{GDP}_{it} + \alpha_5 \ln\text{GDP}_{jt} + \alpha_6 \ln\text{GDP}_{ijt}\text{similarity} +$$
$$+ \alpha_7 \ln\text{Openness}_{jt} + \alpha_8 \ln\text{Distance}_{ij} + \alpha_9 \text{Landlocked}_i + \alpha_{10}\text{Common border}_{ij} +$$
$$+ \alpha_{11}\text{Language}_{ij} + \alpha_{12}\text{Euro}_{ijt} + \varepsilon_{ijt} \qquad (1)$$

where
  FDI – level of a bilateral FDI flows between home i and host j countries at time t,
  GDP per capita$_i$ and GDP per capita$_j$ – level of economic development of home i and host j countries,
  GDP$_i$ and GDP$_j$ – market size of home i and host j countries,
  GDP per capita$_{ij}$ difference – the difference between the ln GDP per capita values for home i and host j countries.

The GDP similarity is measured as $\dfrac{GDP_i GDP_j}{GDP_i + GDP_j^2}$ (Bergstrand and Egger, 2007). The Openness$_j$ measures the agglomeration effect of multinational enterprises, which is defined by inward FDI/GDP$_j$ in host country j. Trade costs variables are: Distance for the bilateral distance between partners, and four dummy variables including Landlocked if home country i is a land locking country, Common border if home and host countries have a common border, Language if the common language is used in home and host countries, and Euro if both home and host countries are member of Euro area at time t. Finally, ε_{ijt} is the error term. The bilateral FDI data, GDP per capita data and GDP data are expressed in U.S. dollars and based on the OECD International Direct Investment Statistics and OECD Main Economic Indicators. Trade costs variables are obtained from CEPII database.

Since our interest focuses on the potential impact of globalization and corruption-free on outward FDI flows we augment the baseline model in equation (1) with proxies for explanatory globalization and corruption-free variables. We apply KOF Index of Globalization (http://globalization.kof.ethz.ch/), which measures the three main dimensions of globalization: economic, social and political (Dreher, 2006). Higher value of indices implies higher level of globalization. Finally, to measure of the degree of corruption we use the Corruption Perceptions Index (CPI) from the Transparency International (Lambsdorff, 2000).

The Corruption Perceptions Index as an aggregate indicator compares and ranks countries and territories according to their perceived levels of public sector corruption <http://cpi.transparency.org/cpi2011/results/>. The Corruption Perceptions Index ranges between 10 (highly corruption-free) and 0 (highly corrupt).

The augmented model for home country i is defined as follows:

$$\text{outwardFDI}_{ijt} = \alpha_0 + \alpha_1 \ln\text{GDP/capita}_{it} + \alpha_2 \ln\text{GDP/capita}_{jt} +$$
$$+ \alpha_3 \ln\text{GDP/capita}_{ijt}\text{difference} + \alpha_4 \ln\text{GDP}_{it} + \alpha_5 \ln\text{GDP}_{jt} + \alpha_6 \ln\text{GDP}_{ijt}\text{similarity} +$$
$$+ \alpha_7 \ln\text{Openness}_{jt} + \alpha_8 \ln\text{Distance}_{ij} + \alpha_9 \text{Landlocked}_i + \alpha_{10} \text{Common border}_{ij} +$$
$$+ \alpha_{11} \text{Language}_{ij} + \alpha_{12} \text{Euro}_{ijt} + \alpha_{13} \text{Economic Globalization}_{it} + \alpha_{14} \text{Social Globalization}_{it} +$$
$$+ \alpha_{15} \text{Political Globalization}_{it} + \alpha_{16} \text{Corruption-free}_{it} + \varepsilon_{ijt} \qquad (2)$$

where are added various elements of globalization and corruption-free perception indices of home country i.

In addition, to include various elements of globalization and corruption-free perception indices also of host j country, the augmented model specification with the host country globalization and corruption-free characteristics is the following:

$$outwardFDI_{ijt} = \alpha_0 + \alpha_1 lnGDP/capita_{it} + \alpha_2 lnGDP/capita_{jt} +$$
$$+ \alpha_3 lnGDP/capita_{ijt}difference + \alpha_4 lnGDP_{it} + \alpha_5 lnGDP_{jt} + \alpha_6 lnGDP_{ijt}similarity +$$
$$+ \alpha_7 lnOpenness_{jt} + \alpha_8 lnDistance_{ij} + \alpha_9 Landlocked_i + \alpha_{10} Common\ border_{ij} +$$
$$+ \alpha_{11} Language_{ij} + \alpha_{12} Euro_{ijt} + \alpha_{13} Economic\ Globalization_{jt} + \alpha_{14} Social\ Globalization_{jt} +$$
$$+ \alpha_{15} Political\ Globalization_{jt} + \alpha_{16} Corruption\text{-}free_{jt} + \varepsilon_{ijt} \qquad (3)$$

Finally, the augmented model specification with the home and host countries globalization and degree of corruption similarity is specified in the following way:

$$outwardFDI_{ijt} = \alpha_0 + \alpha_1 lnGDP/capita_{it} + \alpha_2 lnGDP/capita_{jt} +$$
$$+ \alpha_3 lnGDP/capita_{ijt}difference + \alpha_4 lnGDP_{it} + \alpha_5 lnGDP_{jt} + {}_6 lnGDP_{ijt}similarity +$$
$$+ \alpha_7 lnOpenness_{jt} + \alpha_8 lnDistance_{ij} + \alpha_9 Landlocked_i + \alpha_{10} Common\ border_{ij} +$$
$$+ \alpha_{11} Language_{ij} + \alpha_{12} Euro_{ijt} + \alpha_{13} Economic\ Globalization\ Similarity_{ijt} +$$
$$+ \alpha_{14} Social\ Globalization\ Similarity_{ijt} + \alpha_{15} Political\ Globalization\ similarity_{ijt} +$$
$$+ \alpha_{16} Corruption\text{-}free\ similarity_{ijt} + \varepsilon_{ijt} \qquad (4)$$

The econometric model is specified with the similarity in the globalization and corruption variables by the bilateral pairs of the OECD-22 countries. The globalization and degree of corruption similarity is defined on the basis of the absolute difference between the home and host country variables, e.g., separately for three different globalization measures and for degree of corruption variable. The computation of the measure of similarity between home and host countries uses absolute difference (e.g. Cezar and Escobar, 2015).

The data used covers the OECD-22: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom. Except for Norway, Switzerland and Turkey, these are the European Union (EU) OECD countries. Four of them – the Czech Republic, Hungary, Poland and Slovakia – are from Central European Visegrád region (Radlo and Sass, 2012).

The analysed period is between 2004 and 2008, which partly covers the beginning of the most recent financial and economic crisis. The relative short 5-years time span turns the analysis into more cross-sectional oriented, rather than an investigation of a nature of dynamic underlying processes (e.g. Skabic, 2015; Podda, 2016). Due to cross-sectional dependence the baseline and augmented models are estimated by the panel-corrected standard error models.

3. Descriptive Statistics and Correlation Analysis

Table 1 presents summary statistics of the restricted data-sample for the time--variant and time-invariant specified variables, which are used in the econometric analysis. The number of observations (2310 = 462 x 5 years, where 462 = 22

countries x 21 variables) is for a balanced panel. In the case of time-invariant variables the constant values are taken for each of the analysed years.

At the first glance the most considerable differences between the analysed OECD-22 countries and over the analysed years are seen from the differential between minimum and maximum values for the outward FDI and the measure of degree of corruption. Differences between the countries are also in the case of GDP per capita as level of economic development and GDP as the size of the economy. In addition, a native taught Language similarity between the OECD-22 countries is lower than the number of Landlocked countries (Austria, the Czech Republic, Hungary, Luxembourg, Slovakia, and Switzerland) or the Euro countries. Degree of Social Globalization is a slightly lower than Economic Globalization and lower than Political Globalization.

T a b l e 1

Summary Statistics of Variables

Variable	Number of observations	Mean value	Std. dev.	Minimum	Maximum
Outward FDI$_{ij}$	2310	1 290.30	5 534.50	–48 323.30	106 849.40
ln GDP/capita$_i$	2310	10.29	0.41	9.23	11.35
ln GDP/capita$_{ij}$ difference	2310	0.45	0.36	0.001	1.86
ln GDP$_i$	2310	5.96	1.07	3.39	7.98
ln GDP similarity$_{ij}$	2310	0.17	0.07	0.01	0.25
ln Opennes$_j$	2310	0.44	0.51	–0.47	1.80
ln Distance$_{ij}$	2310	7.00	0.66	4.09	8.12
Landlocked$_i$	2310	0.27	0.45	0	1
Common border$_{ij}$	2310	0.14	0.34	0	1
Language$_{ij}$	2310	0.08	0.26	0	1
Euro$_{ij}$	2310	0.29	0.45	0	1
Economic globalization$_i$	2310	83.31	8.20	54.25	98.69
Social globalization$_i$	2310	82.54	8.37	48.32	94.58
Political globalization$_i$	2310	90.98	7.59	60.20	98.43
Corruption-free$_i$	2310	7.03	1.92	3.02	9.07
Economic globalization similarity$_{ij}$	2310	9.16	7.50	0.03	38.86
Social globalization similarity$_{ij}$	2310	8.34	8.76	0.00	44.77
Political globalization similarity$_{ij}$	2310	7.17	8.16	0.03	37.14
Corruption-free similarity$_{ij}$	2310	2.25	1.63	0	6.50

Source: Own calculations.

Figure 1 presents the cross-country mean values over 5 years of indices of Economic, Social and Political Globalizations, where Globalization indices are sort by Economic Globalization indices. The results confirmed differentials between the analysed OECD-22 countries. The lower value implies lower level of globalization. Economic and Social Globalization is the lowest for Turkey. Political Globalization is on average higher: it is the lowest for the United Kingdom and particularly is high for France and Austria. Economic Globalization is the highest for Luxembourg and Social Globalization for Switzerland.

Figure 1

The Mean Values of Globalization and Degree of Corruption Perception Indices, 2004 – 2008
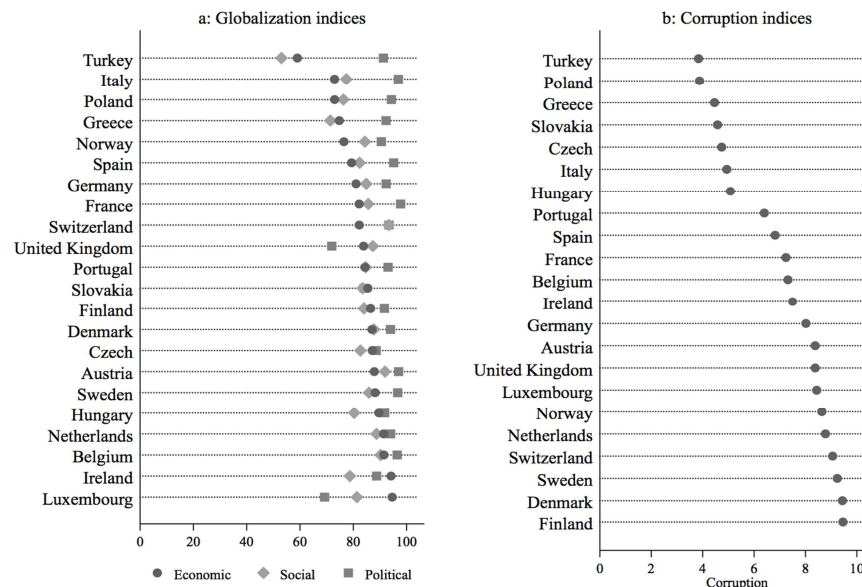
Source: Own calculations.

Higher value of globalization indices and degree of corruption implies higher level of globalization and higher degree of corruption-free. None of the analysed OECD-22 countries is highly corrupt, but relatively more corruption is identified in Turkey, Greece, Italy, Poland and other post-communist analysed OECD countries (Slovakia, the Czech Republic and Hungary). This finding is consistent with Pavel and Rističová (2015). On the other hand, more corruption-free are for Finland, Denmark, Sweden and Switzerland. The correlation analysis based from a pooled data confirmed modest correlation between the analysed pairs of variables (Table 2). The partial correlation coefficients are greater or close to 0.5 between the following pairs of variables: positive correlations between ln GDP per capita and degree of Corruption-free, ln GDP of home country and Corruption--free similarity, Economic and Social Globalization, degree of Corruption-free and Economic Globalization, degree of Corruption-free and Social Globalization, ln GDP per capita and Economic Globalization, ln GDP per capita and Social Globalization, Common border and Language; negative correlations between ln GDP of home country and its Landlocked status, ln GDP of home country and Economic Globalization, ln Distance and Common border, Social Globalization of home country and Social Globalization similarity, Political Globalization of home country and Political Globalization similarity.

T a b l e 2

Correlation Coefficients between Pairs of Variables Based from Pooled Data

	outward FDI$_{ij}$	ln GDP/capita$_i$	ln GDP/capita$_{ij}$ similarity	ln GDP$_i$	ln GDP similarity$_{ij}$	ln Openness$_j$	ln Distance$_{ij}$	Landlocked$_i$	Common border$_{ij}$	Language$_{ij}$	Euro$_{ij}$	Economic globalization$_i$	Social globalization$_i$	Political globalization$_i$	Corruption-free$_i$
Outward FDI$_{ij}$	1.00														
ln GDP/capita$_i$	0.12	1.00													
ln GDP/capita$_{ij}$ difference	-0.06	-0.11	1.00												
ln GDP$_i$	0.11	-0.20	-0.23	1.00											
ln GDP similarity$_{ij}$	-0.08	-0.13	-0.12	0.06	1.00										
ln Openness$_j$	0.05	0.05	0.14	0.03	0.003	1.00									
ln Distance$_{ij}$	-0.22	-0.14	0.13	-0.54	0.11	-0.25	1.00								
Landlocked$_i$	-0.03	0.02	0.16	-0.15	-0.03	-0.03	-0.24	1.00							
Common border$_{ij}$	0.13	0.03	-0.08	-0.002	0.07	0.04	-0.61	0.07	1.00						
Language$_{ij}$	0.16	0.15	-0.14	0.06	-0.13	0.09	-0.45	0.10	0.55	1.00					
Euro$_{ij}$	0.10	0.23	-0.26	0.01	-0.10	0.01	0.01	-0.15	0.07	0.16	1.00				
Economic globalization$_i$	0.05	0.53	-0.15	-0.49	-0.01	-0.04	-0.24	0.34	0.34	0.12	0.19	1.00			
Social globalization$_i$	0.06	0.53	-0.32	-0.09	0.02	-0.02	-0.26	0.22	0.22	0.16	0.09	0.68	1.00		
Political globalization$_i$	-0.03	-0.25	-0.24	0.32	0.26	0.06	0.09	-0.29	-0.29	-0.01	0.10	-0.23	0.04	1.00	
Corruption-free$_i$	0.06	0.77	-0.22	-0.09	-0.02	-0.00	-0.12	-0.10	-0.10	0.13	0.16	0.53	0.66	-0.07	1.00
Economic globalization$_{ij}$ similarity	-0.04	-0.19	-0.11	0.43	0.05	-0.11	0.25	-0.12	-0.12	-0.10	-0.07	-0.35	-0.47	-0.03	-0.25
Social globalization$_{ij}$ similarity	-0.07	-0.27	0.11	0.37	0.09	-0.19	0.26	0.06	-0.10	-0.09	-0.12	-0.42	-0.49	0.06	-0.25
Political Globalization$_{ij}$ similarity	0.10	0.22	-0.41	0.24	-0.18	0.10	-0.20	0.15	-0.02	0.07	-0.01	0.17	0.05	-0.58	0.10
Corruption-free$_{ij}$ similarity	0.13	-0.23	0.11	0.53	-0.04	-0.09	0.31	0.01	-0.18	-0.21	-0.17	-0.17	-0.19	0.02	-0.19

Source: Own calculations.

4. Econometric Results

The econometric results are presented in four steps from baseline model, augmented model with globalization and corruption-free regressors for the home country, augmented model with globalization and corruption-free regressors for the host country, and model with globalization and corruption similarity.

4.1. Baseline Model

T a b l e 3

Baseline and Augmented Models for Outward FDI$_{ij}$

Variable	(1)	(2)	(3)	(4)
ln GDP/capita$_i$	1.190***	1.653***	1.281***	1.030***
ln GDP/capita$_j$	1.052***	1.086***	0.568	0.887***
ln GDP/capita$_{ij}$ difference	0.995***	0.893***	1.001***	1.183***
ln GDP$_i$	0.670***	0.823***	0.692***	0.705***
ln GDP$_j$	0.640***	0.644***	0.789***	0.679***
ln GDP similarity$_{ij}$	1.630	2.480*	2.523	3.389**
ln Openness$_j$	0.281*	0.303*	0.124	0.307**
ln Distance$_{ij}$	−1.394***	−1.322***	−1.352***	−1.249***
Common border$_{ij}$	−0.684*	−0.623*	−0.602*	−0.569
Language$_{ij}$	1.020	1.106	1.068	1.043
Landlock$_i$	0.000	−0.147	0.024	0.021
Euro$_{ij}$	0.627***	0.501**	0.568***	0.669***
Economic globalization$_i$		0.045***		
Social globalization$_i$		−0.019*		
Political globalization$_i$		−0.014		
Corruption-free$_i$		−0.182***		
Economic globalization$_j$			0.049**	
Social globalization$_j$			−0.039***	
Political globalization$_j$			−0.024	
Corruption-free$_j$			0.123***	
Economic globalization similarity$_{ij}$				0.010
Social globalization similarity$_{ij}$				−0.010
Political globalization similarity$_{ij}$				0.026
Corruption similarity$_{ij}$				−0.121***
Constant	−21.140***	−27.405***	−18.060***	−19.603***
N	2 310	2 310	2 310	2 310
R^2	0.109	0.114	0.115	0.113

Note: Level of significance: *** 1%, ** 5% and * 10%.

Source: Own estimations.

Regression equation (1) in Table 3 presents the estimated econometric results of the baseline model for the outward FDI. The outward FDI is significantly positively associated with host and home country GDP per capita as well as with their GDP per capita difference. The latter confirmed the validity of Linder hypothesis. The regression coefficients were found to be significantly positively associated for the home and host GDPs, but not significant for their GDP similarity. In addition, the regression coefficient is significantly positive for the Euro adoption similarity and to a lesser extent for the host country Openness, but not

significant for the Language similarity between the pairs of the OECD-22 countries. On the other hand, the outward FDI were found to be significantly negatively associated with the geographical Distance between the capitals in the OECD-22 countries and to a lesser extent for Common border, but insignificant for the Landlocked geographical home country position. These results are consistent with the set of H1, H4, H5, H6 and partly H3, but not with the H2.

4.2. Augmented Model with Globalization and Corruption-free Regressors for the Home Country

In regression equation (2) in Table 3 the baseline model variables by the signs and statistical significance remained rather stable and thus robust in the augmented specified models with the globalization and corruption-free regressors for the home country. The regression coefficient for home country GDP per capita is higher than for host country GDP per capita and the regression coefficient for GDP similarity has become significant at 10% significance level.

Regarding host country globalization and corruption-free explanatory variables, the outward FDI were found to be significantly positively associated with the Economic Globalization in the home country and significantly negatively associated with the Corruption-free and to a lesser extent with Social Globalization in the home country, but statistically not significant with Political Globalization in the home country. The greater Economic Globalization in the home OECD-22 countries, the greater is the outward FDI from home to host OECD-22 countries. This latter finding supports the outward FDI flows from more economically globalized home to host OECD-22 countries, which is consistent with the set H7. On the contrary to our expectations, corruption-free discourages outward FDI from home country.

4.3. Augmented Model with Globalization and Corruption-free Regressors for the Host Country

When the econometric model is specified for regressors for the globalization and corruption-free in the host country in regression equation (3) in Table 3, among the baseline model variables a positive association for the GDP per capita is found insignificant. Statistically insignificant is also the regression coefficient for GDP similarity and the host country Openness, while the Euro adoption explanatory variable is highly significant.

Our specific interest is to investigate the globalization and corruption-free auxiliary regressors for the host country. The econometric results confirmed that the outward FDI was significantly positively associated with Economic Globalization

and Corruption-free in the host country, but significantly negatively associated with Social Globalization in the host country and insignificant with the Political Globalization in the host country. These results are consistent with the H8, but only partly confirmed the H7. These results imply that the outward FDI were constrained and discouraged by social globalization and likely political globalization in the host country. As expected, economic globalization and corruption-free in the host country encouraged the outward FDI from the home to the host OECD-22 country.

4.4. Model with Globalization and Corruption Similarity

As can be seen from equation (4) in Table 3, the baseline model specification variables remained consistently robust by the regression coefficients signs and their statistical significance: significantly positive sign for home and host country GDP per capita and their difference, the size of home and host country GDP and their similarity, host country FDI openness and the Euro adoption have significantly positive sign, but significantly negative sign for Distance. The regression coefficients for Common border and other proximity variables are insignificant.

Among the OECD-22 bilateral countries, the outward FDI were not found to be significantly correlated with Economic, Social and Political Globalization similarities. The regression coefficient that is pertained to Corruption similarity was found of a significantly negative sign. These results are inconsistent with the set of H9 and H10 as the outward FDI were found either not significant correlated or in the case of the Corruption-free similarity significant, but opposite sign.

5. Findings

The paper has investigated determinants of the outward FDI by using the panel corrected standard error model for the OECD-22 countries. The agglomeration effect is controlled by the ratio of inward FDI to GDP as economic size of the country.

The study contributes to the empirical literature analysing potential determinants of outward FDI in developed and developing countries. The paper provides evidence of link between globalization, corruption-free and its level of similarity among them and outward FDI flows. It confirms the presence of statistically significant positive association between economic aspect of globalization in home and host country and outward FDI flows on one hand, and between FDI outflows from low corruption-free home country to high corruption-free host country.

Among the baseline control variables turned out to be statistically significant the positive association sign of the outward FDI with respect to home and host country GDP per capita and their difference, home and host country GDP and to a lesser extent their similarity, the Euro adoption and the host country openness with the inward FDI/GDP ratio, but with a significant negative association sign of the outward FDI with respect to the geographical distance between the countries capitals and to a lesser extent for Common border. Not significant are found regression coefficients for language proximity and being landlocked country.

The results and findings on positive associations between home and host country GDP per capita and their difference with outward FDI are consistent with the theoretical expectations and set hypotheses 5 and 6 and the Linder's hypothesis. The analysed OECD-22 countries are ranked among the most economically developed countries by GDP per capita in the world.

Consistent with set hypotheses 1 and 2 is the finding that the economic size in home and host countries and their similarity increase the outward FDI owing from both supply and demand side factors. On supply side one of modes of internationalization of enterprises with overall economic growth in home countries are their outward FDI, while growth of GDP in host country on demand side provides opportunities for a greater presence of inward FDI in GDP in host country owing from the increase of the market size. As interesting, the regression coefficients for home country GDP are greater than for host country GDP suggesting a crucial role of home market size for outward FDI. Consistent with set hypothesis 3 is finding that favourable investment climate conditions can be strengthened by host country FDI openness with increasing agglomeration of multinational enterprises and the Euro adoption, which has simplified financial transactions between their members by overcoming the exchange rate risks owing from national banks' monetary and exchange rate policies.

A significant negative association between the outward FDI and the geographical distance between the home and host countries capitals is consistent with the theoretical expectations and set hypotheses 4.

Our specific focus has been on outward FDI and globalization and corruption-free variables. They turned out to be statistically significant positive only with respect to the home and host country economic globalization and host country corruption-free. The bilateral partners' countries with high level of economic globalization have experienced an important role for the FDI flows. The analysed OECD-22 countries have created an environment and government policy in favour of greater level of economic globalization with easier access for foreign investors to enter in more economic sectors and establish operations with removing restrictions on foreign equity participation and ownership by discriminating

against foreign investors in favour of domestic ones. This finding for home and host country economic globalization is consistent with the set hypotheses 7.

Striking finding is significant positive regression coefficient for host country corruption-free and significant negative regression coefficients for home country corruption-free and corruption similarity between home and host countries. The inverse relation between home country corruption-free and outward FDI suggest outflows of FDI from more to less corrupted OECD countries. This finding is also supported with significant negative association between corruption similarity and the outward FDI. Therefore, the corruption-free in host country with reliable institutional framework is found to be an important pull factor for the outward FDI flows from less corruption-free home country to more corruption-free host OECD-22 bilateral country. This finding for host country corruption-free is consistent with the set hypotheses 8, but not for home country and host country corruption similarity. This finding suggests that the quality of governance, including the control of corruption in host country has played an important factor in strengthening the outward FDI across the OECD-22 countries. It is worth mentioning that most OECD-22 countries by the degree of corruption-free are ranked higher than most other countries in the world.

In addition to significant negative association for level of home country corruption-free, among unexpected results are significant negative associations of outward FDI with home and host country social globalization. Home and host country political globalization and its similarity are not found significant driver for the outward FDI. Further investigation would require counter-intuitive significant negative regression coefficients for home and host country social globalization and insignificant regression coefficient for its similarity.

Conclusion

The paper contributes to the empirical analysis of relevant determinants of outward FDI. The key contribution is to testing hypotheses on either confirm or reject presence of important link between corruption and globalization effects and level of outward FDI. The results for the baseline model confirmed the positive link of home and host country GDP per capita and Linder's hypothesis, home and host country size of GDP and its similarity, host country agglomeration of multinational enterprises, common currency euro, and the negative link with geographical distance. Home and host country economic globalization levels strengthened, while home and host country social globalization levels weakened the outward FDI flows between the OECD-22 countries. The control of degree of corruption in host country has a positive effect on outward FDI from home to host

country. This relation is negative in home country and for the similarity in the degree of corruption between home and host OECD-22 countries. The empirical results suggest FDI outflows from less corruption-free home country to more corruption-free host OECD country with clear FDI preference for corruption-free economically globalized OECD host countries.

Among limitations is the relative short 5-years time span of the analysis and decision to use the static cross-sectional oriented panel model rather than dynamic panel model setup. Finally, among issues for future research is to study the outward FDI flows in association with the most recent financial and debt crisis and to up-date the time dimension of the panel data sample over at least 10 years to allow for a time dynamic panel estimation approaches.

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