

Do export, financial development, and institutions affect FDI outflows? Insights from Asian developing countries

Pragyanrani BEHERA

National Institute of Technology Rourkela, Odisha, India
beherapragyanrani@gmail.com

Prajukta TRIPATHY

National Institute of Technology Rourkela, Odisha, India
prajukta.chinu@gmail.com

Bikash Ranjan MISHRA

National Institute of Technology Rourkela, Odisha, India
bikashranjan.mishra@gmail.com

Abstract. *Focussing on the importance of FDI outflows (OFDI) from Asian developing countries, this study examines the impact of export, institutions and financial development on OFDI. Using a balanced panel of 10 Asian developing countries during 2002-2016, this study employs the Pooled Mean Group (PMG) cointegration test and Granger causality test of Dumitrescu and Hurlin (2012) to explore the long-run causal relationship. To validate the results robustness test is conducted. Overall, the findings show that improvement in institutions encourages OFDI in the short-run, but it impedes more OFDI in the long-run. The financial development and export are positively related to OFDI in the long-run. The Granger causality test confirms that there is a uni-directional causality that runs from the quality of institutions and financial development to OFDI, while OFDI induces more export.*

Keywords: OFDI, export, financial development, institutions, panel data.

JEL Classification: C23, F21, F23.

1. Introduction

The distinctive role of FDI attracts several researchers to focus on its various aspects, particularly outflow of FDI (OFDI) from developing and emerging countries.⁽¹⁾ There has been a long debate among policymakers of developing countries, who have considered OFDI as an important catalyst for their economic development. Given the importance of OFDI over past decades, these countries have captured attention of many researchers to defy the available theories (Child and Rodrigues, 2005; Mathews, 2002; Luo and Tung, 2007; Ramamurty, 2009) and empirically examine from various country perspective (Banga, 2008; Gammeltoft et al., 2010; Kim, 2000; Park and Roh, 2019; Tan et al., 2018).

The expansion of international production networks forces world FDI outflows to increase exponentially from about \$240 billion in the year 1990 to more than \$1.45 trillion in 2016 (UNCTAD, 2016). The share of developing economies in the world OFDI flows is surged to about 28 percent in 2016 from only around six percent in 1990 (UNCTAD, 2016). But, this surge of OFDI is prominently visible in the aftermath of the Asian financial crisis (1998), in which Asian developing countries have played a major role. These countries have sharply been diversifying their foreign investment and account for more than 26 percent of the World's overall FDI outflows (World Investment Report, 2019). The more active players in this region are South, East, and South-East Asian countries like China, Hong Kong, India, Korea, Malaysia, Singapore, and Thailand. However, following the global competition, the government of other developing countries has also made several macroeconomic reforms and liberalise trade and investments that significantly affect the internationalisation process in the Asian region.

The new wave of developing country MNEs (DMNEs) has seen an upsurge in the early 2000s, although it has already begun in the late 1970s (for example, Lall, 1983; Lecraw, 1977). Mathews (2006) shows that the increasing foreign investment by MNEs from emerging countries aims to overcome their initial disadvantages including lack of skill and knowledge, less developed financial system, and poor institutional quality. However, a series of academic papers empirically analyse the determinants of inward FDI flows to developing countries (Gupta and Ahmed, 2018; Phung, 2016; Wernick et al., 2009), relatively small number of literature deal explicitly with the determining factors of FDI stemming from the developing countries (Bano and Tabbada, 2015; Klimek, 2015; Padilla-Perez and Nogueira, 2016; Rasiah et al., 2010). These studies provide evidence for factors like domestic market size, natural resources, per capita income, trade openness, savings, and institutions that are the key to drive FDI outflows. However, the present study aims to concentrate on export, institutional quality and less studied financial development of source countries and their impact on FDI outflows, particularly from Asian developing countries. Although the literature is available, less attention is paid towards the relationship between home country financial development and OFDI. Further, the causal interaction of determinants like export, financial development, and institutional quality with OFDI is omitted from the previous studies, especially in the current context. Thus, to examine the causal relationship this study uses advanced techniques of cross-sectional dependency test and Granger causality test propounded by

Dumitrescu and Hurlin (2012) to avoid the presence of a common fixed effect among the sample countries.

The rest part of this study is planned as follows. Section 2 describes the pertinent theoretical and empirical literature and frames the hypotheses. Section 3 delivers a description of data and outlines the empirical framework for the present study. In section 4 results are reported and, the study concludes with closing remarks in the last section.

2. Literature review and analytical framework

The motivation for the emergence of FDI outflows from developing countries has well documented in Tolentino (1993). Dunning et al. (1997) summarize the descriptions of empirical literature as “a ‘new’ kind of MNE that – so it was argued – differed considerably from that of ‘conventional’ industrialized country MNEs, in terms of its ownership (O) advantages, motivation, geographical direction and mode of overseas activity”. Although there are considerable degrees of investment flows from developing countries, many theoretical arguments⁽²⁾ are explained foreign investment activities from the perspective of developed source countries (Gammeltoft et al., 2010; Narula and Nguyen, 2011; Ramamurty, 2009). Thus, developing countries require new theories to explain the process of internationalisation (Park and Roh, 2019).

From a microeconomic perspective, the OLI paradigm (ownership, locational, and internalisation advantages) addresses the question that why a firm operates its activities in cross border regions. According to this model, it is the firm-specific ownership advantages like brand reputation, patents, managerial skill, and technological know-how that enable firms to internalise their activities in abroad, raising firms’ competitiveness to overcome from their fixed investment costs and to acquire the comparative cost advantages of various locations. But, the question arises, if ownership is the only advantage, how could DMNEs go abroad? To answer this question, in a divergence manner theoretical literature assesses the motives of OFDI from developing countries. Moon and Roehl (2001) reveal that the “unconventional FDI” has ownership disadvantages, such as the small size of the market, lack of technology and resources, weak political institutions that push them to invest in abroad to compensate their domestic “imbalance”. The study of Mathews (2002) shows that the motives of latecomer MNEs to integrate with global markets (“Linkage”), to take the advantage of cost-efficiency in production (“Leverage”), and to learn new technology and managerial skills (“Learning”) to overcome from their home country disadvantages. In another study, Luo and Tung (2007) demonstrate that OFDI from emerging countries aims to acquire strategic assets like technology and managerial capabilities in the foreign market. Combining all the motives of OFDI, Dunning et al. (2008) provides the frame of asset-exploiting and asset-augmenting nature of DMNEs. The asset-exploiting FDI is related to ownership advantages that can effectively coordinate cross-border activities and allow them to access natural resources and large foreign markets. However, the asset-augmenting nature of investment leads to domestically deficient firms to achieve the ownership advantages from abroad and thereby augment their existing assets and local

capabilities. While the former pattern of FDI may encourage DMNEs to invest in other developing countries, but the latter drives them towards developed countries.

On the other hand, it is argued that the internationalisation process of investors originated in emerging countries are different from developed economies with regard to the level of institutional development, macroeconomic conditions, and resource endowments (Madhok and Keyhani, 2012). Similarly, Ramamurty (2009) shows that emerging market MNEs have certain home-specific advantages including understanding the needs of customers, the propensity to function in the adverse business environment, and the ability to produce quality products at a low cost. In this sense, it is not only firm-specific ownership advantages but also country-specific advantages that enable DMNEs to operate cross-border activities.

Mode of foreign market operation: export versus OFDI

The studies of Brainard (1993) and Helpman et al. (2004) review different modes of foreign market operation of MNEs including exports or serve foreign consumers locally by establishing their plant or provide a license to foreign producers to produce their product or any suitable combination of them. Brainard (1993) indicates the “proximity-concentration” hypothesis that gives an explanation for FDI as a preferred mode of foreign market operation over international trade. The firm’s decision to export or OFDI depends on trade barriers. The increasing trade barriers induce firms to invest in abroad over export, while the reduction of trade barriers encourages both OFDI and export, which shows a substitute and complementary relationship between export and OFDI respectively. Despite, the literature are available on the linkage between OFDI and export, there is no uniformity in the outcome that both are whether insignificant (Goh et al., 2012) or substitute (Bhasin and Paul, 2016) or complementary (Banga, 2008).

According to the report of Global Investment Competitiveness (2018), outward FDI encourages export competitiveness in the domestic market by shifting knowledge and technical know-how from foreign to home countries that show the complementarity between OFDI and export. Similarly, the study of Bano and Tabbada (2015) pinpoints the growing intensity of trade that facilitates the capability of domestic investors and boosts outflow of FDI from developing countries. In another study, Tan et al. (2018) analyse the determinants of outward FDI using the panel of 10 Association of Southeast Asian Nations (ASEAN) member countries for the period of 26 years from 1986 to 2012. Using a panel cointegration approach the authors suggest that in the long-term trade openness leads to FDI outflows. On the other hand, OFDI allows firms to cross the domestic border, to access new technology, import lower-cost intermediaries from the foreign affiliates and thereby enhance export competitiveness of the parent companies (Herzer, 2008). Amann and Virmani (2015) identify the mediating role of OFDI from developing countries as “knowledge spillover”. Despite, emerging country MNEs are at their early stage of internationalisation, they have catch-up capacity to exploit the comparative advantage across countries (Ramamurti, 2012). Though there is evidence in a positive influence from both the direction with respect to OFDI and export, this paper seeks to re-explore the empirical relationship. Thus, this study hypothesise that FDI outflows from developing countries could encourage more export.

OFDI and institutions

Buckley et al. (2007) emphasize the significance of home country institutions⁽³⁾ to determine the decision of strategic outflow of FDI. It is argued that the paucity of resources is not the prime constraint for the investment of developing countries (Prasad and Rajan, 2008). But, the problems exist in these countries are inadequate infrastructure, low skilled labour force, risk of profitability in investment that arises from lack of institutions, poor protection of property rights and financial underdevelopment (Alfaro et al., 2008; Prasad and Rajan, 2008; Rahman et al., 2019). This argument may explain that it is the institutionally deficient firms in their home, search for complementary assets including better institutional quality in the foreign market. In an empirical analysis, Klimek (2015) examines the linkage between institutions and outward FDI for a sample of 125 countries. The author suggests that the higher quality of domestic institutions have created favorable conditions for the investors in home countries and thereby reduce more OFDI flows. In contrast, examining the determinants of FDI outflows from emerging countries, Cai et al. (2019) find that better institutional quality of emerging source countries encourages more OFDI. Therefore, this study envisages that the improvement in the institutional quality of the domestic market may negatively relate to OFDI.

OFDI and financial development

A series of the paper examines the influence of financial development on FDI inflows as per the definition of the Bayar and Gavriletea (2018), but relatively less attention has been given towards the importance of home country financial development for OFDI, especially from developing countries. The study of Zhao et al. (2017) argues that the availability of financial facilities in the home country will encourage domestic firms to invest in abroad rather than to increase export activities. Similarly, Desbords and Wei (2014) suggest that the financial development of a source country can directly induce OFDI by improving the firms' ability through raising external finance and indirectly by fostering domestic activities. In other words, the availability of financial facilities in home countries encourages firms' foreign investment activities. However, it can be seen that MNEs from developing countries are financially constrained in their domestic market. Thus, these investors are looking for a well-developed and secure financial system in the host countries (Donaubauer et al., 2016). In other words, financial development in the host and source countries acts as a substitute for each other. On the other hand, in case of any financial adversity in the host countries, it could affect mostly DMNEs due to their financial dependency on the foreign market (Desbordes and Wei, 2014). Thus, this study expects that initially, financial development in the domestic market discourages foreign operations of DMNEs. But, after financially sufficient in the source, DMNEs can able to sustain their investment in the host countries even in case of a lack of financial availability through raising external finance from their source countries. Therefore, the current study envisages that the effect of financial development of source countries on OFDI is conditional on the level of financial availability in their domestic market.

3. Specification of data and methods

Data

The present study uses a balanced panel of 10 Asian developing countries as China, India, Bangladesh, Singapore, Indonesia, Philippines, Malaysia, Thailand, Korea Rep., and Hong-Kong⁽⁴⁾. The selected countries are considered as the top Asian investors and contribute about 85 percent of total outward FDI from this region (UNCTAD, 2016). This study covers a time period from 2002 to 2016, as the increasing outflow of FDI from this region has intensified in the aftermath of the early 2000s. The present study uses the outflow of FDI and export (percent of GDP). Financial development index and index of institutions are used as proxies for financial development and development of institutional quality. The authors make use of the variables of interest in the current study are based on the previous literature (see, Bhasin and Paul, 2016; Klimek, 2015; Donaubaauer et al., 2016). The detail description of variables and data sources used in the present study is reported in Table 1.

Table 1. Description of variables and data source

Variables	Descriptions	Data Source
OFDI	Foreign direct investment, net outflows (% of GDP)	WDI
Export	Exports of goods and services (% of GDP)	WDI
DCPB	Domestic credit to private sector by banks (% of GDP)	WDI
DCPF	Domestic credit provided by financial sector (% of GDP)	WDI
DCP	Domestic credit to private sector (% of GDP)	WDI
PCMB	Private credit by banks and other financial institutions to GDP (%)	GFD
Liquid	Liquid liabilities to GDP (%)	WDI
FinI	Financial development index	Calculated
GE	Government Effectiveness	WGI
PS	Political Stability and Absence of Violence/Terrorism	WGI
RQ	Regulatory Quality	WGI
CC	Control of Corruption	WGI
RL	Rule of Law	WGI
VA	Voice and Accountability	WGI
InsqI	Institutional quality index	Calculated

Note: WDI: World Development Indicator, the World Bank

GFD: Global Financial Development Database, the World Bank

WGI: World Governance Indicator, the World Bank

FinI: FinI is a combined form of DCPB, DCPF, DCP, PCMB, and Liquid

InsqI: Institutional quality index is a combination of GE, PS, RQ, CC, RL, and VA

Source: The authors.

This study makes use of the Principal Component Analysis (PCA) to construct the two indices of financial development (FinI) and institutional quality (InsqI). PCA is widely used among other multivariate techniques to reduce the dimensions of a large number of correlated variables in a smaller set. The financial development index consists of the variables like domestic credit to the private sector (DCP), domestic credit from banks to the private sector (DCPB), credit provided by the financial sector (DCPF), private credit by banks and other financial institutions (PCMB), and liquid liabilities (Liquid). These proxies measure the availability of credit to domestic firms and covered a broader measure of financial development (Kholdy and Sohrabian, 2008; Pradhan et al., 2018). While, the institutional quality index contains highly correlated proxies such as the effectiveness of government (GE), regulatory quality (RQ), law and order (RL),

corruption (CC), accountability (VA), and political stability (PS), for which this study follows Kurul (2017).

Methods

Theoretically, the influence of export, financial development, and institutions on the flow of outward FDI depends on the positive and negative effects and on the direction of causality. To examine the above linkages, this study yields the following benchmark econometric model:

$$OFDI_{it} = f(Export_{it}, Financial\ development_{it}, Institutions_{it}) \quad (1)$$

Where the subscript $i = 1, 2, \dots, N$ denotes the sample country and $t = 1, 2, \dots, T$ is the time period. OFDI is the dependent variable and the explanatory variables are Export, Financial development, and Institutions. The following sub-sections show the detail discussion of various econometric steps to analyse the linkage.

Cross-sectional dependence test (CD test): The current study is based on the Asian region and selected factors are broadly influenced by the global effects, so there may be a possibility of the occurrence of a common unobserved effect among countries. However, the existence of a fixed effect in the panel time-series data may report the erroneous result. To examine the presence of cross-sectional dependency among countries, this study uses adjusted Lagrange Multiplier (LM_{adj}) test proposed by Pesaran et al., (2008), because the time period ($T = 15$) is larger than the cross-section ($N = 10$). The LM_{adj} test is the extension of Breusch and Pagan's (1980) LM model.

Panel unit root tests: To measure the cointegration among the variables, it is a prerequisite to examining the stationarity of the proposed variables. This study uses both the first (Im et al., 2003) and second-generation (Pesaran, 2007) panel unit root tests. Though the IPS (Im et al., 2003) unit root test allows heterogeneity among cross-sections, the second-generation cross-sectional augmented IPS (CIPS) test assumes cross-sectional independency. Thus, this study conducts a second-generation CIPS (cross-sectional augmented IPS) test that has suggested by Pesaran (2007). CIPS unit root test is a robust and reliable estimator in the existence of cross-sectional dependency than conventional IPS unit root tests. The CIPS unit root test is a simple average of discrete cross-sectional augmented Dickey-Fuller (CADF) test and the equation is:

$$CIPS = \frac{1}{N} \sum_{i=1}^N CADF_i \quad (2)$$

Where N is the sample size. Here, the null hypothesis is the homogeneous non-stationary against the alternative hypothesis of stationary.

Panel cointegration tests: In order to examine the presence of cointegration among the variables, the current study uses the Pooled Mean Group (PMG) method provided by Pesaran et al. (1999). As time period (T) is larger than sample countries (N), the PMG estimation, the panel version of the Autoregressive Distributed Lag (ARDL) model is appropriate for this analysis (Tan et al., 2018). The main advantage of PMG method is unlike standard cointegrating techniques, it evaluates the existence of short- and long-run relationship between the variables and ignores the order of integration, whether it maybe

I(0) or I(1) or a combination of I(0) and I(1). In addition, despite the PMG estimation keeping the long-run coefficients identical, it is advantageous over the Mean Group (MG) method that allows coefficients of the short-run and speed of adjustment varies across countries. The appropriate technique between MG and PMG is verified by using the Hausman test. This study formulates the following framework for the empirical analysis:

$$\begin{aligned} \Delta OFDI_{it} = & \phi_0 + \sum_{j=1}^p \theta_i \Delta OFDI_{i,t-j} + \sum_{j=1}^p \psi_i \Delta Export_{i,t-j} + \sum_{j=1}^p \delta_i \Delta FinI_{i,t-j} + \\ & + \sum_{j=1}^p \rho_i \Delta InsqI_{i,t-j} + \gamma_0 OFDI_{i,t-1} + \gamma_1 Export_{i,t-1} + \gamma_2 FinI_{i,t-1} + \gamma_3 InsqI_{i,t-1} + \\ & + \mu_{it} \end{aligned} \quad (3)$$

Where Δ is the difference operator; p is lag order; ϕ_0 represent fixed effect term and μ_{it} is a white noise error term. In the above equation coefficients of the summation signs (\sum) represent the short-run effects of the variables. The estimates of γ correspond to the long-run cointegration that assumed to be equal for all the countries.

Panel Granger causality test: Finally, this study investigates the causal interaction among the variables. The panel cointegration method measures the short- and long-run relationship, but not the direction of causality. Due to the existence of cross-sectional dependency, the current study uses the heterogeneous panel non-causality test proposed by Dumitrescu and Hurlin (2012), which is considered as the improvement over the Granger (1969) causality test. The Wald statistics is the average value of each individual cross-section and the equation is:

$$W_{N,T} = \frac{1}{N} \sum_{i=1}^N W_{i,T}$$

Moreover, this test follows two distributions as asymptotic and semi-asymptotic distribution. Asymptotic distribution is employed when $T > N$ and semi-asymptotic distribution is used in the case of $N > T$. In this study, our sample contains a large time period (T) and small cross-section (N). Hence, if $T > N$ the standardized statistical equation is:

$$Z_{N,T} = \sqrt{\frac{N}{2K}} (W_{N,T} - K) \rightarrow N(0,1), \quad (4)$$

where K is the lag order.

The null hypothesis is no causality in any of the cross-sections, whereas the alternative hypothesis is the presence of causality at least for some cross-sections.

4. Empirical results

The preliminary information about the samples is summarized in Table 2 and Table 3 through descriptive statistics and matrix of correlation respectively. It is noted in the correlation matrix that the proxies of financial development and institutions are correlated. More specifically, OFDI is highly correlated with export and institutional quality.

Table 2. Summary statistics

Variables	Mean	Std. Dev.	Min	Max
OFDI	.049	0.089	-0.012	0.483
Export	0.724	0.665	0.111	2.312
DCPB	66.9	49.92	19.34	233.2
DCPF	104.2	49.60	34.18	235.9
DCP	97.09	50.60	21.27	233.2
PCMB	63.90	46.25	16.47	218.9
Liquid	104.6	76.71	0	362.1
CC	.0992	1.051	-1.496	2.325
GE	.5360	.6998	-.9113	2.436
RQ	.3502	.9401	-1.126	2.261
RL	.2235	.6761	-1.047	1.660
VA	-.1402	.6523	-1.746	.7456

Source: The authors.

Table 3. Correlation coefficient matrix

Variables	OFDI	Export	FinI	DCP	DCPB	DCPF	PCMB	Liquid	InsqI	CC	GE	RQ	RL	PS	VA
OFDI	1														
Export	0.794*	1													
FinI	0.603*	0.613*	1												
DCP	0.605*	0.587*	0.963	1											
DCPB	0.623*	0.631*	0.935*	0.990*	1										
DCPF	0.473*	0.382*	0.874*	0.963*	0.948*	1									
PCMB	0.632*	0.654*	0.915*	0.978*	0.965*	0.929*	1								
Liquid	0.808*	0.646*	0.792*	0.738*	0.754*	0.661*	0.785*	1							
InsqI	0.702*	0.884*	0.669*	0.671*	0.701*	0.487*	0.676*	0.572*	1						
CC	0.719*	0.921*	0.644*	0.632*	0.660*	0.430*	0.657*	0.600*	0.979*	1					
GE	0.663*	0.889*	0.690*	0.694*	0.718*	0.518*	0.704*	0.572*	0.977*	0.960*	1				
RQ	0.722*	0.900*	0.705*	0.716*	0.735*	0.541*	0.736*	0.613*	0.983*	0.966*	0.972*	1			
RL	0.686*	0.854*	0.647*	0.606*	0.687*	0.481*	0.659*	0.554*	0.989*	0.961*	0.960*	0.965*	1		
PS	0.633*	0.817*	0.731*	0.711*	0.755*	0.550*	0.709*	0.581*	0.942*	0.917*	0.927*	0.908*	0.912*	1	
VA	0.294*	0.221*	-0.054	-0.027	-0.004	-0.106	-0.079	-0.042	0.436*	0.351*	0.300*	0.378*	0.479*	0.251*	1

Note: * denotes level of significance at below 5%.

Source: The authors.

The first step of this empirical estimation is to identify cross-sectional dependency of the variables. Table 4 shows the findings of Breusch and Pagan's LM test and LM_{adj} test of Pesaran et al. (2008). The null hypothesis is the existence of cross-sectional independence, which is rejected at a 1 percent level of significance. Thus, it is confirmed that there is cross-sectional dependency amongst the countries in the panel time-series data. In this light of results, this study uses first- and second-generation panel unit root tests.

Table 4. Cross-sectional dependency test

Test	Statistic	p-value
LM (Breusch and Pagan, 1980)	85.56***	0.003
LM _{adj} (Pesaran et al., 2008)	4.832***	0.000
LM CD# (Pesaran, 2004)	2.597***	0.009

Note: #two-sided test. *** denotes the level of significance at 1%.

Source: The authors.

Findings of the IPS and CIPS unit root tests present in Table 5. The IPS test results indicate that OFDI, Export, and Financial development index (FinI) variables are integrated of order one, while the institutional quality index (InsqI) is stationary at level.

In order to verify the level of integration by allowing cross-sectional dependency, this study employs a CIPS test (Pesaran, 2007). However, the outcomes of the CIPS test are also similar to the IPS test results. Based on the difference in integration levels this study employs the PMG cointegration test (Pesaran et al., 1999) to measure the short- and long-run associations among the variables.

Table 5. Panel unit root test

First Generation		Second Generation
Level	Δ	Level
IPS test		CIPS-test
-0.132	-6.453***	-2.022
0.542	-5.048***	-0.792
-0.638	-4.232***	-1.698
-3.230***	—	-2.472***

Note: *** denotes the level of significance at 1%. I (0) and I (1) denote the order of integration at the level and first difference (Δ) respectively.

Source: The authors.

Table 6. PMG panel cointegration test

Variables	Dependent variable: OFDI		
	MG	PMG	Robust-PMG
Long-run Coefficients			
Export	0.092*(0.057)	0.025**(0.032)	0.116***(0.000)
Finl	-0.047**(0.038)	0.011*(0.059)	0.033***(0.000)
lnsq	0.079**(0.038)	-0.010**(0.011)	-0.035***(0.000)
Short-run Coefficients			
ECT(-1)	-0.965***(0.000)	-0.501***(0.000)	-0.656***(0.000)
Δ Export	-0.054(0.133)	-0.009(0.829)	0.053(0.501)
Δ Finl	0.038(0.435)	-0.007(0.795)	-0.085(0.171)
Δ lnsq	-0.010(0.456)	0.017**(0.030)	0.089(0.292)
Constant	-0.108(0.258)	0.016(0.113)	-0.009(0.605)
Hausman test: Chi2(3) (prob>chi2)	1.80(0.615)		

Note: ***, ** and * denote level of significance at 1%, 5% and 10% respectively. The figures in the parenthesis () represent p-value.

Source: The authors.

Table 6 reports the outcome of the PMG cointegration test. Hausman test result demonstrates that the p-value is greater than 5 percent that indicates the PMG estimation is appropriate over the MG model. The error correction term ECT (-1) represents negative and significant values in the model that confirms the presence of the long-run relationship in at least one of the cross-sectional countries. The findings of this study show a positive relationship between export and outward FDI in the long-run. It shows the complementary relation between export and outward FDI in the Asian region. Banga (2008) finds a similarly positive result for the two variables, the author shows that the increasing exports from developing countries induce outflow of FDI because it lowers the uncertainties in foreign investment. While there is a positive relationship between financial development and outward FDI in the long-term and both are significant at the 10 percent level. It is also notable that the short-run result among them brings a negative association, though it is insignificant. Thus, it supports our hypothesis that the initial development of the financial systems relatively less potent to promote the OFDI from

developing countries, but in the long-run, it encourages more FDI outflows. However, in the long-run institutional qualities have a negative effect on OFDI, but in the short-run, there is a positive relationship found. It indicates that improvement in domestic institutional quality discourages more outflow of FDI in a longer time period but immediately promotes the outflow of FDI from developing Asian countries. This finding seems to be similar to that of Klimek (2015). However, the short-run result of export suggests that the variable is not significantly cointegrated with OFDI.

In order to validate the above results, this study also checks the robustness of the PMG estimation by excluding the crisis period 2007-2008. According to the World Investment Report (2010), due to the financial crisis FDI inflows to developing and developed countries reduced by 44 and 24 percent respectively. However, despite the severity is relatively less than in developed countries, FDI outflows from developing countries are affected by 23 percent. Thus, it may be pointed out that the PMG estimations are sensitive to the financial crisis period. It is observed from the robust-PMG results (Table 6) that the long-run estimates are robust and significant at 1 percent level.

Table 7. Dumitrescu and Hurlin's dynamic panel causality test

Null hypothesis	W-stat	Z-bar stat	Causality
Export→OFDI	2.213 (0.378)	-0.881	No
OFDI→Export	37.533*** (0.000)	10.287	Yes
Finl→OFDI	12.479** (0.018)	2.365	Yes
OFDI→Finl	6.718 (0.587)	0.543	No
InsqI→OFDI	6.024*** (0.004)	2.816	Yes
OFDI→InsqI	2.875 (0.861)	0.175	No

Note: ***, ** and * denote level of significance at 1%, 5% and 10%, respectively. The figures in the parenthesis () represent p-value.

Source: The authors.

Finally, the current paper verifies the direction of causal relationship among the variables. Table 7 reports the findings of the Granger causality test of Dumitrescu and Hurlin (2012). The significance of the Wald statistics specifies that there are uni-directional causality runs from financial development and institutional quality to OFDI. However, this study finds that more outflow of FDI causes export at a 1 percent level of significance. In contrast to the findings of Banga (2008), the result of this study supports the argument of Potterie and Lichtenberg (2001) that through catch up capacity investors from developing countries learn the managerial skills and new technologies in the foreign market and shift back the knowledge to home country producers. Thus, OFDI leads to more productivity and enhance export competitiveness of the domestic firms. These results make sense that increasing OFDI from developing countries are motivated by learning new techniques and skills in the host countries and transfers that knowledge to the home producers and enhance export competitiveness.

5. Conclusions

Although FDI outflows growing from developing countries, the impact of source country factors on outgoing FDI is still ambiguous for policymakers. The main purpose of the current study is to evaluate the impact of exports, financial development, and institutional quality on OFDI and their direction of causality, for which this study uses a panel of 10 Asian developing countries during the period 2002 to 2016.

The findings of the PMG model indicate that the development of financial structure and exports are positively cointegrated with OFDI in the long-term. Despite the financial development positively related to OFDI, it is less significant to encourage more outgoing foreign investment. Because it is theoretically grounded that investors from developing countries are engaged in cross-border activities due to a lack of credit availability in the domestic market (Donaubauer et al., 2016). On the other hand, improved quality of institutions has a negative impact on OFDI in the long-run, but in the short-run it promotes OFDI. In addition, these results are confirmed by the robustness check and validated the strong long-run relationship among the estimated variables. The results of Granger causality test support that the improvement in the financial system and institutions has a significant causal influence on OFDI. While increasing OFDI induces more exports from Asian regions.

Though this study has limitations that it ignores all other pull and push determinants of OFDI, it has several operational implications for making a decision on FDI outflows from developing countries. The current study supports the argument that increasing foreign investment activities of MNEs enhance their efficiency and productivity at home and abroad and make the possibility of export competitiveness. The findings of financial development and institutional quality have held some practical implications for researchers and policymakers. To understand the effect of these variables, the current paper empirically interprets the existing theories. In this line, to achieve a desired level of OFDI, developing source countries should provide more attention to the development of the domestic financial system and thereby might reduce the possible risks of investment during financial adversity in host countries. On the other hand, to protect the interest of the domestic market, policymakers of these countries should consider improving institutional qualities to discourage the unwanted outflow of FDI. Because, more illicit capital outflows from developing countries has an adverse effect on the efforts to achieve the target of sustainable and inclusive growth (Rahman et al., 2019). Thus, studies on the outflow of FDI from an individual developing source country should be further examined in terms of both source and host country's perspectives for similar determinants.

Notes

- (1) There are no strict definitions exists for the classification of developing and emerging countries (Nielsen, 2011). The literature uses the term “Developing countries” and “Emerging countries” interchangeably. The term developing countries are used throughout this study as per United Nations’ classification.

- (2) For more details see the product life cycle theory of Vernon (1971) and the OLI paradigm of Dunning (1981).
- (3) North (1990) defines institutions as the game of the society, which can be economic, political, or societal constraints that encourage or discourage the interaction among the elements in an economy.
- (4) Countries are arranged on the basis of the average growth rate during the study period.

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