THE EFFECTS OF OUTWARD FOREIGN DIRECT INVESTMENT AND INSTITUTIONAL QUALITY ON ECONOMIC GROWTH

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Abstract: This study examines the interactions of outward foreign direct investment with institutional quality as well as other macroeconomic determinants to determine whether their joint impact promotes home country economic growth. Econometric techniques such as the pooled OLS, fixed effect, differenced Generalized Methods of Moment, and the System Generalized Methods of Moment (GMM) are utilized for panel dataset of 141 countries for the period 2003-2019. The study finds that the dynamic interaction of outward foreign direct investments (FDI) and institutional quality is positive and boosts home country's economic growth and development. Furthermore, evidence shows that the mutual reinforcement of outward FDI and exchange rate gives rise to economic growth. This suggests that when home country's currency appreciates, there may be a higher flow of overseas direct investment to countries with weaker exchange rate, given that the domestic currency can buy more investment. This enhances economic growth through forward and backward linkages. These results imply that policymakers should consider sound economic policies that integrates outward FDI with home country institutions as well as other economic determinants to enhance economic growth.

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Introduction

Over the past few decades, outward foreign direct investment flows (hereafter referred to as outward FDI) have played a crucial role in stimulating global economic growth. Overseas investment allows firms to penetrate new markets, enables low-cost importation of goods from affiliates abroad and transfer foreign technology to home country. These activities improve competitiveness of investing firms and boost domestic growth. Nevertheless, numerous studies have showed that outward FDI spillover can lead to hollowing-out effects and decrease home country economic growth. For this reason, economics scholars have allocated enormous time and energy to find out the impact of oversea investments flow on home countries' economic growth. This has led to the formulation of numerous sets of national policies that promotes and stimulates outward FDI flow by policy makers of different countries. Moreover, it is possible that outward FDI spillovers for economic growth may not occur if there are institutional deficiencies or obstacles in the absorptive capacity of domestic enterprises. Thus, Buitrago & Camargo (2020) paper found that home country institutions play a vital role as either supportive or constraining firm's decisions for foreign investments expansion. Other numerous studies have also showed that quality of institution matters in attracting as well as facilitating foreign investment flows (Osabuohien-Irabor & Drapkin, 2021). On this account, examining the role of institutions in the mediation of outward FDI-led economic growth will be of great interest to both investors and policy makers.

Empirical findings from recent studies (Herzer, 2010) have showed that FDI induce growth relationship depend on several factors, which include financial market development, political instability, institutional quality, exchange rate, human capital development, etc. These scientific papers only investigate these factors with respect to inward FDI-led economic growth for host countries, whilst other studies merely examine the impact of outward FDI on economic growth. Specifically, Hayat (2019) empirical study shows that institutional quality enhances inward FDI-led economic growth in the host country, especially in low and middle-income countries. However, studies examining the interactions of outward FDI and institutional quality in enhancing the economic growth of the home country remain unexplored. Thus, this study attempts to fill the research gap by using econometric techniques such as, Blundell & Bond (1998) - system GMM (SGMM), differenced GMM, fixed effects and pooled OLS to examine the impact of outward FDI and institutional quality on home country economic growth.

Literature Review

Macro empirical studies examining the relationship between outward FDI, economic growth and institutional development employing either country specific or cross-country datasets has remained

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mixed. Some empirical studies have shed light on the role of institutional quality in facilitating outward FDI flow to improve economic growth. For instance, a U-shaped relationship is found between cultural distance and the efficiency of China's outward FDI in the study that examines the impact of cultural distance (CD) and institutional distance (ID) on the efficiency of China's outward FDI flow for a panel of 43 countries for the period 2003-2016 (Zheng et al., 2020). The result of the potential asymmetric effects of outward FDI on home country economic growth both in long and short run showed that economic growth responds positively but differently to an increase and decrease in outward FDI flow (Ali, et al., 2018).

Chen (2018) investigates the relationship between outward FDI and economic growth for China using provincial-level panel dataset with fixed effects and instrumental variable regression techniques. The study found that outward FDI from both provincial firms and state-owned enterprises have positive impact on China's economic growth. Lee (2010) used both bivariate and multivariate Granger causality frameworks to analyze the interplay between foreign direct investment (FDI) outflows and economic performance of Japan. The non-linear autoregressive distributive lag (NARDL) model to examine the long-run and short-run asymmetric impacts of outward FDI on economic growth in Romania for the period 1990-2019. Results shows that both increase and decrease in outward FDI have positive and significant effects on Romania's economic growth, as increase in outwards FDI increases home country economic growth (Amin, et.al., 2020)

Mohanty & Sethi (2019) study used the Fisher and Johansen's Co-integration tests, and vector-error correction model to examine the impact of outward FDI on gross capital formation, inflation, trade openness, human capital, and economic growth of BRICS countries for the period 1985-2017. Their study found that outward FDI has improved the economic growth of BRICS countries both in the short and long run. Results of wavelet analyses, supported with the econometric block exogeneity long term causality Wald tests revealed that in the long term the outward FDI stocks precedes the home country's economic growth, which is in contrast with the IDP paradigm's premises (Ciesielska & Koltuniak, 2017).

Recently some empirical studies focused on examining the relationship between FDI inflow, institutional quality, and economic growth. For instance, findings reveal that FDI affects economic growth significantly only when institutional quality of countries is above a certain threshold (Jude & Levieuge, 2016). However, FDI inflow was found to slow down economic growth in high income countries due to the indirect impact of institutional quality and FDI-led experienced in low and middle-income countries (Hayat, 2019). But Peres et al. (2018) paper found that institutional quality has positive and significant relationship with FDI in developed countries which can cause a change in institutional quality to improves FDI. Baiashvili & Gattini (2020) study reveals that the relationship between the magnitude of FDI impact and income level on growth is inverted U-shaped. Nevertheless, empirical studies that examines the interactions of institutional quality, outward FDI spillover and economic growth effect in home country growth is scarce. Thus, this study explores these nexuses in a sample of 141 countries using numerous econometric techniques.

Data and Methodology

This study examines the relationship between outward FDI (OFD), institutional quality (INS) and economic growth (EGW) as well as several controlled macroeconomic factors such as inflation(INF), human capital (HCD), government size (GSZ) gross capital formation (GCF), trade openness (TOP), and exchange rate (EXR), in 141countries for the period 2003 - 2019. These countries are selected based on the data availability for the period under study. This study uses log(1+annual inflation rate) values for the values of inflation, so as to deal with the negative signs associated with inflation rate. All values are expressed in natural logarithms.

Model Specification

This study uses the dynamic panel data and employs the System Generalized Method of Moments (SGMM), Differenced Generalized Method of Moments (DGMM), Fixed Effect and Pools OLS estimators to examine the role of institutional quality in the spillover effect of outward FDI on economic growth. However, the system GMM account for the lagged dependent variable, and other econometric issues such as, endogeneity, heterogeneity, simultaneity bias, omitted variable bias, reverse causality, etc. compare to the other estimators listed. In addition to correcting endogeneity and heterogeneity issues, the GMM estimators also account for the presence of heteroskedasticity of unknown form

(Baiashvili & Gattini, 2020). For these reasons, this study adopts the SGMM estimator to explain the relationship between outward FDI, economic growth and institutional quality, while the other estimators are robust checks. This study relates the economic growth model (proxied by real GDP growth) with the determinants of growth (put as independent and control variables) which vary across country and time as shown below. Equation (1) indicates model 1, estimates the impact of outward FDI on economic growth without considering the home country institutions. However, in equation (2) which indicates model 2 the role of institutional quality in outward FDI-led economic growth is put into consideration. Specifically, equation (2) quantifies the impact of institutional quality, outward FDI, lagged value of economic growth, the interactions variables, and the control variables on economic growth.

Table 1: Definitions of variables and data sources

Code	Variables	Description	Exp sign	Sources
EGW	Real GDP Growth	Percentage growth rate of GDP (annual %) based on constant 2015, expressed in logarithm		World Bank (2020)
OFD	Outward FDI flow	The natural logarithm of foreign direct investment net outflows as a % of GDP.	(+)	World Bank (2020)
GCF	Gross capital formation	Acquisition of produced assets based on constant local in natural logarithm.	(+ or -)	UNCTAD, (2020)
HCD	Human capital development	A composite measure of average achievement in key dimensions of human development: a long and healthy life, education and standard of living	(+)	UNDP (2020)
TOP	Trade openness	The sum of a country's exports and imports share of GDP (in. %) in natural logarithm.	(+)	World Bank (2020)
GSZ	Government size	Final consumption expenditure based on constant local currency, expressed in U.S. dollars	(+ or -)	UNCTAD, (2020)
INF	Inflation	Reflects the annual percentage changes in the cost to the average consumer of acquiring a basket of goods and services.	(+ or -)	World Bank (2020)
INS	Institutional quality	Institution composite index which includes voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption.	(+)	WGI
EXR	Exchange rate	Real effective exchange rate of home country, in natural logarithm	(+)	World Bank (2020)

Source: Authors compilations

Model I

$$EGW_{i,t} = \gamma EGW_{i,t-1} + \delta(OFD_{i,t}) + Z_{i,t}\beta + \xi_i + u_i + \varepsilon_{it} \quad (1)$$

Model II

$$EGW_{i,t} = \gamma EGW_{i,t-1} + \delta(OFD_{i,t}) + \varphi(INS_{i,t}) + \psi(INS_{i,t} * OFD_{i,t}) + Z_{i,t}\beta + \xi_i + u_i + \varepsilon_{it} \quad (2)$$

Where γ, δ, φ, β, ψ are the parameter to be estimated for $i = 1, \dots, N$ and $t = 1, \dots, T$. The subscript i and t indicates country and year respectively. The variable $EGW_{i,t}$ is the economic growth, $OFD_{i,t}$denotes outward FDI flow, $INS_{i,t}$ indicates the institutional quality, and the interactions are $(INS \times OFD)$, $(OFD \times EXR)$, $(INS \times HCD)$, and $(OFD \times TOP)$, $Z_{i,t}$ is a vector of control variables such as, $GCF_{i,t}$ denotes the domestic investment in the form of gross capital formation, $HCD_{i,t}$ denotes human capital development for secondary education, $INF_{i,t}$ denotes the rate of inflation, $TOP_{i,t}$ denotes home country trade openness, and $GSZ_{i,t}$ denotes size of government.

Results and Discussion

This study used the pooled OLS, fixed effect, differenced GMM and the system GMM estimators to examine the links between outward FDI, institution and economic growth. The presence of heteroscedasticity and endogeneity in a regression model highly makes OLS unrealiable in estimation which may lead to dynamic panel bias (Baum et al., 2003). Regarding the Fixed-effects (FE) technique, the issue of omitted variable bias in panel data can be address by the estimator, but the technique faces

numerous drawback such as heterogeneity, time invariance, low statistical power, unobserved measurement error, etc. (Terrence et al., 2019). These econometric problems were resolved using the GMM techniques, but the D-GMM estimator (first-differenced GMM estimator) has been found to have poor finite sample properties, in terms of bias and imprecision (Bond, et al., 2001). However, the SYS-GMM technique reduces significantly the finites sample bias and has better accuracy of estimated coefficients due to its capacity to accounts for weakly exogenous instruments. To this end, this study utilizes the SYS-GMM estimator as the main estimating technique to examine the relationship between outward foreign direct investment, Institutions and economic growth. The values of Hansen's J tests are insignificant, indicating that the over identifying restrictions as well as the instrument specifications are valid. This shows that the internal instruments used are generally adequate. More so, the Arellano and Bond second-order autocorrelation tests do not reject the hypothesis of no second-order autocorrelation. This suggests that the error structures of the model are serially uncorrelated.

Table 2 shows the descriptive statistics and correlation matrix of the study. In our study sample, outward FDI has the max average value of 6.626 with the highest standard deviation of 3.398, and the least average value is INS (0.362), while INF has the least deviation in the sample. The coefficients of the control variables in model I and II using the SGMM estimator presented in Table 3 have the expected signs. The gross capital formation (GCF) is positive and statistically significant at 5% level of significance, and the results of the Pooled OLS, Fixed Effect, and DGMM techniques corroborate the positive results. This brings increase in productivity due to foreign technological transfer in home market, and clearly indicates the importance of investment capital to global economic prospect. Using the SGMM technique, the inflation (INF) rate is negative (-0.21) and statistically significant at 10% level of significance. Inflation may affect growth negatively and widen the gap between income groups by disrupting social distribution of income. Negative coefficient is also reported for INF, using the Pooled OLS, Fixed Effect, and DGMM techniques. We also controlled for trade openness(TOP) of the economy, and the result shows that trade openness have general positive and significant effect on economic growth for all estimators. This helps facilitate the transfer of technical progress, boost investment flow, and integrate domestic economy into the international economy. Result for government size (GSZ) is negative and but not statistically significant in model 2. GSZ may affect economic growth negatively or positively. This is viewed from the point that small, and some developing economies have small public sector and the relationship with growth is positive in contrast to growth in developed countries which are more likely to be negative due to the large public sectors.

Table 2: Descriptive statistics and correlation matrix

Descriptive statistics					Correlation matrix								
|	Obs.	Mean	St. D		EGW	OFD	GCF	HCD	TOP	GSZ	IFL	EXR	INS
EGW	2397	1.036	0.631		1.000								
OFD	2397	6.626	3.398		0.028	1.000							
GCF	2397	1.623	0.642		0.258	-0.04	1.000						
HCD	2397	3.543	0.403		0.040	0.157	0.013	1.000					
TOP	2397	0.657	0.142		0.081	0.03	0.032	0.042	1.000				
GSZ	2397	2.924	1.042		-0.10	0.042	-0.03	0.06	0.011	1.000			
INF	2397	0.238	0.253		-0.09	-0.05	0.006	-0.03	0.047	0.062	1.000		
EXR	2397	0.694	0.356		0.035	-0.02	0.046	0.11	-0.01	0.065	0.038	1.00	
INS	2397	0.362	0.663		0.054	0.12	0.233	0.02	0.11	-0.04	0.13	0.23	1.00

Source: Author's calculations

Results of model I and II using SGMM estimator shows that outward FDI have direct positive and significant impacts on economic growth at 10% and 5% level of significance respectively, implying that oversea direct investment expansion leads to 5.93% and 5.83% increase in economic growth (Table 3). The results of OFD-growth using Pooled OLS, Fixed Effect, and DGMM estimators are also positive and significance. This suggests that investment flow abroad contributes positively to domestic economy via vertical and horizontal FDI linkages. Regarding the impact of domestic institution and economic

growth, findings show that 10% improvement in home country institutional quality leads to 5.12% increase in economic growth. This partly corroborate Sarwar et al. (2021) result that institutional quality positively impact economic growth. Nevertheless, the direct impact of exchange rate on growth is positive. This also confirm Rapetti (2020), Jena & Sethi (2020) papers which found positive results in the impact of rear exchange rate on economic growth which facilitates economic development. However, this study finds that the interaction of institutional quality and outward FDI flow (INS×OFD) in home country is positive and indicates that 10% increase in the joint impact of institutional quality and outward FDI improves economic growth by 6.17%. This finding aligns with the results of Pooled OLS (7.23%), Fixed Effect (5.08%), and DGMM (6.62%) estimators This implies a complementary relationship that stimulate economic growth. This further shows that outward FDI and institutional quality are crucial determinants of economic growth. It suggests that improvement in home country institutional quality increases investment abroad flow with higher spillover which enhances economic growth.

Table 3: The nexus between outward foreign direct investment, Institutions and economic growth

	Pooled OLS		Fixed Effect		DGMM		SGMM	
Variables	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
EGW(-1)	0.574*** (3.276)	0.437*** (3.374)	0.253*** (3.363)	0.283** (2.170)	0.442*** (3.273)	0.367*** (3.006)	0.395*** (3.185)	0.291** (2.232)
OFD	1.006** (2.394)	0.635* (1.714)	0.439*** (2.603)	0.531** (1.975)	0.663*** (3.146)	0.602* (1.673)	0.593* (1.667)	0.583** (2.037)
INS	0.844** (2.075)	1.005* (1.663)	0.314** (2.093)	0.413 (1.238)	0.537 (1.004)	0.563** (2.334)	0.503* (1.884)	0.512*** (2.730)
HCD	0.762 (1.287)	0.463 (0.021)	0.674*** (3.007)	0.213* (1.728)	0.727* (1.677)	0.286 (1.534)	0.695 (0.527)	0.233* (1.696)
GCF	0.838* (0.673)	0.811** (0.123)	0.621 (1.374)	0.674*** (3.062)	0.887 (1.873)	0.746 (1.492)	0.684** (2.034)	0.688** (2.218)
GSZ	0.463*** (0.094)	0.473* (1.670)	-0.369* (-1.842)	-0.327** (-2.139)	0.404 (0.238)	-0.416 (-1.088)	-0.389* (-1.647)	-0.393 (-1.239)
EXR	0.623 (0.532)	0.648** (0.074)	0.327 (1.006)	0.611 (0.836)	0.578* (1.728)	0.656** (2.301)	0.498* (1.783)	0.634* (1.883)
INF	-0.632 (-0.065)	0.460 (0.468)	-0.231* (-1.704)	-0.249* (-1.658)	0.403** (1.983)	0.209** (2.041)	-0.395 (-1.534)	-0.21* (-1.703)
TOP	-0.675** (-2.113)	0.623* (1.863)	-0.072* (-1.834)	0.596 (0.008)	-0.463*** (-2.574)	0.611 (1.279)	-0.472 (-0.154)	0.609* (1.678)
INS×OFD		0.723* (1.681)		0.508** (2.047)		0.662** (2.142)		0.617 (1.294)
OFD×EXR		0.834* (1.702)		0.445* (1.688)		0.593 (1.007)		0.735* (1.651)
INS×HCD		0.453** (2.100)		0.232 (1.053)		0.394** (1.919)		0.684*** (2.563)
OFD×TOP		0.775* (1.904)		0.646** (2.402)		0.703 (0.473)		0.67** (2.445)
Constant	-3.103* (-1.730)	-2.43** (-2.230)	-4.501*** (-3.258)	-7.35*** (-3.943)	-4.012* (-1.762)	3.975** (2.365)	2.134* (1.685)	2.305*** (2.809)
# of Observation	2397	2397	2384	2384	2364	2364	2376	2376
# of Instruments	-	-	-	-	52	83	47	66
# of group	-	-	-	-	141	141	141	141
R-squared	0.648	0.396	0.735	0.508	-	-	-	-
A-B. (1) p-value	-	-	-	-	0.003	0.003	0.000	0.001
A-B. (2) p-value	-	-	-	-	0.397	0.205	0.614	0.442
Hansen p-value	-	-	-	-	0.216	0.503	0.476	0.109

Note:
1. EGW is lagged one year, t-statistics are in parentheses and all standard errors are two-step robust
2. Significance: * p<0.1; ** p<0.05; ***p<0.01

Source: Author's calculations

However, this study finds a complementary effect in the interaction of OFD×EXR which boost economic growth. This means that a 10% increase in the mutual effect of outward and domestic currency

improves economic growth for home country by 7.35%. For Pooled OLS, Fixed Effect, and DGMM estimators, the results show 8.34%, 4.45%, and 5.93% respectively and supports positive mutual relationship. An increase in home country currency, lowers the cost of investment abroad, which encourages higher oversea investment flow and in-turn bring about higher spillover that improves the economy. This combines effect positively impacts economic growth, i.e., increase in domestic exchange rate, increases outward FDI flow with higher spillover effects that enhances economic growth. This further implies that there may be higher flow of oversea investment into country where the exchange rate is weaker, given that the domestic currency can buy more investment. This finding also show that firms may engage in higher oversea investments if they anticipate future domestic currency appreciation. Investment abroad spillover facilitates domestic growth. However, exchange effects on FDI differs across country and region (Chakrabarti & Scholnick, 2002).

This study also included the interaction terms of institutional quality and human development (INS×HCD) to assess whether home country institution interacts with human capital development to improve economic growth. Our study finds a mutual complementary relationship in the interaction of INS×HCD. The effect is positive and statistically significant at 1% level significance for SGMM estimator and implies that a 10% positive change in INS×HCD interaction improves economic growth by 6.84%. This means finds that strong institutional quality linkages with healthy and well-educated population leads to an improved economic growth. Expectedly, our study also confirms that the direct impact of human capital development on economic growth is positive and statistically significant at 5% level of significance. This study employs composite index of education and health as measures of human development. Findings from numerous studies on the impact of trade openness on economic growth remain open and inconclusive, however, this study shows that the interaction of OFD×TOP is positive, statistically significant and enhances economic growth by 7.75%, 6.46%, 7.03% and 6.70% respectively for Pooled OLS, Fixed Effect, DGMM and SGMM estimators, due to 10% increase in trade openness. This reveals a complementary relationship that boost economic growth and implies that home country policies and regulations on trade openness facilitates outward FDI flow which bring about higher spillover effects that improves economic growth.

Conclusion

This study examined the nexus between outward FDI, institutional quality, and economic growth using a panel data of 141 countries for the period 2003 - 2019. The joints impact of these variables and other macroeconomic factors are examined using the system GMM, differenced GMM, fixed effect as well as pooled OLS estimators. Finding reveals positive impact in the interaction of institutional quality and outward FDI which brings about economic growth and development to home country and suggests that institutional quality complements outward FDI to promote economic growth. However, the mutual reinforcement of outward FDI and the national currency, strengthens home country economic growth. This suggests that there may be higher flow of oversea investments into countries where the exchange rate is weaker, given that the domestic currency can buy more investment. In addition, finding shows that firms may engage in higher oversea investments if they anticipate future currency appreciation. Furthermore, this study finds that the combine effect of institutional quality and human capital development facilitates economic growth and development. Finally, home country policies and regulations on trade openness facilitates outward FDI flow which rise to higher spillover effects that improves economic growth. However, due to country-specific policies, the effects of these interactions may slightly differ across region and globally. The implication of these findings are relevant to countries included in the study sample, and based on the findings, fast accelerated growth and development can be achieve if appropriate macroeconomic determinants are jointly considered when revamping the economy.

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