

Foreign Capital Flows and Economic Growth in Developing Countries - Examining the Role of Institutional Quality and Financial Development

Akshay Sakharkar^{1,*}, Sri Ram Padyala² and Ramesh Bommadevara³

¹Research Scholar, Goa Business School, Goa University, Taleigao Plateau, Goa, India, Assistant Professor, Department of Commerce, Govt. College of Arts & Commerce, Pernem Goa, India.

²Assistant Professor & Research Guide, Goa Business School, Goa University, Taleigao Plateau, Goa, India.

³Honorary Professor of Management, School of Business Studies, Central University of Kerala, (Former Professor & Dean of Commerce, Goa Business School Goa University Goa).

Abstract: The ever growing literature has extensively documented both empirically as well as theoretically the important role of foreign capital flows along with its inherent risk on the economy. However, despite all the benefits they offer capital flows also bring in together some prominent challenges for policy makers around the world. The present study using an annual dataset for 62 developing countries from 1995 to 2019 bring forward three key findings. First, there is a significant positive effect of foreign capital flows on economic growth in developing countries. Second, the positive significant coefficient of the interaction terms of institutional quality and financial development with capital flows indicates that, institutional quality and financial development play a crucial role in enhancing the effects of foreign capital flows on economic growth. Lastly, the result from the dynamic panel threshold suggest that FDI and aid flows generate positive impact on growth beyond the minimum stipulated threshold of institutional quality and financial development. Interestingly, remittances are found to have a positive impact on economic growth in countries with lower level of institutional quality and higher levels of financial development.

Keywords: Foreign aid; FDI; Remittances; Economic growth; Generalized method of moments Dynamic panel threshold model.

JEL classification: C33; D53; E43; O43; O47.

1. INTRODUCTION

A substantial boost for globalization around the world has led to a dramatic increase in the degree of integration in global financial markets. This has steered the world economies towards a greater exposure to foreign trade and investments. The recent decades have seen a tremendous rise in net capital flows surpassing the levels during the 1980s and 1990s. The composition of international capital flows to the developing countries have also become more diverse and substantial over the past decades. A major factor that contributed to this phenomenon can be traced back to the liberalization policies adopted by developing countries to attract foreign capital. Some authors view the increase in capital mobility across borders as a mixed blessing for developing nations. Although foreign capital is found boosting economic growth initially, the prolonged capital surge also carries inherent risk of increased exposure to external shocks. The surge and stops in capital flows can make the financial system more fragile and thus destabilize the economy. the financial crisis of 1990s and 2008 are crude examples for the developing nations.

Nevertheless, a substantial growth however is evident in the critical literature exploring the capital formation and growth dynamics in both developed and developing nations. Most countries, especially the developing nations have been targeting Foreign direct investments (FDI) over other capital flows. The fundamental reasons supporting FDI attractiveness such as transfer of state of the art technology, skills, research and development (R&D) and technical know-how to the host country makes FDIs more attractive form of investments. On the other hand, the growth of worker's remittances to the developing countries have also emerged as one of the substantial form of foreign capital. In 1980s the worker's remittances to the developing nations were only US\$47 billion, however over the decades we see a substantial rise in remittances to US\$431 billion in 2014. The large and constant stable flow of remittances to the developing nations has led to a vigorous debate on its growth effects in the economic literature. Foreign aid on the contrary has shown similar trend of increase from as much as US\$ 127.3 billion in 2010 to 145.7 billion in 2015, the magnitude of its size is however the least amongst the other type of capital flows to developing nations. The study strongly based on the notion of absorptive capacity and its relevance in foreign capital – growth relationship examines the vital and slightly less explored role of institutional quality and financial development as a mediator in foreign capital – growth relationship. Following the empirical literature, we re-examine the role in the

*Address correspondence to this author at the Assistant Professor, Department of Commerce, Govt. College of Arts & Commerce, Pernem Goa, India; E-mail: akshaysakharkar2018@gmail.com

context of developing economies. The study also seeks to develop conceptual arguments exploring the plausible channels through which institutional quality and financial development enhance economic growth.

2. LITERATURE REVIEW

The empirical literature on the growth effects of foreign capital flows have been growing over time, with recorded effects becoming more and more inconclusive. FDI inflows have multidimensional features which make them a preferable source of capital in comparison to other available sources of capital (Grossman & Helpman, 1991). Yet however, the role of FDI in the economic development process has for long been a topic of intense debate amongst the researchers. To date, the empirical evidence of the modelled effects of FDI on economic growth are not conclusive. While one stream of research indicates a positive impact of FDI on economic growth, another stream accounts for the otherwise. A third stream of research suggests that the effect of FDI on the host country's economy is dependent on the individual country's absorptive capacities in terms of its human capacity and the level of economic and financial development, infrastructure and other factors (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2010; Azman-Saini, Law, & Ahmad, 2010).

The positivists suggest that FDI tends to promote growth both in the direct as well as indirect forms. Empirical studies have argued that FDI in many host economies promotes domestic investments in the presence of complementary factors (Sylwester, 2005). The effects of FDI on the growth are also advocated in the endogenous growth theory which acknowledges knowledge and technology as key factors of production (Romer, 1994). Studies like (Choe, 2003; Chowdhury & Mavrotas, 2006), across economies have shown that FDI had a positive and significant long run effects on the growth of host countries. On the other hand studies carried out by (Atique, Ahmad, & Azhar, 2004; Baharumshah & Thanoon, 2006; Li & Liu, 2005), placed more emphasis on interlinkage factors that assisted FDI growth nexus and suggested that trade policy, economic openness, domestic financial markets and financial development, quality human capital and technology are key factors for FDI to drive growth. As proposed by (Moran, Graham, & Blomström, 2005) FDI flows can enhance productivity gains in the host country through transfers of technology, inducing skills acquisition, boosting competition and promoting export potential.

The debate on the role of remittances specially the growth promotional one proposed through theoretical and empirical studies by scholars remains highly inconclusive. One stem of literature argues that remittances have a positive impact on growth. It suggest that remittances help to reduce credit constraints on household receipts, and thus potentially stimulate entrepreneurial activity and private investment (Yang, 2008) on the contrary (Amuedo-Dorantes & Pozo, 2004) argue that large and sustained remittance inflows could lead to the so-called 'Dutch disease' problem. The Empirical findings of (Chami, Fullenkamp, & Jahjah, 2005) and (Gapen, Chami, Montiel, Barajas, & Fullenkamp, 2009), revealed a negative relationship between remittances and economic growth. (Meyer & Shera, 2017) in their study based on a set of six economies revealed that remittance has

a significant and positive impact on the per capita growth in the sample economies, (Catrinescu, Leon-Ledesma, Piracha, & Quillin, 2009) also depicts a positive picture, where remittance induced sufficient growth in the presence of good quality of institutions, governance and stable progressive political environment and policies. In addition, (Mundaca, 2009) also showed that remittance flows had a positive effects on countries equilibrium rates of growth. In contrast however, other studies such as that of (Chami et al., 2005) attested that the level of remittance inflows are statistically insignificant, while a change in the remittance to GDP negatively affects growth. The study of (Giuliano & Ruiz-Arranz, 2009) also revealed that remittance inflows do not influence growth positively.

The foreign aid by far is one the most important type of capital flow than any other type of private capital flow to any developing economy, this is because this flows are essentially targeted for development and hence initiating development remains the key motive of aid. Despite, the welfare orientation of this aid flows the developmental problems are not solved completely, moreover in some cases it has further aggravated the existing problems. The debate on foreign aid and its effects on economic growth have drawn great attention of many researchers and policy makers in the last decades. The dispute on aid for growth remains quite controversial and the findings remained mixed. While, a good quantum of studies has acknowledged the positive effects of foreign aid on growth, see (Asteriou, 2009; Burnside & Dollar, 2000; Karras, 2006; Minoiu & Reddy, 2010). On the contrary, (Rajan & Subramanian, 2008) and others found that aid does not have a positive effects on the developing countries economic growth.

3. METHODS

It is obvious from a thorough study of the literature that almost majority of the studies are being carried out assuming a linear form of association between foreign capital flows and economic growth using a static otherwise a dynamic panel methodology. However, the assumption of linearity relationship may not be reasonable as the relationship may differ across countries due to several factors. In literature several studies argue for the presence of threshold effects of certain variables on the FDI (Asongu & De Moor, 2017; Ibhagui, 2020; Kurul, 2017; Liu, Islam, Khan, Hossain, & Pervaiz, 2020). Recent studies have started to consider the interaction term particularly between FDI and other variables such as institutional quality (Aziz, 2018; Bommadevara & Sakharkar, 2021; Hayat, 2019; Huynh & Hoang, 2019; Sabir, Rafique, & Abbas, 2019). Nonetheless, this method is widely adopted, a major shortfall of a priori restriction is imposed in these estimations as the interaction term may increase or decrease monotonically with development in the quality of institutions, hence may not reasonably detect an equilibrium level of institutional quality that may need to be attained by countries.

Thus, in this study, an attempt is made to bridge the gap and contribute to the literature on effects of foreign capital flows on economic growth by examining the presence of nonlinear association and the impact of foreign capital flows on economic growth based on local conditions in the recipient

countries which are referred to as factors of absorptive capacity. The present study adopt the dynamic panel threshold model proposed by (Kremer, Bick, & Nautz, 2013) to examine the impact of different types of foreign capital flows on economic growth in emerging economies conditioned on local absorptive capacity in terms of financial development and institutional quality. A more detailed description of the econometrics of a dynamic panel threshold model is provided as follows.

$$Y_{it} = \mu_i + \beta'_1 z_{it} I(q_{it} \leq \gamma) + \delta_1 x_{it} I(q_{it} > \gamma) + \beta'_2 z_{it} I(q_{it} \leq \gamma) + \varepsilon_{it} \quad (1)$$

Where, the subscript 'i' = 1, 2, ..., N represents the country and 't' = 1, 2, ..., T is the time index. μ_i is the country specific fixed effect and $\varepsilon_{it} \stackrel{iid}{\sim} (0, \sigma^2)$. The indicator function $I(\cdot)$

is the regime defined threshold variable q_{it} and the threshold level γ . Z_{it} is the m-dimensional vector representing the explanatory variables which may also include the lagged value of Y_{it} and other endogenous regressors. The explanatory variables are divided into two categories exogenous regressors uncorrelated with error terms Z_{1it} and Z_{2it} which represents the vector of endogenous regressors correlated with the error terms.

Following (Kremer et al., 2013) the estimation runs into a series of steps, primarily the focus is on elimination of individual effects μ_i via a fixed-effects transformation using the forward orthogonal deviations transformation suggested by (Arellano & Bover, 1995). A distinct feature of forward orthogonal deviations transformation is that serial correlation of the transformed error terms is avoided. Instead of subtracting the previous observations it subtracts the average of all future available observations of a variable. The forward orthogonal deviations transformation is given by,

$$\varepsilon_{it}^* = \sqrt{\frac{T-t}{T-t+1}} \left[\varepsilon_{it} - \frac{1}{T-t} (\varepsilon_{i(t+1)} + \dots + \varepsilon_{iT}) \right] \quad (2)$$

Thus the forward orthogonal deviation transformation maintains the un-correlatedness of the error term, $Var(\varepsilon_i) = \sigma^2 I_T \rightarrow Var(\varepsilon_i^*) = \sigma^2 I_{T-1}$.

The forward orthogonal deviation transformation ensures that the estimation procedure developed by (Caner & Hansen, 2004) for a cross sectional model can be applied to dynamic model with endogenous regressors. In the first step a reduced form of regression is estimated for all the endogenous variables Z_{2it} as a function of the instruments X_{it} . In step two, the equation is estimated using the least square for a fixed threshold γ where endogenous variables Z_{2it} are replaced with the smallest sum of squared residuals. Once $\hat{\gamma}$ is determined the slope coefficients are estimated using the GMM.

Following the (Caner & Hansen, 2004; Hansen, 1999) the confidence interval of the estimated threshold is given by

$\{ \Gamma = \gamma: LR(\gamma) \leq C(\alpha) \}$ where, $C(\alpha)$ is the 95% percentile of the asymptotic distribution of the likelihood ratio statistics $LR(\gamma)$.

Specifically, based on the above discussion of the dynamic panel threshold model proposed by (Kremer et al., 2013) the following model for examining the foreign capital flows – growth nexus conditioned on financial development and institutional quality is proposed.

$$GDP_{it} = \mu_i + \beta'_1 \tilde{\pi}_{it} I(\tilde{\pi}_{it} \leq \gamma) + \delta_1 I(\tilde{\pi}_{it} \leq \gamma) + \beta'_2 \tilde{\pi}_{it} I(\tilde{\pi}_{it} > \gamma) + \emptyset z_{it} + \varepsilon_{it} \quad (3)$$

Where, financial development and institutional quality both are considered alternatively as threshold variables, and foreign capital flows are considered as regime dependent regressors. z_{it} Denotes the vector of partly endogenous variables, while initial income is considered as lagged endogenous variable $z_{it} = \text{Initial income}_{it}$ and z_{1it} contains other control variables. Following (Arellano & Bover, 1995) the lagged levels of endogenous variable are used as instruments.

The study is based on annual data from 1995-2019 comprising of 62 developing countries. the study uses institutional and governance variables such as the rule of law, control of corruption and political stability and absence of violence, regulatory quality, and government effectiveness from the Worldwide Governance Indicators (WGI). These indicators ranges from -2.5 to + 2.5 where -2.5 reflect weak institutions and +2.5 suggest strong institutional infrastructure. This study employed the principal component analysis (PCA) method to generate a composite index of institutional quality comprising of all the six WGI indices, see (Kaufmann, Kraay, & Mastruzzi, 2011). We performed the Kaiser–Meyer–Olin (KMO) test which gives a KMO value of 0.84 and an eigenvalue of 4.27, which represents a total of 72% of approximate variation of the WGI indices. Secondly, the study also adopt the multidimensional indicator of financial development developed by (Sviryzdenka, 2016) to capture its effects on foreign capital – growth nexus. The variables used in our study with sources and summary of descriptive statistics are presented in Table A1 and Table A2 in appendix.

4. RESULTS AND DISCUSSION

The empirical results for the dynamic panel data models estimated using the systems GMM approach are presented in Table 1. The model specifications (1), (2) and (3) captures the effect of three key capital flows namely FDI, remittances and foreign aid individually while the specification (4) capture the simultaneous effect. Additionally, we also assess the role of financial development and institutions in specification (5) and (6) respectively. Specification (1) – (3) reports the findings on the impact of foreign capital on economic growth for the sample comprising of developing countries from 1995-2019. The positive and highly significant coefficients of (0.1232) for FDI, (0.0216) for remittances and (0.1303) for foreign aid is a strong indication that the inflow of these flows significantly enhances the economic growth in host country. We test our robustness by including all the

three capital flows in one system of equation, interestingly we find no ambiguities in our results, all the types of capital flows impact economic growth in similar manner together.

Our empirical model also seeks to capture the role of institutions and level of financial development on economic growth in developing countries. The findings show that both institutional quality index and the index of financial development have a positive and significant coefficient value of (0.2491) and (2.2792) across the specifications respectively. Moreover, the impact of financial development is more strong and significant as compared to the quality of institutions. A look into the magnitude of the impact suggest that both financial development and institutional quality are highly related to economic growth. The findings are in line with the pre-existing literature (Catrinescu et al., 2009; Redek & Sušjan, 2016)

The rest of the coefficient of the control variables used in the study are very much as expected. The lagged value of the coefficient of real GDP per capital growth which is our dependent variables is found to be positive and significant which suggest that economies that grow faster in the preceding years tend to grow somewhat in a similar manner in the following year as well. The coefficient of trade, natural rent and savings are all positive and significant while inflation is found to be negatively associated with economic growth. The results from the explanatory variables in our model are all according to the expectations following the existing literature.

The results of the regression estimations following the equation (4) and (5) are presented in Table 2 below. Initially, we examine the role of institutions and financial development in FDI-growth nexus in our sample of developing countries by including an interaction term between FDI and institutions (FDI x Inst.) and FDI and financial development (FDI x FD) as additional explanatory variables. The coefficient of our interest here is γ , where $\gamma = \frac{dY}{dFDI}$. The estimated coefficient

of FDI inflows interaction with institutional quality and financial development is (0.0304) and (0.5599) respectively. The positive and highly significant coefficient value suggests that in the presence of robust institutions and financial development, FDI generates positive synergy effect on economic growth in developing countries. We also examine the role of institutions and financial development in remittance – growth and aid – growth association, the empirical results suggest that both remittances and foreign aid interaction with the level of institutional quality and financial development in the host country positively affects economic growth.

Table 3 presents the estimates from the dynamic panel threshold model specified in Equation_ based on the (Kremer et al., 2013) study. We model our estimates by measuring institutional quality and financial development as the threshold variables while, the foreign capital flows representing FDI, remittances and aid are modelled as regime dependent variables. In essence we try to assess if higher and lower regimes of institutional quality and financial development make the effect of foreign capital on economic growth vary. The first row in Table 3 display the estimated threshold

of institutional quality and financial development corresponding to 95% confidence intervals.

The slope parameters estimates, β_1 and β_2 denotes the regime dependent marginal effects of foreign capital flows on economic growth. The additional covariates are presented in the bottom section of Table 3. Although a plethora of cross country studies examining the role of foreign capital on economic growth, empirical evidences by far remains inconclusive. Moreover, most studies are restricted to examining the direct or indirect effect via interactions, our study however extends the scope by examining the presence of threshold alike the recent studies of (An & Yeh, 2020; Bangake & Eggoh, 2019; Slesman, Baharumshah, & Wohar, 2015; Yiew & Lau, 2018).

The first two columns of Table 3 show the results for FDI – growth nexus and the role of institutional quality and financial development. The point estimate of the threshold value of (-1.39) and (0.16) represents the estimated threshold of institutional quality and financial development indices for the selected sample of developing countries. With respect to the regime dependent marginal effect, FDI is found to have a negative significant impact of (-0.4437) on economic growth in the lower regime while a positive and significant impact of (0.5112) in the higher regime above the estimated threshold. Interestingly, unlike the case of institutions, FDI is found to have a significant positive effect on economic growth of (0.2478) in the lower regime of financial development and a cumulative effect of (0.5082) in the higher regime. All the other policy covariates are found to have a plausible significant effect as expected. The empirical results indicate that FDI does not foster economic growth in countries with lower levels of institutional quality while countries above the threshold with strong and robust institutions experience a FDI led growth through the institutional channel. On the other hand, we observe that countries both having low and high level of financial development experience FDI induced economic growth however the magnitude of the effect is found to be much stronger in the case of countries with higher level of financial development. The results in essence suggest robust institutions and well-functioning financial markets and institutions are essential thresholds that drive FDI flows as well as foster economic growth in the developing countries.

The results in column (3) and (4) of Table 3 exhibits the role of institutional quality and financial development in remittances-growth nexus. The estimates of (-0.7059) and (0.1107) represents the thresholds for institutional quality and financial development over the remittance – growth association for the selected developing countries. The regimes specific marginal effect of remittances on economic growth is reported to be (0.7676) in the lower regime while (-2.4133) in the upper regime. This results suggest that remittances are favourable for growth in countries with lower institutional quality only while, on the contrary countries with higher levels of institutional quality do not benefit from remittances induced economic growth. Although institutional quality is an important determinant of remittance flows studies such as (Francois, Ahmad, Keinsley, & Nti-Addae, 2022) suggest that country heterogeneity with respect to consumption and investment across countries can plausibly be re-

sponsible for such varied effects, the study of (Abdih, Chami, Dagher, & Montiel, 2012) also suggest that higher ratio of remittance receipts erodes the institutions particularly government effectiveness in the home country.

On the contrary, remittances are found to have significant positive effects of (1.1049) points in upper regime while a negative insignificant effect of (-0.1266) is reported in the lower regime. Specifically, remittances contribute to economic growth in countries with well-functioning financial sector comprising of strong financial markets and institutions. Furthermore, remittances create progressive synergies based on its application. The receipts of remittances when channel for productive use in an effective manner can prompt economic growth positively (Bangake & Eggoh, 2019). The impact of aid on economic growth particularly in the developing countries have been emphasized over the past decades, the literature however remains highly inconclusive. Majority of the study proposing the negative effects or at the best insignificant effect stems for the assumption that aid growth association is uniform and linear across countries (Dalgaard & Hansen, 2001; Papanek, 1972).

Since the study of (Dalgaard & Hansen, 2001) the focus on absorptive capacity on the aid – growth nexus has led to many recent studies reassessing the association. One main

channel that emerged is institutional channel (Bräutigam & Knack, 2004; Feeny & de Silva, 2012). The analysis in column (5) and (6) reported in Table 3 focuses to examine the role of institutional and financial development channel on the widely debated aid-growth nexus in developing countries. At an estimated level of threshold, aid is found to be highly productive in fostering economic growth in the upper regimes of institutional quality and financial development. We find a highly positive and significant coefficient of (0.4721) and (0.7166) for foreign aids marginal effect on economic growth dependent on the level of institutional quality and financial development in the host country.

The empirical results using the dynamic panel threshold estimation are found to be consistent and robust throughout. We test the reliability by performing the Sargans test for validity of instruments an insignificant p-value confirms that the instruments used are valid. Similarly, the empirics in Table 1 and Table 2 are also found to be stable and robust with the p-values reported for AR (1) and AR (2) for the first and second-order auto-correlated disturbances being insignificant in the first difference equations throughout specifications. The p-value for the Hansen J-test and Sargans test is also found to be insignificant as expected and thus confirms instrument validity.

Table 1. Capital Flows and Economic Growth - Baseline Regression Results.

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
Gdpg (-1)	0.1721*** (0.0203)	0.1999*** (0.0198)	0.1881*** (0.0181)	0.1714*** (0.0232)	0.1617*** (0.0224)	0.1617*** (0.0227)
FDI	0.1232*** (0.0153)			0.0914*** (0.0196)	0.0943*** (0.0204)	0.1007*** (0.0193)
Remit.		0.0216* (0.0142)		0.0399*** (0.0152)	0.0117 (0.0142)	0.0320** (0.0150)
Aid			0.1303*** (0.0462)	0.0905** (0.0394)	0.0900** (0.0372)	0.0993*** (0.0348)
Inf	0.0055*** (0.0011)	0.0041** (0.0018)	0.0028 (0.0021)	0.0050*** (0.0014)	0.0038*** (0.0010)	0.0041*** (0.0011)
Gexp	-0.0413** (0.0171)	-0.0702*** (0.0172)	-0.1027*** (0.0180)	-0.0522*** (0.0186)	-0.0583*** (0.0176)	-0.0476** (0.0200)
Saving	-0.0262*** (0.0081)	-0.0422*** (0.0067)	-0.0091 (0.0130)	0.0142 (0.0128)	0.0027 (0.0121)	0.0132 (0.0121)
Gfc	0.0400** (0.0160)	0.0778*** (0.0177)	0.0871*** (0.0184)	0.0733*** (0.0141)	0.0771*** (0.0159)	0.0757*** (0.0144)
Nrent	0.0166 (0.0127)	0.0268* (0.0147)	-0.0141 (0.0208)	-0.0247 (0.0191)	-0.0142 (0.0158)	-0.0272 (0.0191)

Trade	-0.0120**	-0.0039	-0.0058	-0.0070	-0.0083	-0.0069
	(0.0050)	(0.0051)	(0.0053)	(0.0050)	(0.0052)	(0.0046)
HC	0.0694	0.0072	0.1194**	0.0183	0.0153	-0.0072
	(0.0576)	(0.0414)	(0.0543)	(0.0670)	(0.0630)	(0.0658)
Debt	-0.0172***	-0.0196***	-0.0147***	-0.0129***	-0.0125***	-0.0128***
	(0.0025)	(0.0029)	(0.0030)	(0.0024)	(0.0028)	(0.0024)
Inst.				0.2491*		0.3914*
				(0.4087)		(0.4284)
FD					2.2792**	2.4147**
					(1.0939)	(1.1948)
Constant	4.3921***	4.2605***	2.9215***	2.6064***	2.7363***	2.1853***
	(0.4733)	(0.5182)	(0.6323)	(0.7276)	(0.6445)	(0.7711)
Observations	1,488	1,488	1,488	1,488	1,488	1,488
No. of Countries	62	62	62	62	62	62
No. of Instruments	31	31	31	34	34	35
AR(1)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AR(2)	0.8300	0.9240	0.9370	0.7720	0.7620	0.7540
Sargan test	0.4840	0.9550	0.5690	0.0890	0.1080	0.1240
Hansen test	0.2370	0.1100	0.2750	0.3400	0.4860	0.4610

Notes: GMM estimation of the dynamic panel data models: dependent variable: real GDP growth (1995–2019).

***, **, * Indicates a significance at a 1%, 5% and 10% confidence interval. The reported standard errors in parenthesis based on (Windmeijer, 2005) procedure. The values reported for AR (1) and AR (2) are the p-values for the first and second-order auto-correlated disturbances in the first difference equations. The value for Hansen J-test and Sargans test reports the p-value for the null hypothesis of instrument validity.

Source: Authors computations.

Table 2. Capital Flows and Economic Growth - Role of Institutions and Financial Development.

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
Gdpg (-1)	0.2012***	0.2010***	0.2029***	0.2036***	0.1920***	0.1892***
	(0.0087)	(0.0082)	(0.0094)	(0.0086)	(0.0070)	(0.0067)
FDI	0.0766***	0.0221				
	(0.0213)	(0.0199)				
Remit.			-0.0111***	-0.0859***		
			(0.0038)	(0.0109)		
Aid					0.2348***	0.0524***
					(0.0487)	(0.0147)
Inst.	0.0665		-0.0001		-1.4901***	
	(0.3071)		(0.2138)		(0.4614)	
FDI x Inst.	0.0304					

	(0.0283)					
Remit. x Inst.			0.0304***			
			(0.0116)			
Aid x Inst.					0.1403***	
					(0.0504)	
FD		1.1770		0.2677		2.3671***
		(0.9390)		(0.9138)		(0.7484)
FDI x FD		0.5599***				
		(0.1337)				
Remit. x FD				0.3638***		
				(0.0639)		
Aid x FD						0.3332***
						(0.0947)
Inf	0.0047***	0.0040***	0.0034***	0.0038***	0.0027***	0.0033***
	(0.0003)	(0.0005)	(0.0006)	(0.0007)	(0.0006)	(0.0004)
Gexp	-0.0416***	-0.0289***	-0.0769***	-0.0687***	-0.0913***	-0.0574***
	(0.0081)	(0.0070)	(0.0092)	(0.0054)	(0.0120)	(0.0076)
Saving	-0.0187***	-0.0178***	-0.0453***	-0.0477***	-0.0019	-0.0133***
	(0.0040)	(0.0037)	(0.0031)	(0.0020)	(0.0054)	(0.0045)
Gfc	0.0546***	0.0398***	0.0842***	0.0817***	0.0912***	0.0732***
	(0.0069)	(0.0074)	(0.0082)	(0.0075)	(0.0047)	(0.0057)
Nrent	-0.0013	0.0044	0.0185**	0.0173***	-0.0215**	0.0036
	(0.0095)	(0.0059)	(0.0090)	(0.0064)	(0.0107)	(0.0072)
Trade	-0.0023	-0.0082***	-0.0048*	-0.0057**	-0.0056*	-0.0089***
	(0.0024)	(0.0023)	(0.0028)	(0.0025)	(0.0030)	(0.0028)
HC	-0.0078	-0.0317	0.0596***	0.0315	0.1372***	0.0596**
	(0.0238)	(0.0280)	(0.0218)	(0.0273)	(0.0298)	(0.0287)
Debt	-0.0144***	-0.0135***	-0.0157***	-0.0162***	-0.0117***	-0.0147***
	(0.0010)	(0.0010)	(0.0012)	(0.0013)	(0.0013)	(0.0010)
Constant	3.7180***	4.0669***	4.1599***	4.3608***	1.2768**	2.9202***
	(0.3075)	(0.2499)	(0.2901)	(0.2380)	(0.5044)	(0.2362)
Observations	1,488	1,488	1,488	1,488	1,488	1,488
No. of Countries	62	62	62	62	62	62
No. of Instruments	59	59	59	59	58	59
AR(1)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AR(2)	0.9420	0.7880	0.9050	0.9000	0.9420	0.9940

Sargan test	0.2000	0.5780	0.6100	0.6760	0.2230	0.3120
Hansen test	0.4130	0.7380	0.2620	0.3540	0.2270	0.2840

Notes: GMM estimation of the dynamic panel data models: dependent variable: real GDP growth (1995–2019). ***, **, * Indicates a significance at a 1%, 5% and 10% confidence interval. The reported standard errors in parenthesis based on (Windmeijer, 2005) procedure. The values reported for AR (1) and AR (2) are the p-values for the first and second-order auto-correlated disturbances in the first difference equations. The value for Hansen J-test and Sargans test reports the p-value for the null hypothesis of instrument validity.

Source: Authors computations.

Table 3. Dynamic Threshold Panel Regression Estimation: Foreign Capital – Growth Nexus.

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
	FDI and Institutional Quality	FDI and Financial Development	Remittance and Institutional Quality	Remittance and Financial Development	Aid and Institutional Quality	Aid and Financial Development
Estimated threshold (γ)	-1.3880	0.1603	-0.7059	0.1107	-1.3117	0.0621
95% Confidence Interval	[-1.4620 ~ -1.2647]	[0.0355 ~ 0.3091]	[-1.4620 ~ 0.0875]	[0.0355 ~ 0.3589]	[-1.3880 ~ -1.1280]	[0.0615 ~ 0.0708]
Impact of capital flow						
β_1	-0.4437*** (0.1526)	0.2478*** (0.0524)	0.7676* (0.4000)	-0.1266 (0.3176)	-0.1086 (0.1131)	-0.1644* (0.0983)
β_2	0.5112*** (0.0851)	0.5083*** (0.1399)	-2.4133*** (0.5358)	1.1049*** (0.3559)	0.4721*** (0.0945)	0.7166*** (0.1131)
Impact of covariates						
Gdpg (-1)	-0.4539*** (0.0234)	-0.4956*** (0.0233)	-0.5389*** (0.0190)	-0.4674*** (0.0253)	-0.4294*** (0.0218)	-0.4690*** (0.0155)
Inf	0.0059 (0.0078)	0.0158** (0.0078)	-0.0045 (0.0118)	0.0157** (0.0079)	0.0090 (0.0082)	0.0124* (0.0075)
Gexp	0.4622*** (0.1714)	0.1081 (0.2192)	0.4697 (0.3456)	0.5077* (0.2932)	0.2478 (0.1658)	0.2048 (0.2204)
Saving	0.1043** (0.0418)	-0.0046 (0.0488)	0.1331* (0.0709)	0.1028* (0.0556)	0.0331 (0.0401)	0.1006** (0.0414)
Gfc	-0.7261*** (0.0920)	-0.5986*** (0.1014)	-0.5981*** (0.1207)	-0.4381*** (0.1134)	-0.4274*** (0.0812)	-0.1254 (0.0841)
Nrent	0.2040*** (0.0496)	0.0910 (0.0633)	0.3174*** (0.0892)	0.0583 (0.0722)	0.1346** (0.0630)	-0.0786 (0.0548)
Trade	0.1172*** (0.0226)	0.1131*** (0.0276)	0.1159*** (0.0328)	0.1806*** (0.0274)	0.1268*** (0.0325)	0.1346*** (0.0266)
HC	-1.3069*** (0.4048)	-1.0557** (0.4910)	-1.8286*** (0.6528)	-4.1985*** (0.5683)	-0.6029* (0.3439)	-1.7486*** (0.5290)
Debt	0.0011 (0.0137)	-0.0438*** (0.0140)	-0.0214 (0.0187)	-0.0370** (0.0166)	-0.0129 (0.0089)	-0.0408*** (0.0093)

Constant	10.3581***	16.2793***	18.3641***	15.7433***	2.6073	3.3999
	(2.3829)	(2.5663)	(5.4140)	(3.2239)	(2.8346)	(3.8864)
Obs.	1,488	1,488	1,488	1,488	1,488	1,488
No. of countries	62	62	62	62	62	62
No. of Instruments	47	47	47	47	47	47
Sargan test χ^2	38.1792	35.2360	41.6258	40.2273	40.8280	45.2415
p-value	0.3270	0.4570	0.2048	0.2498	0.2293	0.1151

Notes: Each column shows the coefficient from a separate regression and standard errors are in parentheses. Institutional Quality index and Financial development index are used as the threshold variables. The point estimates of the thresholds and the corresponding 95% confidence intervals (C.I.) are reported in the first two rows respectively. The regime dependent marginal effects of foreign capital flows (FDI, Remit and Aid) on economic growth are denoted by β_1 and β_2 . ***, **, * indicate significance at the 1%, 5% and 10% level, respectively.

Source: Authors computations.

5. CONCLUSION

This paper investigates the role of institutional quality and financial development in enhancing the growth effects of foreign capital on economic growth in developing countries. The study hypothesized that a strong and robust institutional infrastructure and a well-functioning financial market leading to financial development are important preconditions for foreign capital to have a positive effect on growth. The Empirical results reveal that there is a significant positive effect of foreign capital flows namely foreign direct investments (FDI), remittances (Remit.) and foreign aid (Aid) on economic growth in developing countries. Secondly, the positive significant coefficient of the interaction terms of institutional quality and financial development with foreign capital flows suggest that both, institutional quality and financial development play a crucial role in enhancing the effects of foreign capital flows on economic growth. Lastly, the result from the dynamic panel threshold method suggest that FDI and aid flows generate positive impact on growth beyond the minimum stipulated threshold of institutional quality and financial development. Interestingly, remittances are found to have a positive impact on economic growth in countries

with lower level of institutional quality and higher levels of financial development. The key finding pin points to the fact that foreign capital – growth association is contingent on the threshold variables of institutional quality and financial development used in the analysis. Thus, in order for policies to play a significant role in sustaining economic growth, developing countries should focus on establishing strong and robust institutions that seeks to protect the interest of investors and maintain higher degree of law and order. In addition, the role of financial development is also highlighted to be a significant factor fostering economic growth. Countries with higher levels of financial development with well-functioning financial markets and institutions trade higher levels of economic growth. Sound policies directed towards productive channelizing of foreign capital especially aid and remittances can create positive synergies for enhanced growth effects in developing countries. The policy implications are exclusively more relevant for developing countries with low levels of per capita GDP, institutional quality and financial development. These countries can achieve faster growth and prosperity by improving the quality of their institutions and achieving financial development.

APPENDIX

Table A1. Descriptive Statistics.

	Mean	Std. Dev.	Min.	Max.	Obs.
GDPg	4.41097	4.19782	-36.392	35.2241	1,542
Fdi	3.59838	6.5953	-37.155	103.337	1,535
Rem	5.76866	8.61111	0.00018	108.403	1,346
Aid	7.599	8.40627	-0.2813	81.7917	1,545
Inf	18.1814	150.924	-21.165	4800.53	1,544
Saving	12.9806	18.025	-141.97	64.9274	1,491
Gexp	13.4001	6.9916	0.91124	73.8764	1,465
Gfc	22.2084	9.06145	-2.4244	81.0517	1,458
Nrent	9.00356	9.58643	0.02649	58.6502	1,544
Trade	69.9086	33.9841	14.7725	311.354	1,520

HC	5.24636	2.56262	0.69	11.5	1,476
Debt	57.5951	46.9385	6.7	593.737	1,480
FD	0.15291	0.08955	0.01875	0.48775	1,483
IQ	-0.6592	0.46835	-2.1003	0.59369	1,488

Table A2. Variable Description and Data Source.

Abbreviations	Variable Definition	Sources
GDPg	The variable measures economic growth rate of a country it is measured as the growth rate in Real GDP per capita (US\$)	The World Bank, World Development Indicators, database, and World Economic Outlook (WEO) data IMF.
Fdi	The variable represents Foreign direct investment, net inflow measured as a percentage of GDP.	The World Bank, World Development Indicators, database, and World Economic Outlook (WEO) data IMF.
Rem	The variable represents Personal remittances, received measured as a percentage of GDP.	The World Bank, World Development Indicators, database, and World Economic Outlook (WEO) data IMF.
Aid	The variable represents Net official development assistance, received measured as a percentage of GDP.	The World Bank, World Development Indicators, database, and World Economic Outlook (WEO) data IMF.
Inf	The variable represents Inflation, GDP deflator (annual percentage)	The World Bank, World Development Indicators, database, and World Economic Outlook (WEO) data IMF.
Gexp	The variable represents General government final consumption expenditure measured as a percentage of GDP.	The World Bank, World Development Indicators, database, and World Economic Outlook (WEO) data IMF.
Gfc	The variable represents Gross fixed capital formation measured as a percentage of GDP. (percentage of GDP)	The World Bank, World Development Indicators, database, and World Economic Outlook (WEO) data IMF.
Nrent	The variable represents total natural resources rents measured as a percentage of GDP.	The World Bank, World Development Indicators, database
Trade	Trade openness is measured as a ratio of exports of goods and services to GDP	The World Bank, World Development Indicators, database, and World Economic Outlook (WEO) data IMF.
HC	Human Capital is measured as Average total years of schooling for adult population (years)	(Barro & Lee, 2013)
Debt	Debt represents Total Central government debt, measured as a percentage of GDP.	The World Bank, World Development Indicators, database, and World Economic Outlook (WEO) data IMF.
FD	Represents overall Financial development index	IMF, IFS (Sviryzdenka, 2016)
IQ	Institutional quality index developed from six components of institutional quality (control of corruption, government effectiveness, regulatory quality, political stability, rule of law and voice and accountability)	World Governance Indicator (WGI-WB)

Table A3. Sample Characteristic (Average of Key Indicators).

Country	FDI	Remit.	Aid	FD	Inst.	Country	FDI	Remit.	Aid	FD	Inst.
1.Algeria	0.99	1.14	0.28	0.13	-0.86	32.Lao PDR	4.72	0.61	8.50	0.13	-0.87
2.Angola	5.16	0.01	2.04	0.14	-1.15	33.Lesotho	3.55	41.91	7.38	0.14	-0.16
3.Bangladesh	0.76	6.40	1.65	0.20	-0.81	34.Liberia	20.03	7.54	22.65	0.14	-1.10
4.Belize	6.09	4.31	2.10	0.20	-0.02	35.Madagascar	3.86	1.82	8.29	0.09	-0.47
5.Benin	0.74	2.17	6.43	0.12	-0.19	36.Mali	2.57	4.42	11.13	0.11	-0.47
6.Bhutan	0.94	0.55	10.05	0.16	0.23	37.Mauritania	6.00	0.14	8.57	0.10	-0.56
7.Bolivia	4.22	3.23	5.00	0.18	-0.45	38.Mongolia	8.77	2.99	8.03	0.22	-0.02
8.Burkina Faso	1.02	2.05	10.86	0.11	-0.36	39.Morocco	2.49	6.49	1.38	0.29	-0.24
9.Burundi	0.46	0.74	22.17	0.10	-1.24	40.Mozambique	12.03	1.10	17.40	0.11	-0.42

10.Cambodia	8.16	3.56	7.04	0.10	-0.78	41.Nepal	0.24	15.21	5.29	0.15	-0.69
11.Cameroon	1.54	0.54	3.83	0.09	-0.91	42.Nicaragua	5.62	8.23	8.73	0.12	-0.53
12.Central African Republic	1.25	0.00	14.96	0.06	-1.29	43.Niger	3.48	1.34	10.21	0.10	-0.63
13.Chad	6.29	0.00	7.81	0.08	-1.21	44.Nigeria	1.44	3.85	0.78	0.20	-1.06
14.Comoros	0.46	7.07	6.68	0.04	-0.86	45.Pakistan	1.17	4.54	1.22	0.27	-0.94
15.Congo, Dem. Rep.	3.46	1.14	10.53	0.04	-1.62	46.Philippines	1.71	9.83	0.43	0.34	-0.33
16.Congo, Rep.	10.03	0.23	4.24	0.08	-1.08	47.Rwanda	1.65	1.11	17.90	0.09	-0.56
17.Cote d'Ivoire	1.90	1.03	3.99	0.13	-0.85	48.Senegal	1.93	7.06	6.49	0.10	-0.15
18.Egypt, Arab Rep.	2.56	5.48	1.29	0.31	-0.59	49.Sierra Leone	5.82	1.57	19.11	0.06	-0.84
19.El Salvador	2.44	17.40	1.45	0.18	-0.21	50.Solomon Islands	3.98	1.21	20.17	0.09	-0.36
20.Gambia, The	3.41	6.01	8.21	0.09	-0.44	51.Sri Lanka	1.28	7.64	1.47	0.24	-0.27
21.Ghana	4.50	2.40	6.81	0.11	-0.02	52.Sudan	3.39	3.01	3.03	0.08	-1.49
22.Guinea	3.21	0.74	6.44	0.08	-1.05	53.Tajikistan	3.85	21.74	7.58	0.07	-1.17
23.Guinea-Bissau	1.63	4.82	20.46	0.06	-1.06	54.Tanzania	3.06	0.41	8.63	0.10	-0.43
24.Haiti	0.68	12.11	8.14	0.10	-1.13	55.Togo	2.92	6.51	6.53	0.12	-0.81
25.Honduras	4.88	13.66	4.27	0.17	-0.56	56.Tunisia	2.75	4.35	1.33	0.19	-0.14
26.India	1.43	2.98	0.22	0.40	-0.22	57.Uganda	3.35	3.31	9.99	0.09	-0.60
27.Indonesia	1.23	0.92	0.39	0.32	-0.52	58.Ukraine	3.22	4.30	0.86	0.18	-0.61
28.Iran, Islamic Rep.	0.72	0.46	0.07	0.30	-0.90	59.Uzbekistan	1.56	3.95	0.95	0.17	-1.23
29.Kenya	0.97	2.25	4.10	0.15	-0.65	60.Vanuatu	6.77	4.41	13.45	0.15	0.16
30.Kiribati	0.41	5.50	27.20	0.09	0.12	61.Vietnam	5.94	4.83	2.77	0.35	-0.47
31.Kyrgyz Republic	5.06	15.99	9.07	0.09	-0.72	62.Zambia	5.15	0.26	11.60	0.10	-0.36

AUTHORS CONTRIBUTION

Conceptualization: Akshay Sakharkar

Data curation: Akshay Sakharkar

Formal analysis: Akshay Sakharkar

Investigation: Akshay Sakharkar, Sri Ram Padyala, Ramesh Bommadevara

Methodology: Akshay Sakharkar, Sri Ram Padyala, Ramesh Bommadevara

Project administration: Akshay Sakharkar, Sri Ram Padyala, Ramesh Bommadevara

Software: Akshay Sakharkar, Sri Ram Padyala, Ramesh Bommadevara

Visualization: Akshay Sakharkar, Sri Ram Padyala, Ramesh Bommadevara

Writing – original draft: Akshay Sakharkar, Sri Ram Padyala, Ramesh Bommadevara

REFERENCES

Abdih, Y., Chami, R., Dagher, J., & Montiel, P. (2012). Remittances and Institutions: Are Remittances a Curse? *World Development*, 40(4), 657–666. <https://doi.org/10.1016/J.WORLDDEV.2011.09.014>

- Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2010). Does foreign direct investment promote growth? Exploring the role of financial markets on linkages. *Journal of Development Economics*. <https://doi.org/10.1016/j.jdeveco.2009.09.004>
- Amuedo-Dorantes, C., & Pozo, S. (2004). Workers' Remittances and the Real Exchange Rate: A Paradox of Gifts. *World Development*. <https://doi.org/10.1016/j.worlddev.2004.02.004>
- An, T.-H. T., & Yeh, K.-C. (2020). Growth effect of foreign direct investment and financial development: new insights from a threshold approach. *Journal of Economics and Development*, 23(2), 144–162. <https://doi.org/10.1108/JED-08-2020-0108>
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*. [https://doi.org/10.1016/0304-4076\(94\)01642-D](https://doi.org/10.1016/0304-4076(94)01642-D)
- Asongu, S. A., & De Moor, L. (2017). Financial Globalisation Dynamic Thresholds for Financial Development: Evidence from Africa. *European Journal of Development Research*. <https://doi.org/10.1057/ejdr.2016.10>
- Asteriou, D. (2009). Foreign aid and economic growth: New evidence from a panel data approach for five South Asian countries. *Journal of Policy Modeling*. <https://doi.org/10.1016/j.jpolmod.2008.04.012>
- Atique, Z., Ahmad, M. H., & Azhar, U. (2004). The impact of FDI on economic growth under foreign trade regimes: A case study of Pakistan. *Pakistan Development Review*. <https://doi.org/10.30541/v43i4iipp.707-718>
- Aziz, O. G. (2018). Institutional quality and FDI inflows in Arab economies. *Finance Research Letters*. <https://doi.org/10.1016/j.frl.2017.10.026>
- Azman-Saini, W. N. W., Law, S. H., & Ahmad, A. H. (2010). FDI and economic growth: New evidence on the role of financial markets. *Economics Letters*. <https://doi.org/10.1016/j.econlet.2010.01.027>

- Baharumshah, A. Z., & Thanoon, M. A. M. (2006). Foreign capital flows and economic growth in East Asian countries. *China Economic Review*, 17(1), 70–83. <https://doi.org/10.1016/j.chieco.2005.09.001>
- Bangake, C., & Eggoh, J. (2019). Financial Development Thresholds and the Remittances-Growth Nexus. *Journal of Quantitative Economics*. <https://doi.org/10.1007/s40953-019-00188-6>
- Barro, R. J., & Lee, J. W. (2013). A new data set of educational attainment in the world, 1950-2010. *Journal of Development Economics*. <https://doi.org/10.1016/j.jdeveco.2012.10.001>
- Bommadevara, R., & Sakharkar, A. (2021). Do Good Institutions and Economic Uncertainty Matter to Foreign Direct Investment? *Asian Economic and Financial Review*, 11(6), 471–487. Retrieved from <https://ideas.repec.org/a/asi/aeafjr/2021p471-487.html>
- Bräutigam, D. A., & Knack, S. (2004). Foreign aid, institutions, and governance in sub-Saharan Africa. *Economic Development and Cultural Change*, 52(2), 255–285. <https://doi.org/10.1086/380592>
- Burnside, C., & Dollar, D. (2000). Aid, policies, and growth. *American Economic Review*. <https://doi.org/10.1257/aer.90.4.847>
- Caner, M., & Hansen, B. E. (2004). Instrumental variable estimation of a threshold model. *Econometric Theory*. <https://doi.org/10.1017/S0266466604205011>
- Catrinescu, N., Leon-Ledesma, M., Piracha, M., & Quillin, B. (2009). Remittances, Institutions, and Economic Growth. *World Development*. <https://doi.org/10.1016/j.worlddev.2008.02.004>
- Chami, R., Fullenkamp, C., & Jahjah, S. (2005). Are immigrant remittance flows a source of capital for development? *IMF Staff Papers*. <https://doi.org/10.5089/9781451859638.001>
- Choe, J. I. (2003). Do foreign direct investment and gross domestic investment promote economic growth? *Review of Development Economics*, 7(1), 44–57. <https://doi.org/10.1111/1467-9361.00174>
- Chowdhury, A., & Mavrotas, G. (2006). FDI and growth: What causes what? *World Economy*. <https://doi.org/10.1111/j.1467-9701.2006.00755.x>
- Dalgaard, C. J., & Hansen, H. (2001). On aid, growth and good policies. *Journal of Development Studies*. <https://doi.org/10.1080/713601081>
- Feeny, S., & de Silva, A. (2012). Measuring absorptive capacity constraints to foreign aid. *Economic Modelling*, 29(3), 725–733. <https://doi.org/10.1016/j.econmod.2012.01.013>
- Francois, J. N., Ahmad, N., Keinsley, A., & Nti-Addae, A. (2022). Heterogeneity in the long-run remittance-output relationship: Theory and new evidence. *Economic Modelling*, 110, 105793. <https://doi.org/10.1016/j.econmod.2022.105793>
- Gapen, M. T., Chami, R., Montiel, P., Barajas, A., & Fullenkamp, C. (2009). Do Workers' Remittances Promote Economic Growth? *IMF Working Papers*. <https://doi.org/10.5089/9781451873009.001>
- Giuliano, P., & Ruiz-Arranz, M. (2009). Remittances, financial development, and growth. *Journal of Development Economics*. <https://doi.org/10.1016/j.jdeveco.2008.10.005>
- Grossman, G. M., & Helpman, E. (1991). Trade, knowledge spillovers, and growth. *European Economic Review*. [https://doi.org/10.1016/0014-2921\(91\)90153-A](https://doi.org/10.1016/0014-2921(91)90153-A)
- Hansen, B. E. (1999). Threshold effects in non-dynamic panels: Estimation, testing, and inference. *Journal of Econometrics*. [https://doi.org/10.1016/S0304-4076\(99\)00025-1](https://doi.org/10.1016/S0304-4076(99)00025-1)
- Hayat, A. (2019). Foreign direct investments, institutional quality, and economic growth. *Journal of International Trade and Economic Development*. <https://doi.org/10.1080/09638199.2018.1564064>
- Huynh, C. M., & Hoang, H. H. (2019). Foreign direct investment and air pollution in Asian countries: does institutional quality matter? *Applied Economics Letters*. <https://doi.org/10.1080/13504851.2018.1563668>
- Ibhagui, O. (2020). How does foreign direct investment affect growth in sub-Saharan Africa? New evidence from threshold analysis. *Journal of Economic Studies*. <https://doi.org/10.1108/JES-06-2018-0198>
- Karras, G. (2006). Foreign aid and long-run economic growth: Empirical evidence for a panel of developing countries. *Journal of International Development*. <https://doi.org/10.1002/jid.1187>
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues. *Hague Journal on the Rule of Law*. <https://doi.org/10.1017/S1876404511200046>
- Kremer, S., Bick, A., & Nautz, D. (2013). Inflation and growth: New evidence from a dynamic panel threshold analysis. *Empirical Economics*. <https://doi.org/10.1007/s00181-012-0553-9>
- Kurul, Z. (2017). Nonlinear relationship between institutional factors and FDI flows: Dynamic panel threshold analysis. *International Review of Economics and Finance*, 48, 148–160. <https://doi.org/10.1016/j.iref.2016.12.002>
- Li, X., & Liu, X. (2005). Foreign Direct Investment and economic growth: An increasingly endogenous relationship. *World Development*, 33(3), 393–407. <https://doi.org/10.1016/j.worlddev.2004.11.001>
- Liu, H., Islam, M. A., Khan, M. A., Hossain, M. I., & Pervaiz, K. (2020). Does financial deepening attract foreign direct investment? Fresh evidence from panel threshold analysis. *Research in International Business and Finance*. <https://doi.org/10.1016/j.ribaf.2020.101198>
- Meyer, D., & Shera, A. (2017). The impact of remittances on economic growth: An econometric model. *Economía*. <https://doi.org/10.1016/j.econ.2016.06.001>
- Minoiu, C., & Reddy, S. G. (2010). Development aid and economic growth: A positive long-run relation. *Quarterly Review of Economics and Finance*. <https://doi.org/10.1016/j.qref.2009.10.004>
- Mundaca, B. G. (2009). Remittances, financial market development, and economic growth: The case of Latin America and the Caribbean. *Review of Development Economics*, 13(2), 288–303. <https://doi.org/10.1111/j.1467-9361.2008.00487.x>
- Papanek, G. F. (1972). The Effect of Aid and Other Resource Transfers on Savings and Growth in Less Developed Countries. *The Economic Journal*. <https://doi.org/10.2307/2230259>
- Rajan, R. G., & Subramanian, A. (2008). Aid and growth: What does the cross-country evidence really show? *Review of Economics and Statistics*. <https://doi.org/10.1162/rest.90.4.643>
- Redek, T., & Sušjan, A. (2016). The Impact of Institutions on Economic Growth: The Case of Transition Economies. <http://Dx.Doi.Org/10.1080/00213624.2005.11506864>, 39(4), 995–1027. <https://doi.org/10.1080/00213624.2005.11506864>
- Romer, P. M. (1994). The Origins of Endogenous Growth. *Journal of Economic Perspectives*. <https://doi.org/10.1257/jep.8.1.3>
- Sabir, S., Rafique, A., & Abbas, K. (2019). Institutions and FDI: evidence from developed and developing countries. *Financial Innovation*. <https://doi.org/10.1186/s40854-019-0123-7>
- Slesman, L., Baharumshah, A. Z., & Wohar, M. E. (2015). Capital Inflows and Economic Growth: Does the Role of Institutions Matter? *International Journal of Finance & Economics*, 20(3), 253–275. <https://doi.org/10.1002/IJFE.1514>
- Svirydzhenka, K. (2016). Introducing a New Broad-based Index of Financial Development. *IMF Working Papers*, 16(05), 1. <https://doi.org/10.5089/9781513583709.001>
- Sylwester, K. (2005). Foreign direct investment, growth and income inequality in less developed countries. *International Review of Applied Economics*. <https://doi.org/10.1080/02692170500119748>
- Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics*. <https://doi.org/10.1016/j.jeconom.2004.02.005>
- Yang, D. (2008). International migration, remittances and household investment: Evidence from Philippine migrants' exchange rate shocks. *Economic Journal*. <https://doi.org/10.1111/j.1468-0297.2008.02134.x>
- Yiew, T. H., & Lau, E. (2018). Does foreign aid contribute to or impeded economic growth? *Journal of International Studies*. <https://doi.org/10.14254/2071-8330.2018/11-3/2>