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Role of institutions on the relationship between growth and capital inflow

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Abstract
Previous studies indicate that economic growth influences foreign capital inflow in countries with low levels of institutional quality. However, these studies are confronted with modelling and/or inferential problems. Consequently, this study investigates the impact of institutional quality on the economic growth-foreign capital inflow nexus using the asymptotic efficient bias-corrected least square dummy variable methods on data from 163 countries for the period 2002-2015. The results show that economic growth, real income per capita, and foreign reserves impact foreign capital inflow. The study finds the effect of economic growth on capital inflow to be conditional on institutional quality. Specifically, the results show that economic growth does not influence foreign capital inflow in countries with low levels of institutional quality but has a significant positive effect on capital inflow in countries with moderate and high levels of institutional quality. Therefore, countries should enhance their institutional framework by establishing a reliable structure for economic policies and enforcement.

Keywords: Capital inflow, Economic growth, Institutions, Interaction model, Lucas paradox

1. Introduction

The importance of capital flows to the economic development process has been emphasized. Zehri et al. (2024); Appiah et al. (2023); Duodu & Baidoo (2022); Yang & Ni (2022); and Shen, Lee, & Lee (2010) argue that foreign capital flows promote efficient capital allocation, risk sharing, and economic development, amongst other benefits. Likewise, foreign capital inflow is a major source of funds for sustainable economic development for most developing countries (Liyanage, 2016). Therefore, understanding determinants of foreign capital flows should be important to policymakers.

The last few decades have witnessed significant cross-border capital flows (Lane and Milessi-Ferretti, 2007; Bathia et al., 2023). Despite the increase in capital flows, capital accumulation in developing countries is insufficient to meet their development aspirations. These countries, relative to developed nations, are rich in labour resources, scarce in capital resources, and have volatile macroeconomic conditions. These may incentivise capital flows to these countries. Contrary to theory, poor developing countries (although argued to benefit most from financial globalisation) received a very small amount of foreign capital inflows, whilst the greatest share goes

to the industrialised nations (Gourinchas & Jeanne, 2013).

Neoclassical theory suggests that, given differences in capital per worker and free and competitive trade in capital goods among countries, foreign capital will flow more to poor, developing, capital-deficient nations, subject to the equalisation of returns on capital with capital-rich nations. Contrarily, empirical evidence and statistics find that more foreign capital flows to capital-rich developed nations, a term referred to as the Lucas paradox. The Lucas paradox, more generally, is "a central question for economic development" and is closely tied to the failure of financial globalisation to produce the expected benefits (Lucas, 1990). Based on actual evidence, institutional quality emerged as the most compelling theoretical explanation for the Lucas Paradox. The log of beginning income per capita loses all statistical and economic explanatory value once this basic feature is incorporated into the econometric model (Azemar & Desbordes, 2013). Lucas (1990) argues that differences in institutional quality among countries may in fact affect the cost and returns of capital and therefore explains why capital does not flow to capital-deficient poor countries.

Although past studies investigate the relationship between institutional quality and foreign capital inflows, there is no consensus. For instance, Pinar and Volkan (2018) and Kunel and Yelta (2017) report that institutional differences may explain capital flows among countries, while Azemar and Desbordes (2013) find a weak relationship between capital flows and institutions. Again, these studies consider institutions as an important factor in themselves, affecting capital flows. Contrarily, institutions should be viewed in relation to other macroeconomic fundamentals affecting capital inflows. Therefore, modelling such a relationship may require interacting institutional factors with macroeconomic variables to examine how, say, economic growth attracts foreign capital given the level of institutional quality.

This study investigates the relationship between economic growth, institutions, and capital inflows. This study contributes to literature on economic growth and capital inflows. It provides insight into Lucas's puzzle and explains why poor developing countries are not preferred destinations for foreign capital inflow, although macroeconomic conditions and theory suggest otherwise. Importantly, some past studies that take into account the role of institutions on capital flows may have wrongly specified their models (the multiplicative interaction between institution and macroeconomic fundamentals as argued by Lucas, 1990) or, at best, inferred errors (interpreting marginal effect). Brambor, Clark, and Golder (2006) argue that most empirical studies are subject to model misspecification and/or inferential errors. This study addresses these problems.

Empirical debates on the determinants of capital flows have largely focused on push vs. pull factors. Push factors are external conditions that affect the supply of global liquidity, while pull factors are internal/domestic demand-side conditions that attract foreign capital by influencing domestic risk and return on capital (Hannan, 2018). Unlike the pull factors, domestic policymakers have little or no sway over the push factors, which are completely at the mercy of global macroeconomic and earning conditions or worse policy actions of other countries (Culhan, 2006; Fratzscher, 2012). Pull factors include time-varying cyclical variables like economic growth and interest rates, and slow-moving structural factors like trade openness, foreign reserves, exchange rate, institutions, capital account

liberalisation, and financial development, among others (Hannan, 2018).

Evidence from past studies is split as to the relative importance of push vs. pull factors to foreign capital flows. For instance, Liyanage (2016), De-Vita and Kyaw (2008), and Arshad et al. (2012), among others, maintain that foreign capital flows are largely driven by pull factors. On the contrary, Baek (2006), Ghost et al. (2014), and Ahmed and Zlate (2014) argue that global/external factors primarily determine capital flows to emerging markets.

On the other hand, the effect/importance of pull vs. push factors may depend on the nature/type of capital flows. For instance, Koepke (2015) argues that external factors are most important for portfolio inflows while domestic macroeconomic factors matter for FDI, portfolio, and banking flows. Byrne and Fiess (2015) contend that long-term bond yields and commodity prices in industrialised economies are important determinants of global capital flows, whereas domestic policy conditions drive a country's capital inflows.

Fratzscher (2012) reports that push variables determine capital flows during crises, whilst pull factors attract capital flows post-crisis. Also, Yang et al. (2013) argue that FDI flows are sensitive to economic expectation, whereas portfolio flows respond to exchange rate expectation. De-Vita and Kyaw (2008) submit that productivity shock drives FDI inflow but reduces portfolio flows. Likewise, Brana and Lahet (2010) and Abdullahi, Abu-Mansor, and Puah (2010) have argued that capital flows to emerging countries due to changes in domestic factors are important for stable development, whilst capital flows owing to changes in external factors are highly volatile and susceptible to economic and financial fragility.

Other empirical literature is specific on the macroeconomic, policy, and external determinants of foreign capital inflows. There is consensus on the positive impact of economic growth on foreign capital inflow. For instance, Ahmed and Zlate (2014) report that, in a survey of forty studies, economic growth has a positive impact on all forms of foreign capital inflows while risk indicators undermine banking inflow. Alan and Quazi (2010) report that political instability and risk factors deter foreign capital inflow and may even lead to capital flight.

Blonigen and Piger (2014) argue that FDI inflow is affected by the level of a country's infrastructure, whilst Choi et al. (2014) maintain that internet use reduces information asymmetry among countries and therefore increases portfolio inflow. Also, Brafu-Insaidoo and Biekpe (2014) argue that financial sector liberalisation determines capital flows. Reinhardt, Ricci, and Tressel (2013) submit that financial liberalisation is important to capital inflow, subject to a country's level of development and nature capital flow (long- or medium-term vs. short-term), respectively.

Several empirical literatures of recent times suggest that the reasons behind poor capital and financial flow to the developing countries may be that of differences in institutional quality; this may explain the Lucas paradox. For example, Pinar & Volkan (2018), Lothian (2005), Kunel & Yelta (2017), and Githaiga & Kilong'i (2023) all argued that differences in institutions significantly explain capital flow among countries. Others, like Okada (2013) and Shell and Zheng (2015), contend that the impact of institutions on capital flows is asymmetrical, conditional on capital account openness and globalisation, respectively. On the contrary, Azemar and Desbordes (2013) find that the impact of institutions on capital inflow is weak.

Previous studies have highlighted several variables as reasons why foreign capital

flows mainly to rich, developed countries, which include moral hazard and lack of collateral (Gertler & Rogoff, 1990; Joffe, 2017), information asymmetry (Portes & Ray, 2005). In addition, Reinhardt and Rogoff (2004) and Martin and Rey (2004) have identified high default rates among developing countries, low transaction costs, market size, and more diversification opportunities in the industrialised countries among the reasons why capital flows more to developed nations.

This study finds that economic growth has a significant positive impact on foreign capital inflow. The impact of economic growth is, however, conditional on the level of institutional quality. The rest of the work is organised as follows: Section 2 is the methodology. Section 3 discusses the results while section 4 concludes.

2. Methodology

Following stylized fact (Akhtaruzzaman, Hajzler, and Owen, 2017; Arias et al., 2013; Brafu-Insaido and Biekpe, 2013; Vo, 2018; Brana and Lahet, 2010; Ohno, 2010), we present our empirical model as thus below.

$$CI_{it} = \beta_1 CI_{it-1} + \beta_2 gdpg_{it} + \beta_3 inst_{it} + \beta_4 lrgdpc_{it} + \beta_5 kao_{it} + \beta_6 lres_{it} + \beta_7 lexr_{it} + \varepsilon_{it} \quad (1)$$

Where *CI* represents capital inflow, *gdpg* denotes economic growth, *inst* signifies institutional quality, *kao* symbolizes financial openness, *lrgdpc* represents the log per capita real GDP, *lres* denotes the log of foreign exchange reserves and *lexr* is the log of exchange rate. We argue that institutions affect capital inflow only to the extent that they impact costs and returns on capital. Therefore, the impact of institutions should be studied hand in hand with the macroeconomic condition (in this case, economic growth) affecting returns on capital. Hence, we interact economic growth with institutional quality and represent our model as thus below:

$$CI_{it} = \beta_1 CI_{it-1} + \beta_2 gdpg_{it} + \beta_3 inst_{it} + \beta_4 gdpg * inst_{it} + \beta_4 lrgdpc_{it} + \beta_5 kao_{it} + \beta_6 lres_{it} + \beta_7 lexr_{it} + \varepsilon_{it}$$

In Equation 2, $gdpg * inst$ represents the interaction between institutional quality and economic growth, while other variables are as defined in Equation 1.

Brambor, Clark, and Golder (2006) have argued that, although conditional hypotheses are common and their meaning better captured through multiplicative interaction, most of the models are flawed and prone to inferential errors. To correctly interpret the interaction model, the partial change in economic growth must be viewed hand in hand with the level of institutional quality. In other words, we must compute the marginal effect as given below:

$$\frac{dy}{dx} = \beta_2 + \beta_4 inst$$

Where y denotes capital in flow (CI) and x represents economic growth (GDPG).

The study will adopt the bias-corrected least square dummy variable (LSDVC) method to estimate the model. The justification for the choice of this method owes to its superiority over other standard panel models. For example, Balestra and Nerlove (1966), Nerlove (1971), and Madalla (1971) maintain that the asymptotic efficiency of panel models with infinite individual units but finite time observations is in doubt. Also, Nankervis and Savin (1987) argue that dynamic models with finite time observations yield poor asymptotic estimates and may be subject to type one error. Likewise, Nickel (1981) argues that the asymptotic estimates of the GMM are biased due to finite time observations, whilst increasing the time observations may result in the problem of instrumental variables proliferation (Meschi and Vivarelli, 2009). The bias-corrected least

square dummy variable method, however, corrects for these problems by allowing for relatively infinite individual and time observations while inheriting the strength of the GMM estimator.

Dang et al. (2015), through Monte Carlo simulations, confirm the superiority of this method by having smaller variance relative to other dynamic estimators, including the asymptotically efficient GMM estimators. Also, Kiviet (1995), Judson and Owen (1999), Bun and Kiviet (2003) and Abdulwakil et al. (2020) have shown that the bias-corrected least square dummy variable method uses a bootstrapping procedure that is found to give more accurate parameter estimates relative to the standard dynamic panel models.

The paper uses data from 2002–2015 for a sample of 163 countries. The list of countries is attached as appendix 1. Data on economic growth and real GDP per capita are collected from the World Bank Development Indicators (WDI) database. Data on institutions is extracted from the Worldwide Governance Indicators (WGI) Database. Data on foreign capital inflows, foreign reserves, and exchange rates are collected from Lane and Milessi-Ferretti (2017).

3. Results and Discussion

This section presents the empirical results on the impact of institutions on the growth–capital flow nexus. The estimation begins with a descriptive and correlation analysis. The results of descriptive statistics and the correlations matrix are presented in Tables 1 and 2, while Table 3 presents the results for the impact of institutions on the capital inflow growth nexus using the bias-corrected least square dummy variable method.

The result of the descriptive statistics shows significant dispersion in the data. For instance, we see substantial variation in capital inflow, growth rate of GDP, real GDP per capita, institutional quality, and foreign reserves. The difference between the minimum and maximum values is significantly large. The minimum foreign capital inflow is about $62.48 million (Micronesia), while the maximum value is about $31 trillion (USA). In addition, the growth rate of GDP (proxy for economic growth) shows significant dispersion. The minimum growth rate of GDP stands at negative 64.08 percent (recession) to a substantial growth rate of 123.14 percent (all for Libya). Incidentally, most developing countries show the largest growth volatility. Likewise, real GDP per capita, capital account openness, institutions, and reserves show large differences between minimum and maximum values.

Table 1: Descriptive statistics

Variables	Observation	Mean	Std. deviation	Minimum	Maximum
Capital inflow	2,267	608168.8	2343716	62.48	3.16e+07
GDP growth	2,267	4.012187	5.419036	-62.08	123.14
Real GDPC	2,267	12815.61	17086.34	221.1	123.14
Institutions	2,267	49.8058	26.26899	3.24	99.76
Financial openness	2,267	.4078571	1.605795	-1.9	2.37
Foreign reserves	2,267	45525.06	216858.5	0.11	3859168
Exchange rate	2,267	2975610	1.41e+08	0.06	6.72e+09

The result of the correlation matrix (table 2) shows that there is significant positive correlation between foreign capital inflow and the explanatory variables (except for exchange rate). The result shows that reserves, capital account openness, institutions, and real GDP per capita have positive correlation with capital inflow while economic growth rate has negative correlation with foreign capital inflow.

Table 2: Correlation matrix

	Capital inflows	GDP growth	Real GDPC	Institutions	Financial Openness	Reserves	Exchange rate
Capital	1.0000						
GDPG	-0.0906**	1.0000					
GDPC	0.4284**	-0.1343**	1.0000				
Institutions	0.3191**	-0.1806**	0.7356**	1.0000			
Openness	0.2623**	-0.0984**	0.5189**	0.5442**	1.0000		
Reserves	0.1607**	0.0309	0.0980**	0.0480*	0.0084	1.0000	
Exchange	-0.0054	-0.0844**	-0.0149	-0.0359	-0.0303	-0.0044	1.0000

Note: ** and * denotes significance at 1 percent and 5 percent respectively.

The results of model estimation are presented in Table 3, using the dynamic bias-corrected dummy variable methods. The models are estimated based on the Blundell and Bond, Arellano and Bond, and Anderson and Hsiao approaches of the LSDVC. The results in Columns 1 and 2 are estimated using the Blundell and Bond method; Columns 3 and 4 are initialised using the Arellano and Bond method, while Columns 5 and 6 use the Anderson and Hsiao method.

The results in columns 1, 3, and 5 (non-interaction models) show that economic growth, per capita real GDP, and reserves have a significant positive impact on foreign capital inflow. On the other hand, institutions, capital account openness, and exchange rates do not have a significant effect on capital inflow. The results of the interaction model (columns 2, 4, and 6) reveal that real GDP per capita, reserves, and the interaction term affect foreign capital inflow positively and significantly while the effect of capital account openness and exchange rate on capital inflow is found to be insignificant.

Table 3: Results of the impact of institution on economic growth-foreign capital inflow nexus

	1	2	3	4	5	6
L.lcf	0.884***	0.892***	0.874***	0.881***	0.878***	0.886***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Economic growth	0.002**	-0.001	0.002**	-0.001	0.001	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Institutions	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Real GDPC	0.153***	0.134***	0.171***	0.155***	0.177***	0.160***
	(0.039)	(0.039)	(0.041)	(0.041)	(0.040)	(0.040)
Financial openness	0.011	0.009	0.009	0.008	0.009	0.008
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Foreign reserves	0.016***	0.017***	0.017***	0.018***	0.017***	0.018***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Exchange rate	-0.001	-0.003	-0.001	-0.002	-0.000	-0.002
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
GDOG*Institutions		0.000***		0.000***		0.000***
		(0.000)		(0.000)		(0.000)
Low		-0.001		-0.001		-0.001
Medium						
High		0.005***		0.004***		0.004***
		0.01***		0.009***		0.009***
Observations	2098	2098	2098	2098	2098	2098
N_g	162	162	162	162	162	162

Column 1&2 are initialized base on the Blundell and Bond, column 3&4 are initialized using the Arellano and Bond, while column 5&6 are initialized base Anderson Hsiao Standard errors in parentheses. ** $p < 0.05$, *** $p < 0.01$.

The finding of significant positive impact of economic growth (growth rate of GDP) on foreign capital inflows is in line with theory and empirical arguments (Ahmed & Zlate, 2014). Theory suggests that the growth rate of GDP is a major determinant of capital inflows. This is the foundation of Lucas Puzzle. There is an expectation that countries with higher GDP growth should attract more foreign capital inflow. However, statistics revealed otherwise. The reality is that low-income/developing countries with greater growth rates attract less capital inflows, while the high-income/industrialised nations with small growth rates attract the greatest share of foreign capital inflows.

The insignificant effect of institutional quality on capital inflow supports the hypothesis that institutions in themselves are not an important predictor of foreign capital inflow as established by Azemar and Desbordes (2013). This study argues that foreign investors look at the macroeconomic fundamentals first. If macroeconomic conditions are attractive to foreign investors, then they take into account how institutions may influence the returns and safety of their investment. Otherwise, no rational foreign or local investor will invest if the macroeconomic variables are not favourable, regardless of the quality of institutions.

The results from the interaction models validate Lucas's assertion. It provides a clear explanation as to why capital does not flow to developing countries with higher GDP growth rates as argued by theory. Although it is argued that institutions are not a major determinant of foreign capital inflow, it, however, reinforces the economic growth impact on capital inflow. The results based on the marginal effect computation reveal that GDP growth rate does not affect capital inflow at a low level of institutional quality. However, the study finds that economic growth impacts foreign capital inflow positively and significantly at median and high levels of institutional quality. Further, the impact of GDP growth on capital inflow increases with improvements in institutional quality and is greatest at a high level of institution. Figure 1-3 below validates this argument.

The simple explanation may be that, although economic growth is a primary driver of foreign capital inflow, institutional quality, such as control of corruption, political stability, and others, may affect cost and returns on investment. This explains the reason why high-income countries receive large and disproportionate foreign capital inflows contrary to theory. Most of the industrial nations, albeit with low growth rates, have a high level of institutional quality and therefore attract most foreign capital.

The finding of a positive impact of per capita real GDP on foreign capital inflow is expected. Economic development is to be an important determinant of FDI inflow and therefore capital inflows (Ito, Jongwanich, and Terada-Hagiwara, 2009). Investors may be interested in the purchasing power of an economy, as the ability of individuals to afford goods (measured by the real income) is a real incentive for foreign investment. Yang et al. (2013) have argued that economic expectation is a major driver of FDI inflow. Furthermore, statistics of foreign capital inflow support this claim, where the largest share of foreign capital inflows goes to high-income countries.

Again, the positive nexus between reserves and capital inflows meets apriori expectation. Reserves reinforce investors' confidence and are less likely to worry about the safety of their investment when repatriating their investment. This is true in the case of most developing countries and particularly in the case of Nigeria in 2018, where some international airlines find it difficult to repatriate their money. Excess reserves act to

absorb foreign exchange shocks. Ghosh, Ostry, and Qureshi (2016) report that countries with sufficient exchange rate The finding of insignificant impact of exchange rate on foreign capital inflow is contrary to Yang et al. (2013), who report that portfolio inflows respond to exchange rate volatility. Nonetheless, the result may not be out of place. First, the proxy for foreign capital inflow used in this study comprises both FDI and portfolio liabilities. The greater component of capital inflow used in this study is FDI. Ahmed and Zlate (2014) have argued that FDI is more sensitive to productivity shock. Second, as argued above, countries with sufficient reserves and sound macroeconomic institutions are able to buffers through sufficient foreign reserves are less prone to capital inflow shocks.

overcome the problem of exchange rate variability.

Likewise, the insignificant relationship between capital account openness and foreign capital inflow is contrary to Brafu-Insaidoo and Biekpe (2014). However, Reinhardt, Ricci, and Tressel (2013) and Romulo, Raul, and Felipe (1997) contend that the positive impact of financial liberalisation on capital inflow is conditional on the level of economic development and the nature of capital inflow. Ghosh, Ostry, and Qureshi (2016) equally report that countries with capital controls are less likely to experience capital inflow volatility.

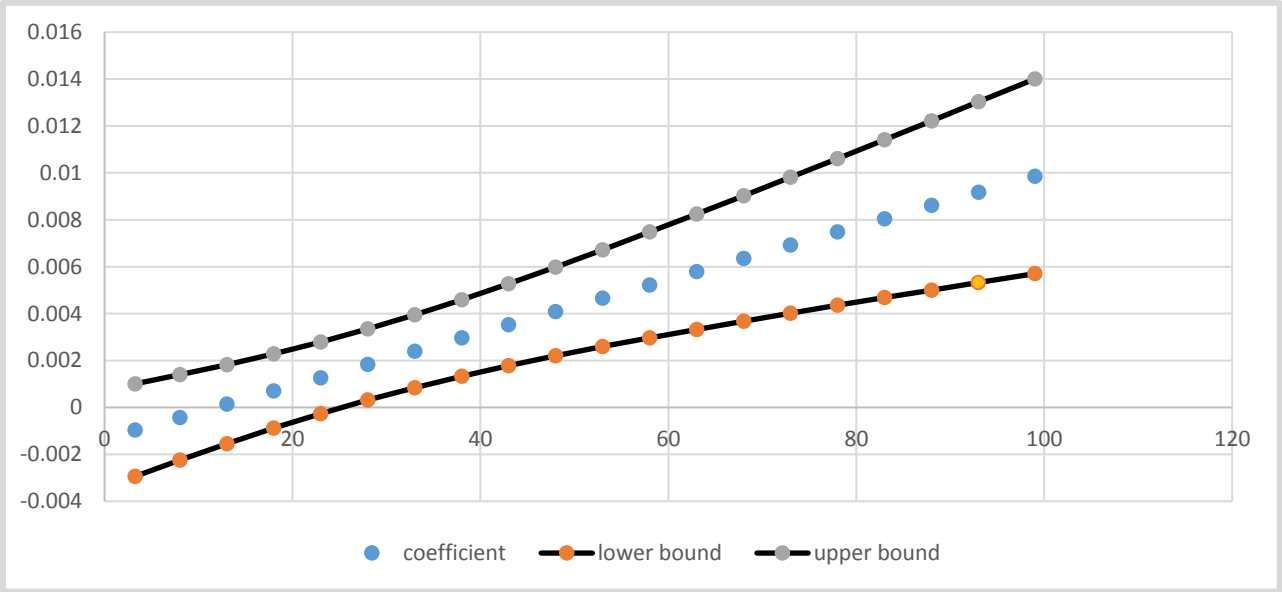

Figure 1: The impact of institution on economic growth-foreign capital inflows, based LSDVC initialized on Blundell and Bond.

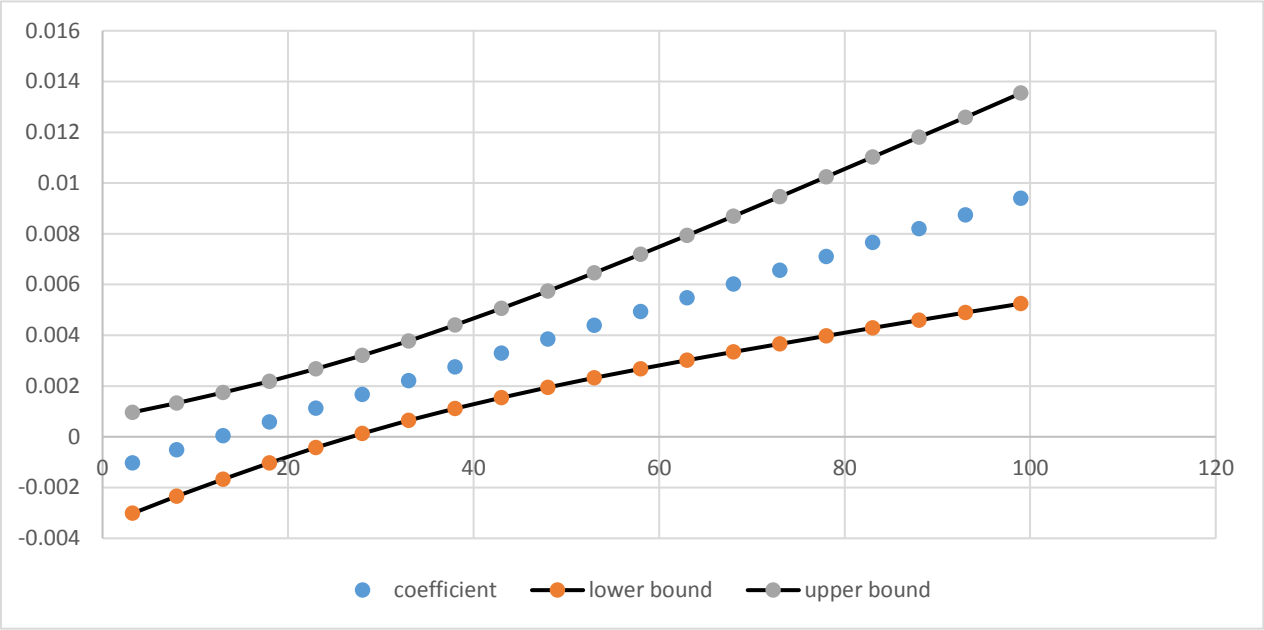

Figure 2: The impact of institution on economic growth-foreign capital inflows, based LSDVC initialized using the Arellano and Bond.

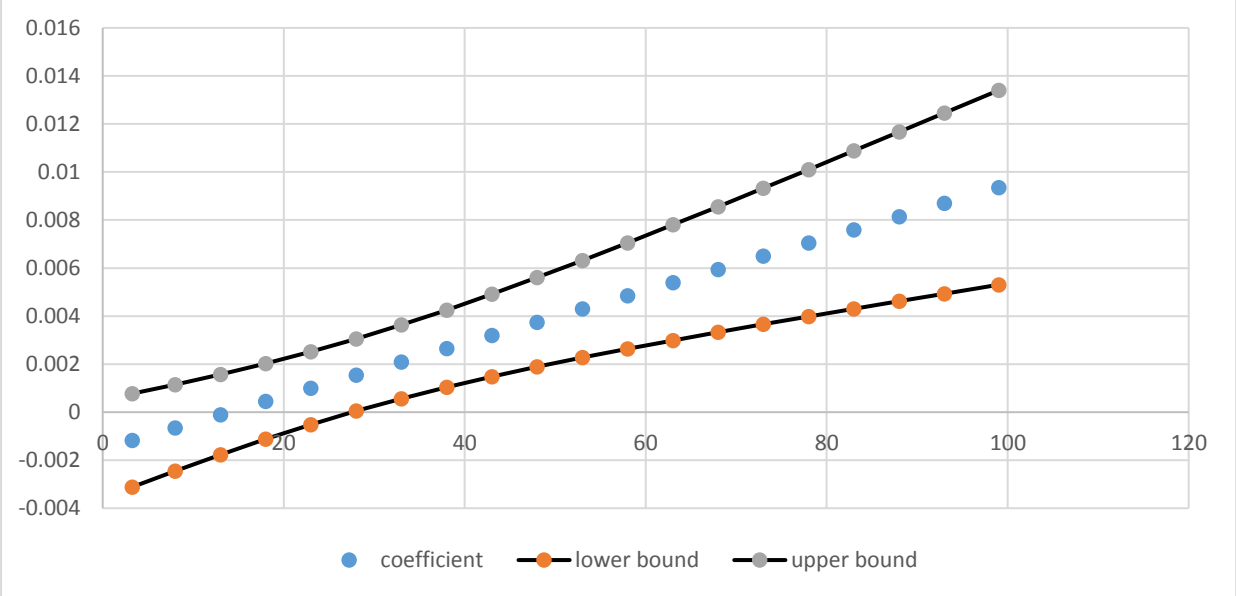

Figure 2: The impact of institution on economic growth-foreign capital inflows, based LSDVC initialized using the Anderson and Hsiao.

Sensitivity analysis

We perform robustness tests to ascertain the consistency of the results. First, the study re-estimates the models using other proxies to represent institutional quality. Institutional quality is replaced with control of corruption and political stability, and the bias-corrected least square dummy variable methods are applied. The results are presented in tables 4 and 5. Second, the dynamic system GMM is applied to the dataset using the aggregate index of institutional quality. The results are presented in Table 6. The results in table 4-6 below are consistent with those in table 3 above.

Table 4: Results of the impact of institution on economic growth-foreign capital inflow nexus, using corruption control as proxy for institutional quality and applying the bias-corrected least square dummy variable methods

	1	2	3	4	5	6
L.lcf	0.886***	0.893***	0.876***	0.882***	0.879***	0.886***
	(0.011)	(0.011)	(0.011)	(0.012)	(0.012)	(0.012)
Economic growth	0.002**	-0.000	0.002**	-0.001	0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Corruption control	0.000	-0.000	0.000	-0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Real GDPC	0.141***	0.123***	0.159***	0.144***	0.167***	0.151***
	(0.038)	(0.038)	(0.039)	(0.040)	(0.039)	(0.039)
Financial openness	0.010	0.009	0.008	0.007	0.008	0.007
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Foreign reserves	0.016***	0.017***	0.017***	0.018***	0.017***	0.018***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Exchange rate	-0.001	-0.002	-0.001	-0.002	-0.000	-0.001
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
GDPG*C.Control		0.000***		0.000***		0.000***
		(0.000)		(0.000)		(0.000)
Low		-0.000		-0.001		-0.001
Medium		0.004***		0.004***		0.004***
High		0.008***		0.008***		0.008***
Observations	2098	2098	2098	2098	2098	2098
N_g	162	162	162	162	162	162

Column 1&2 are initialized based on the Blundell and Bond, column 3&4 are initialized using the Arellano and Bond, while column 5&6 are initialized base Anderson Hsiao Standard errors in parentheses. ** $p < 0.05$, *** $p < 0.01$.

Table 5: Results of the impact of institution on economic growth-foreign capital inflow nexus, using political stability as proxy for institutional quality and applying the Bias Corrected Least Square Dummy Variable methods

	1	2	3	4	5	6
L.lcf	0.886***	0.892***	0.873***	0.877***	0.877***	0.881***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Economic growth	0.002**	-0.000	0.002**	-0.000	0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Political stability	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Real GDPC	0.149***	0.137***	0.172***	0.163***	0.180***	0.172***
	(0.039)	(0.039)	(0.040)	(0.041)	(0.039)	(0.040)
Financial openness	0.010	0.010	0.009	0.008	0.009	0.008
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Foreign reserves	0.016***	0.017***	0.017***	0.018***	0.017***	0.018***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Exchange rate	-0.002	-0.002	-0.001	-0.002	-0.001	-0.001
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
GDPG*P.Stability		0.000**		0.000**		0.000**
		(0.000)		(0.000)		(0.000)
Low		-0.000		-0.000		-0.000
Medium		0.003**		0.003**		0.003**
High		0.007***		0.006***		0.006***
Observations	2098	2098	2098	2098	2098	2098
N_g	162	162	162	162	162	162

Column 1&2 are initialized based on the Blundell and Bond, column 3&4 are initialized using the Arellano and Bond, while column 5&6 are initialized base Anderson Hsiao Standard errors in parentheses. ** $p < 0.05$, *** $p < 0.01$.

Table 6: Results of the impact of institution on economic growth-foreign

	1	2
L.lcf	0.676***	0.685***
	(0.027)	(0.026)
Economic growth	0.005**	-0.002
	(0.002)	(0.001)
Institutions	-0.004	-0.004
	(0.003)	(0.002)
Real GDPC	0.438***	0.415***
	(0.057)	(0.054)
Financial openness	0.008	0.013
	(0.021)	(0.019)
Foreign reserves	0.084***	0.087***
	(0.024)	(0.023)
Exchange rate	0.004	0.003
	(0.005)	(0.005)
GDPG*Institutions		0.000***
		(0.000)
Constant	-0.769***	-0.658**
	(0.295)	(0.283)
Low		-0.001
Medium		0.008***
High		0.017***
Observations	969	969
N_g	**162.000**	**162.000**

capital inflow nexus, using the dynamic system GMM method.
Standard errors in parentheses. ** $p < 0.05$, *** $p < 0.01$

4. Conclusion and Policy Implication

The last three decades have seen substantial foreign capital flows among countries. Contrary to statistics, economic theory suggests that foreign capital would flow more to developing countries. Lucas, while attempting to provide an answer to theoretical aberration, argues that differences in institutional quality among countries are one of the primary reasons why foreign capital does not flow to poor developing countries. Furthermore, empirical evidence on the relationship between institutions and foreign capital inflow is mixed. This study investigates the impact of institutional quality on the relationship between economic growth and capital inflows. This study addresses model and inferential gaps in previous studies.

Using data from 2002-2015 among 163 countries and applying the bias-corrected least square dummy variable techniques, the results show that the growth rate of GDP, per capita real GDP, and foreign reserves have significant positive effects on foreign capital inflows, while capital account openness, exchange rate, and institutions are found to have insignificant effects on capital inflows. Furthermore, the paper finds that the impact of economic growth on capital inflows is subject to the level of institutional quality. The results show that the growth rate of GDP does not have a significant effect on foreign capital inflows at low levels of institutional quality, whilst at median and high levels of

institutional development, economic growth has a strong positive impact on foreign capital inflow.

Using a specification that examines the role of institutions by investigating the individual impact of corruption control and political stability, we demonstrate that improvement in corruption control and political stability are prerequisites for a favourable impact of economic growth on capital inflows. Hence, we conclude that there is no significant difference between the general level of institutional quality and individual indicators in relation to the impact of economic growth on capital inflows.

Therefore, countries seeking to increase foreign capital inflows can enhance their institutional framework, especially by establishing a reliable structure for economic policies and enforcement. In addition, this development strategy would have positive spillovers to other economic activities essential for growth and development.

References

Abdullah, M. A., Mansor, S. A. and Puah C. H., (2010), 'Determinants of International Capital Flows: The Case of Malaysia', Global Economy and Finance Journal Vol. 3 No.1: 31–43.

Abdulwakil, M. M., Abdul-Rahim, A. S., & Alsaleh, M. (2020). Bioenergy efficiency change and its determinants in EU-28 region: Evidence using Least Square Dummy Variable corrected estimation. *Biomass and bioenergy*, *137*, 105569.

Ahmed, S., & Zlate, A. (2014). Capital flows to emerging market economies: A brave new world?. *Journal of International Money and Finance*, *48*, 221-248.A Brave New

Akhtauruzamman, M., Hajzler, C., and Owen, P. D. (2017). Does institutional quality resolve the Lucas paradox? Applied Economics;

Alfaro, L. Kalemli-Ozcan, S., and Volosovych, V. (2004). Volatility of capital flows: Bad policies or bad institutions.

Arias, F. Garrido, D. Parra, D., and Rincon, H. (2013). Do the difference types of capital flows respond to the same fundamentals and in the same degree? Recent evidence from emerging economies.

Appiah, M., Gyamfi, B. A., Adebayo, T. S., & Bekun, F. V. (2023). Do financial development, foreign direct investment, and economic growth enhance industrial development? Fresh evidence from Sub-Sahara African countries. *Portuguese Economic Journal*, *22*(2), 203-227.

Arshad, M. U., Majeed, S. and Ali Shah, S. Z. (2012), 'The Determinants of Capital Inflow in Developing Economies: An Empirical Study of Pull Factors', Journal of Basic and Applied Scientific Research, 2(10) 9764–9769.

Azemar, C, Desbordes, R. (2013). Has the Lucas Paradox been fully explained? Economic. Letters; Vol. 121, 183–187.

Bathia, D., Demirer, R., Ferrer, R., & Raheem, I. D. (2023). Cross-border capital flows and information spillovers across the equity and currency markets in emerging economies. *Journal of International Money and Finance*, *139*, 102948.

Baek. I. (2006). Portfolio Investment Flows to Asia and Latin America: Pull, Push Or Market Sentiment? Journal of Asian Economics; Vol.17: 363–73.

Blonigen, B. A., Piger, J. 2014. Determinants of foreign direct investment. Can. J. Econ. Vol. 47: 775–812.

Brafu-Insaidoo, W. G. and Biekpe, N. (2014). Determinants of foreign

capital inflows: the experience of selected Sub-Saharan countries. Journal of Applied Economics; Vol. XVII: 63-88.

Brambor, T. Clark, W. R., and Golden, M. (2006). Understanding interaction models: improving empirical analyses. Political Analysis; Vol. 14: 63-82.

Brana, S and Lahet, D. (2010). Determinants of capital inflows into Asia: The relevance of contagion effect as push factor. Emerging Market Review; Vol. 11: 273-284.

Bun, M.J.G and Kiviet, J.F. (2003). On the diminishing returns of higher order terms in asymptotic expansions of bias. Economics Letters; 79: 145–152.

Byrne, J. P and Fiess, N. (2015). International capital flows to emerging markets: National and global determinants. Journal of International Money and Finance;

Chinn, Menzie D., and Hiro Ito. 2006. What matters for financial development? Capital controls, institutions, and interactions. Journal of Development Economics; Vol. 81: 163–92.

Choi, C., Rhee, D.-E., Oh, Y., 2014. Information and capital flows revisited: the Internet as a determinant of transactions in financial assets. Econ. Model; Vol. 40: 191–198.

Duodu, E., & Baidoo, S. T. (2022). The impact of capital inflows on economic growth of Ghana: Does quality of institutions matter? *Journal of Public Affairs*, *22*(1), e2384.

Dang, V. A., Kim, M., and Shin, Y (2015). In search of robust methods for dynamic panel models in empirical corporate finance. Journal of Banking and Finance, Vol. 53; 84-98.

Daude, Christian, and Ernesto Stein. 2007. The quality of institutions and foreign direct investment. *Economics & Politics;* Vol. 19: 317–44.

Fratzscher, M. (2012). Capital flows, push versus pull factors and the global financial crisis. *Journal of International Economics*, *88*(2), 341-356.

Gertler, M., & Rogoff, K. (1990). North-South lending and endogenous domestic capital market inefficiencies. Journal of Monetary Economics; Vol. 26(2): 245-266.

Ghosh, A., R., Ostry, J., D., and Qureshi, M., S. (2016). When Do Capital Inflow Surges End in Tears? American Economic Review: Papers & Proceedings 2016, 106(5): 581–585.

Githaiga, P. N., & Kilong'i, A. W. (2023). Foreign capital flow, institutional quality and human capital development in sub-Saharan Africa. *Cogent Economics & Finance*, *11*(1), 2162689.

Gourinchas, P. O., & Jeanne, O. (2013). Capital flows to developing countries: The allocation puzzle. *Review of Economic Studies*, *80*(4), 1484-1515.

Ghosh, Atish R., Mahvash S. Qureshi, Jun Il Kim, and Juan Zalduendo. 2014. Surges. Journal of International Economics; Vol. 92: 266–85.

Hannan, S. A. (2018). Revisiting the determinants of capital flows to emerging markets- A survey of the evolving literature. IMF Working Paper 18/214.

Ito, H., Jongwanich, J., and Terada-Hagiwara, A. (2009). What makes developing Asia resilient in a financially globalized world? ADB Economics Working Paper Series No. 181.

Jabbar, A and Awan, A. G. (2014). The determinants of capital inflow in

developing countries with special reference to Pakistan. Developing Country Studies; Vol. 4: 159-182.

Joffe, M. (2017). Why does capital flow from poor to rich countries?–The real puzzle. *Real-World Economics Review*, *81*, 42-62.

Judson, R.A and Owen, A.L. (1999). Estimating dynamic panel data models: a guide for macro-economists. Economic Letters; 65: 9–15.

Kiviet, J.F. (1995). On bias, inconsistency, and efficiency of various estimators in dynamic panel data models. Journal of Econometrics; 68: 53–78.

Koepke, R. (2015). What drives capital flows to emerging markets? A survey of the empirical lietratures. Munich Personal RePEC Archive Paper No. 75887.

kurul, Z and Yalta, Y. (2017). Relationship between institutional factors and FDI flows in developing countries: New Evidence from dynamic panel estimations. Economics; Vol. 5: 5-17.

Lane, P. R., and Milesi-Ferretti, G. M. (2007). The external wealth of nations mark ii: revised and extended estimates of foreign assets and liabilities, 1970–2004. Journal of International Economics; Vol. 73 (2): 223–250.

Lane, P. R., and Milesi-Ferretti, G. M. (2017). The external wealth of nations mark ii: revised and extended estimates of foreign assets and liabilities, 1970–2004. Journal of International Economics; Vol. 73 (2): 223–250.

Lane, P., R and Milesi-Ferretti, G., M (2017). International Financial Integration in the Aftermath of the Global Financial Crisis. IMF Working Paper 17/115.

Liyanage, E. (2016). Determinants of capital inflows: Evidence from Sri Lanka. Central Bank of Sri Lanka. Staff Studies; Vol. 44: 1-31.

Lothian, J. R. (2005). Institutions, capital flows, and financial integration. Center for Research in International Finance Working Paper Series 7.

Lucas, R. E. (1990). Why doesn't capital flow from rich to poor countries. American Economic Review, Vol. LXXX: 92-96.

Martin, Philippe, Rey, Héléne, 2004. Financial super-markets: size matters for asset trade. Journal of International Economics; Vol. 64 (2): 335–361.

Meschi, E and Vivarelli, M. (2009). Trade and income inequality in developing countries. World Development; Vol. 37: 287-302.

Nickell, S. J. 1981. Biases in dynamic models with fixed effects. Econometrica 49: 1417–1426.

OECD. 2012. Attracting Foreign Direct Investment for Development. Paper presented at the Global Forum on International Investment, Shanghai, China, December 5–6.

Ohno, S. (2010). Determinants of foreign capital inflows: evidence from resource rich countries.

Okada, K. (2013). The interaction effects of financial openness and institutions on international capital flows. Journal of Macroeconomics, 35, 131-143.

Papaioannou (2009). What drives international financial flows? Politics, Institutions, and other determinants. Journal of Development Economics; Vol. 88: 269-281.

Pinar, M and Volkan, E. (2018). Institutions and information flows, and their effect on capital flows. Information Economics and Policy; Vol. 43: 34-47.

Portes, R and Rey, H. (2005). The determinants of cross-border equity

flows. Journal of International Economics; Vol. 65 (2): 269–296.

Prasad, E. Rajan, R. and Subramanian, A. (2007). Foreign capital and economic growth. Brookings Papers on Economic Activity; 2007 (2): 153–230.

Reinhardt, D., Ricci, L. A., and Tressel, T. (2013). International capital flow and development: financial openness maters. Journal of International Economics; Vol. 91: 235-251

Reinhart, C and Rogoff, K. (2004). Serial default and the "paradox of rich to poor capital flows. American Economic Review Papers and Proceedings; Vol. 94 (2): 53–59.

Shell, H. G., and Zheng, L. (2015). The interaction effects of globalization and institutions on international capital flows. International Journal of Economic and Finance; Vol. 7: 12-22.

Vo, X. V. (2018). Determinants of capital flows to emerging economies: Evidence from Vietnam. Finance Research Letters; Vol.27: 23-27.

Yang, H., Xiong, Y. and Ze, Y. (2013). A Comparative Study of Determinants of International Capital Flows to Asian and Latin American Emerging Countries. Procedia Computer Science; 17: 1258–1265.

Yang, L., & Ni, M. (2022). Is financial development beneficial to improve the efficiency of green development? Evidence from the "Belt and Road" countries. *Energy Economics*, *105*, 105734.

Zehri, Chokri, and Latifa Saleh Iben Ammar. (2024): "Effects of capital flow restrictions: Evidence of welfare improvement." *The Journal of International Trade & Economic Development* 33, no. 5 766-795.

Appendix 1:
List of countries

Albania, Algeria, Angola, Antigua and Barbuda, Argentina Armenia, Aruba, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana Brazil, Bulgaria, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Canada, Central African Republic, Chad Chile, China, Colombia, Comoros, Congo DR, Congo Rep, Costa Rica, Cote d'Ivoire, Croatia, Cyprus, Czech Republic, Denmark, Dominica, Dominican Rep, Ecuador, Egypt, El-Salvador, Equatorial Guinea, Eritrea, Estonia, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Granada, Guatemala, Guinea, Guinea Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea, Kuwait, Kyrgyz Rep, Lao, Latvia, Lebanon, Lesotho, Liberia, Libya, Lithuania, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritania, Mauritius, Mexico, Micronesia Fed, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Rwanda, Samoa, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Singapore, Slovak, Slovenia, Solomon Island, South Africa, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and Grenadines, Sudan, Suriname, Sweden, Switzerland, Tajikistan, Tanzania, Thailand, Togo, Tonga, Tunisia, Turkey, Uganda, Ukraine, UAE, United Kingdom, USA, Uruguay, Venezuela, Vietnam, Zambia, Zimbabwe.