Dynamic Role of Institutional Quality on Growth Impact of Capital Inflow, Finance, and Infrastructure Progress: Developing Country Perspectives

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ABSTRACT

Based on the global dataset from 95 developing countries, this study examined the impact of capital inflow, finance, and infrastructure development on economic growth and also investigated the moderating role of institutional quality on economic growth. To address the research objective, the study adopted the Generalized Method of Moments (GMM) which theoretically maintains the endogeneity issue. Since the institutional quality varies across countries, the study also applied Quantile Regression to explore the effect of different level- capital inflow, finance, and infrastructure development prevailing across the selected countries on the economic growth. The finding clearly supported that capital, finance, and infrastructure development were very important for economic growth, whilst institutional qualities had a statistically significant moderating effect in our test models. Finally, the study carries a substantial momentum for the policy-making decision across developing countries. These findings emphasized the need for policymakers to strengthen institutional frameworks to enhance the effectiveness of infrastructure and financial investments. Consequently, developing countries can better leverage these factors for sustainable economic growth.

Keywords: Capital Inflow, Finance, Infrastructure Development, Institutional Qualities, Economic Growth

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INTRODUCTION

The rise in economic growth is crucial for any country to maintain optimal level of employment, increase the tax revenue and consumption level. Thus, countries with lower economic growth strive heart and soul to swell economically in a sustainable way. However, to ascertain sustainable economic growth, there are few factors that draw attention predominantly, and several of them are financial development, foreign direct investment, and infrastructure development, among others. The evidence showing the important role of financial development, foreign direct investment, and infrastructure development on economic growth is numerous in existing literature. Whereas, it is widely accepted notion that institutional quality constitutes a dynamic mechanism for the country's sustainable development in terms of infrastructure development to the home countries, financial development, and foreign capital inflow to the host countries. Hence, there could be a curiosity to examine the role of institutional quality over the economic growth of a country. So, it is important to understand the prime factors known as institutional quality over the sustainable economic growth of a country. The research issue is fundamental and important, because we can observe high volatility in economic growth particularly among the developing countries of the world as depicted in the following graph:

Figure 1: This Figure Shows the Existing Volatilities of Eeconomic Growth among: (a) Emerging Market and Developing Economies, (b) Advanced Economies, and (c) World Economies as a whole

***Source*: www.world bank.com**

We found that economic growth in developing countries in recent years shows nothing short of impressive, yet this growth compared to back in twenty years was much higher (ADO, 2018; IMF, 2018). The high volatility in economic growth particularly in the developing countries is widely persistent. However, this divergence in terms of economic growth to capital flow (IIF, 2017), financial development and infrastructure development has been a hot topic in the latest economic and finance literature. Although there has been a series of debate about economic divergence and convergence as critically evaluated by Lant Pritchett (1997), more recently Nobel laureate Michael Spence (2011) published a book titled "The next convergence" addressing the underlying reasons and demerits of divergence. Another renowned economist Subramonium and noble laureate Spence argued that the institutional quality was one of the main reasons for this divergence (World Bank, 2018; WESP, 2018). It is also unfortunate that very few of the developing countries are able to reach sustainable development goal which is reaching GDP growth of at least 7 percent in the near future.

In one hand, achieving this target requires more investment, financial as well as infrastructural development in the host countries. On the other hand, more progress on these are hindered by institutional deficiencies, inadequate infrastructure, political instability and lack of social security which is evident across the developing countries (Afonso, 2018). As a fact, institutional deficiency, weak governance, political instability remains the rudimentary obstacle in achieving the 2030 agenda for sustainable development (Global Economic Outlook, 2018). In this respect, the context of developing countries has a substantial instance, because very few researches exist in the area of foreign capital inflow, finance, and infrastructure development and economic growth empirically; despite the strong evidence of low level, poor quality and unequivocal implementation of foreign capital inflow, finance, and infrastructure development, different economic progress, and poor institutional quality existence. Therefore, the principles of justice, equality, equity, property rights, respect towards rules and regulations, abiding with government's decision, stability in the political system and social capital are important in a country to develop smoothly. Hence, it is important to examine how developing countries might suffer low growth due to lower capital influx, diverge finance and infrastructure development. In addition, it is important to examine why there is a divergence and do the institutions play an important role to accelerate

the growth of economy in the developing countries in a sustainable way. Since, the role of institutional quality towards better economic performance in institutionally weaker countries particularly in the developing countries is still not well appreciated (Rodrik 2008; ADB 2010).

Moreover, we understand that the inclusion of standardized institutional qualities might positively accelerate the normal function, and productivity of economic cycle; and thereby can enhance the sustainable economic growth of a country. In this respect, we observed that developing countries were suffering from political instability, low level of government effectiveness, the absence of rule of law, growing inequality, poor healthcare, illiteracy and low level of human capital accumulation along with intense political instability, rampant corruption, non-existence of property rights, absence of rule of law and resource curse which restrains economic growth in developing countries compare with developed ones. All in all, developing countries remained feeble in terms of the performance of institutional qualities (Mody & Murshid, 2005). The evidence of availability of the institutional quality particularly in developing countries is yet at infancy stage. Nonetheless, as of now, there is a growing realization among the academicians and policy makers across the world that sustainable development may be possible if better institutional quality and good governance exist in the developing countries. This means not only the allocation of a large budget for infrastructure development, greater loan disbursement and financial development, greater effort of foreign capital inflow, but also the inclusion of better institutional quality is important for sustainable economic growth of a country. However, hardly a few studies attempted to examine the role of institutional quality as the potential drive for persistent economic growth. Therefore, we believed that our study topped earlier studies.

The purpose of this study was therefore to examine the impact of institutional set up on the linkage between these three i.e. foreign capital inflows, financial development, as well as infrastructure development on the economic growth. While prior studies focused the impact of institutions on financial development (Beck and Levine, 2004; Law et al., 2013) on foreign capital inflow (Asiedu, 2006 Ahlquist, 2006; Albuquerque, 2003 Globerman and Shapiro, 2002) and on the infrastructure development (Vázquez Barquero, 1999; Rodríguez-Pose, 2013), and a few studies on the impact of finance, infrastructure and foreign capital influx on

economic growth (Levine et al., 2000; Beck and Levine, 2004; Bertocco, 2008; Jalil et al., 2010;; Kendall, 2012). Hereby, considering the shortage of literature as well as the importance of robust empirical support with relevant econometric method, we make three important contribution, firstly, to reexamine the economic determinants for the developing countries using advanced econometrics methods, secondly to unearth the interaction effect of institutional environment on the economic growth, and finally we evaluate how the institutional setting shape the effect of capital flow, financial development and infrastructure development on the economic growth across the countries with heteroscedastic institutional quality.

The rest of the paper is organized as follows. Section 2 discusses the relevant literature on the key determinants of economic growth. The model specification, data and the econometric method are explained in section 3. The empirical results and discussions are presented in section 4. The last section wraps up with the concluding remarks and policy implications.

LITERATURE REVIEW

The search for boost up of economic growth as well as the maintenance of sustainable growth is a crucial notion in developing countries. Whereby financial development, foreign direct investment, and infrastructure development are known important stimulus for the wheel of productivity through the proper maintenance of rules, regulation, fair judgement, property law, government service effectiveness, and proper evaluation of innovativeness, among others. Nevertheless, though the existing literature recognizes these elements, there is a lack of studies providing a combined framework to examine their integrated effects on economic growth. This highlights a critical gap that this study intended to address. The institutional qualities referring to voice and accountability, political stability, law, regulatory quality, and government effectiveness are indispensable for economic growth, since the institutional set up is very crucial for financial development (La-Porta et al., 1998; Shen and Lee, 2006), regulatory environments (Mayer and Sussman, 2001; Lee et al., 2013), perhaps to attract foreign direct investment, and government expenditure to develop infrastructural development which increases the attractiveness for international investors. Institutional quality affects the loan to the private

sector by the banks and financial institutions in terms adverse and unfair selection due to link and moral hazards by the entrepreneurs as well as the lack of information provided by the credit registration system. The proper rules, regulation and justice system reduce the adverse selection and moral hazards and increase the incentives to repay the loan by focusing on the development of the business. Moreover, the regulatory and supervisory framework development increase the stability of the banking system which is good for the progress of business and reduces the risk of bank runs. External audit, the transparency of financial statements and the evaluation of financial statements by rating agencies initiatives are expected to be effective for monitoring the debtors and creditors. Proper institutional quality makes sure the foreign bank presence, sound competition, banking efficiency, loan efficiency and parallel distribution to the eligible entrepreneurs.

The role of infrastructure to economic growth has been the hot cake to the policy makers since better infrastructure development is crucial for economic growth (Calderon and Serven 2014; World Bank 2013). The momentum of infrastructure initiated the Rostow's Growth Theory referring the framework of infrastructure development such as call for construction of rail ways and construction of new roads (Rostow 1956; Chakamera and Alagidede, 2018). Regardless of the importance of infrastructure, previous studies often fail to explore the relationship between institutional quality and infrastructure development. This study aimed to fill this gap by examining how institutional quality moderates the connection between infrastructure and economic growth. The consensus was that the infrastructure is crucial to economic growth and the result also sometimes is mixed, as the success of infrastructure to the economic growth hinge on the proper quality and quantity management of infrastructure and that is entirely dependent on the quality of the institution of corresponding state. For instance, political biasness derived from lack of strong political institutions, and political good will is a crucial part of the equation to develop infrastructure in any state. New elected government may go for rebuilding rather than building the existing projects. Moreover, in some areas, government goes for big project due to favoritism even if it is not as crucial as other regions as well; hence it means lack of transparent accountability, more of local nepotism and unequal regional wealth distribution. Keefer and Knack (1995) also got similar results that corruption and lack of accountability hampered the investment and reduced economic growth. Murphy, Shleifer and Vishney

(1991) explained that rent seeking behaviors rose and then the country lost economic productivity due to weaker institutions.

In addition, Ades and Di Tella (1995) illustrated that corruption as a function of industrial policy and showed that manufacturing was correlated with corruption indices. Particularly public project needed bribe to get sanctioned, Mauro (1995, 1996) due to lack of transparency, accountability, and effective service system. He further showed that corruption lowered the government investment and thus resilient economic growth. On the other hand, poor institutional quality also brought about loss of tax revenue and thus affected the public expenditure on infrastructure development. Moreover, bad institutional quality reduced the quality of the existing infrastructure and thus deteriorating infrastructure increase the cost of doing business in the state for both the private and government sectors. Overall, this means the slowdown of output and thereby economic growth, as evidenced by the prior studies could be taken place.

Foreign capital inflow which is an investment in the form of a controlling ownership in a business in one country by an entity based in another country. It is thus distinguished from a foreign portfolio investment by a notion of direct control. The magnitude and investment tenure depended on the institutional set up, the inverse of that make foreign capital contribute poor or even negatively to the economic growth. Therefore, the host countries' institutional quality has to be in a good quality for foreign direct investment to come in since the poor level of institutional quality associated with the increased cost of doing business in the host countries (Shleifer and Vishny, 1992; 1993; Bliss and Tella, 1997; Aidt, 2003). Despite the fact that some studies have analyzed the impact of institutional quality on foreign capital inflow, little attention has been given to its moderating role in shaping foreign capital's contribution to sustainable economic growth, an area this study explores in detail. Aligning with those, Kaufmann (1997) showed that the cost of investing was 20 percent higher in more corrupted host countries than less corrupted ones, because foreign investors avoided corrupted host economies to invest their capital. Moreover, a set of recently conducted studies showed that higher level of corruption in the host countries discourage foreign direct investment (Wei 2000a, 2000b; Drabek and Payne, 2001; Habib and Zurawicki, 2002; Javorcik and Wei, 2009; Egger and Winner, 2006; Busse and Hefeker, 2007; and Hakkala et al., 2008; Barassi & Zhou, 2012, Hossain and Aktar, 2018).

The diverge effect of foreign capital inflow, financial and infrastructural development on economic growth are well documented in the economic literature (Levine, Loayza, & Beck, 2000; Beck and Levine, 2002; Rousseau and Wachtel, 2002; Alfaro, 2003; and Bruno & Campos, 2013). Regardless of this, the literature is absent in comprehensive evidence on the moderating effect of institutional quality on these relationships, leaving a critical gap for empirical investigation. Hence, the mixed and conflicting results of finance, foreign capital inflow and infrastructure development to the economic growth could be due to methodological issues (Carkovic & Levine, 2005) and heterogenous institutional environment (Acemoglu, Johnson & Robinson, 2001; Rodrik, Subramanian & Trebbi, 2004; Aghion, Alesina & Trebbi, 2008). Therefore, institutional qualities are indispensable for economic growth, environmental protection and social welfare (Rose, 1998; Kaplow,1992; Dewatripont and Tirole, 1999; Daughety & Reinganum, 2000; Hadfield, 2011; Aisen and Viega, 2013; Uddin et al., 2017). In this regard, a number of prior studies have explored the role of foreign capital inflow, finance and infrastructural development to the economic growth and no prior study alike this one is extensively conducted on the role of foreign capital inflow, finance and infrastructure development to the economic growth and more intuitively the moderation effect of institution on the relationship between foreign capital inflow, finance and infrastructural development with economic growth.

METHODOLOGY OF THE STUDY

Data and Sample

To explore the first phase of the research objective, we adopted variables i.e. economic growth, foreign capital inflow, financial development and infrastructure development along with the proxies for institutions. The variables and proxies and their expected sign are illustrated in Appendix-1. We ensured the robustness of our analysis by testing for multicollinearity using Variance Inflation Factor (VIF). The VIF values for all variables were less than 5, confirming the absence of multicollinearity issues in our dataset. The dataset of the study covered ninety-six countries ranging from 1994 to 2017. In order to ensure data consistency and omit missing variable, we considered four-year average. We extracted economic growth,

domestic credit provided by the financial sector (% of GDP), secure Internet servers (per 1 million people) for the proxy of infrastructure development and foreign direct investment, net inflows (BoP, current US$) variables from world development indicators and the proxies for institution from the worldwide government indicators of the World Bank.

Test Models

We followed sequential steps to get the econometric model which was appropriate for our study by considering the nature of data and time span. For that, we started with Ordinary Least Squares (OLS) at first to see the relationship between the dependent and independent variables. However, there were certain econometric problems which arose while using OLS for estimating our equation for instance heterogeneity issue, autocorrelation issue and endogeneity issue. To overcome those issues, we adopted the dynamic GMM estimator developed by Arellano and Bond (1991). In our study, we used a 4-year average from 1994 to 2017, which means our T was 6. That limited us to use not only fixed effect but also such dynamic heterogeneous panel estimators as pooled mean group and mean group, where large T was required.

It is suggested that the use of first differences of the variables to eliminate the fixed effects, which is also known as the Standard or Difference GMM. However, the problem of correlation between the lagged dependent variable and the error term remains, which requires the use of instruments. To solve this problem, Arellano and Bond (1991) used appropriate lags of dependent and independent variables as instruments. The lagged levels of regressors, independent variables, may be weak instruments for the differenced variables which cannot be addressed in difference estimator. More specifically, first difference GMM estimator behave poorly and lead to large sample biases when the independent variables are persistent over time (Blundell and Bond, 1998). Finally, the absence of information about the focus variables in the level form can result in loss of a substantial part of total variance in the data (Arellano & Bover, 1995).

To solve these problems Arellano and Bover (1995) and Blundell and Bond (1998) proposed the System GMM estimator. This estimator combines in a system with the regression in first differences and with the regression in

levels. The study also performed the Hansen J-test and Sargan test to verify the validity of the instruments used in the System GMM estimation. The results indicated no over-identification issues, as the p-values for these tests were not statistically significant. To compute the system estimator, variables in differences were instrumented with the lags of their own levels, while variables in levels were instrumented with the lags of their own differences (Bond et al., 2009). In other words, the first differenced moment conditions in Difference GMM were augmented by level moment conditions in System GMM for more efficiency in estimation (Blundell and Bond, 1998). In the System GMM, even though the levels of the explanatory variables were essentially correlated with the country specific fixed effect, the differences were not correlated. In addition to that time dummies may be included to control for the time-specific effects and to eliminate cross-sectional dependence in the data and country or unit dummies may be used to control for the country specific or unit effects. Furthermore, the robustness of the estimates was confirmed through multicollinearity testing using VIF, with all values falling below the threshold of 5. These steps ensured that our model was statistically sound and free from issues that could bias the results. One more argument in favor of using System GMM is that for unbalanced panel data it is better to use System GMM and avoid Difference GMM estimation, which has weakness of magnifying gaps (Roodman, 2009b). Simulations suggest that the System GMM is not necessarily superior to the Difference GMM in cases where the autoregressive parameter is below 0.8 and the time series observations are relatively large (Blundell and Bond, 1998, Moshirian and Wu, 2012). However, System GMM is more efficient if the persistence criteria, the coefficient of lagged dependent variable, fall within lagged dependent variable of OLS and Fixed effect (Huang, 2010). Finally, we estimated the following growth equation recently applied in empirical literature by Aisen & Veiga (2013), Imam & Kpodar (2016) and others:

$$Y_{it} = \alpha_i InitialGDPpercapita_{it} + \beta_i X_{it} + \gamma_{it} INS_{it} + v_i + \mu_t + \varepsilon_{it} \qquad (1)$$

Where i indicated the country (i =1,…N) and t indicated the time period (t =1…T_i).

Where Y_{it} stood for the Economic Growth of country i at the end of period t, X_{it} is a vector of other control variables hypothesized to affect output growth, and INS_{it} represented proxy for institutional development, α, β, and

γ were the parameters and vectors of parameters to be estimated, v_i were country-specific effects, μ_t were time dummies, and, ε_{it} was the error term.

The main control variables comprised the initial GDP per capita, infrastructural development, foreign capital inflow, and domestic credit provided by financial sector to GDP. However, first difference of Eq.1 wasrewritten as follows:

$$\Delta Y_{it} = \alpha_i InitialGDPpercapita_{it} + \beta_i \Delta X_{it} + \gamma_{it} \Delta INS_{it} + \Delta v_i + \Delta \mu_t + \Delta \varepsilon_{it} \quad (2)$$

Quantile Regression

Our study sample consisted of countries with different levels of economic, financial, social and political development. For example, we considered three major categories in terms of income: high income, mid income and low income; different type of political structure, and also degree of different oil dependence, among others. Hence standard least-squares assumption of normally distributed errors did not hold for our dataset because the values for per capita GDP and other independent variables follow a skewed distribution. This was because when there are evidences of outliers and heavy tailed distributions, quantile regression results were characteristically robust for such cases but standard OLS regression estimators were not robust even to the modest departure from normality.

Furthermore, another fundamental reason was that while conventional regression focused on the mean, quantile regressions were able to describe the entire conditional distribution of the dependent variable (Coad & Rao, 2006). In the context of this study, high political stability or low political risk, high oil dependent and per capita GDP countries were of interest in their own right, we did not remove them from the analysis just because they were outliers, but on the other side we strongly believed that it would be meaningful to study them in detail. But this can be done by calculating coefficient estimates at various quantiles of the conditional distribution by using quantile regression equation. Finally, in this respect, Coad & Rao, (2006) documented that a quantile regression approach avoided the restrictive assumption that the error terms were identically distributed at all points of the conditional distribution. If we relaxed this assumption, we could

have acknowledged, to some extent, country heterogeneity and considered the opportunity that estimated slope parameters diverge at different quantiles of the conditional distribution of lower and higher per capita GDP. By following the quantile regression framework of Tiwari (2013) we triedto investigate whether different stages of economic growth were affected by our focused and control variables. The quantile regression model in the framework of Koenker and Bassett (1978) was written as follows:

$$y_{it} = \acute{x}_{it}\beta_0 + \varepsilon\theta_{it}\ with\ Quant_{\theta}((y_{it}|x_{it}) = \acute{x}_{it}\beta_0, \quad (3)$$

Where i denoted country, t denoted time, y_{it} denoted the dependent variables, x'_{it} was a vector of regressors, β was the vector of parameters to be estimated, ε was vector of residuals. $Quant_{\theta}((y_{it} \mid x_{it})$ denoted θ conditional quantile of y_{it} given x_{it}. θ regression quantile, $0 < \theta < 1$, solved the following problem:

$$\min_{\beta} \frac{1}{n}\left\{\sum_{i,t:y_{it}>\acute{x}_{it}\beta} \theta \left|y_{it} - \acute{x}_{it}\beta\right| + \sum_{i,t:y_{it}<\acute{x}_{it}\beta} (1-\theta)\left|y_{it} - \acute{x}_{it}\beta\right|\right\} = \min_{\beta} \frac{1}{n}\sum_{i=1}^{n} \rho_{\theta}\varepsilon_{\theta it} \quad (4)$$

Where $\rho_{\theta}(\cdot)$, which is known as the 'check function', is defined as":

$$\rho_{\theta}(\varepsilon_{\theta it}) = \begin{cases} \theta\varepsilon_{\theta it} & if\ \theta\varepsilon_{\theta it} \geq 0 \\ (\theta-1)\varepsilon_{\theta it} & if\ \theta\varepsilon_{\theta it} \leq 0 \end{cases} \quad (5)$$

Finally, Eq. (2) was solved by linear programming methods. According to Buchinsky (1998), as one increases θ continuously from 0 to 1, one traces the entire conditional distribution of y_{it}, conditional on x_{it}.

Due to the advantages (as stated above) of quantile regression estimation technique over OLS, fixed and random effect models, in the study we examined at the 20th, 40th, 60th, and 80th quantiles as shown below:

$$Q_{0.20}(LGDP) = \alpha_{0.20} + \beta_{0.20,1}LFDI + \beta_{0.20,2}CREDIT + \beta_{0.20,3}SIS + \beta_{0.20,4}X + \varepsilon_{0.20it} \quad (6)$$

$$Q_{0.40}(LGDP) = \alpha_{0.40} + \beta_{0.40,1}LFDI + \beta_{0.40,2}CREDIT + \beta_{0.40,3}SIS + \beta_{0.40,4}X + \varepsilon_{0.40it} \quad (7)$$

$$Q_{0.60}(LGDP) = \alpha_{0.60} + \beta_{0.60,1}LFDI + \beta_{0.60,2}CREDIT + \beta_{0.60,3}SIS + \beta_{0.60,4}X + \varepsilon_{0.60it} \quad (8)$$

$$Q_{0.80}(LGDP) = \alpha_{0.80} + \beta_{0.80,1}LFDI + \beta_{0.80,2}CREDIT + \beta_{0.80,3}SIS + \beta_{0.80,4}X + \varepsilon_{0.80it} \quad (9)$$

RESULTS AND DISCUSSION

In this section, we discuss the results. As presented in Table 1(equation 2 to 6), the dynamic panel estimation GMM represented for various model for economic growth for different institutions and was satisfactory and robust across the models.

Effectiveness of Institutional Quality on Economic Growth

The basic model with the determinants of economic growth was found to be significant with the variables of foreign capital inflow, credit to the private sector (financial development) and infrastructure development. However, for the proxy variables of institutional quality were also found to be significantly positive with economic growth across the models. This corroborated the notion that countries with better institutional quality were likely to grow faster economically. Alternatively, countries along with better Political stability, Voice and Accountability, Government effectiveness, Regulatory quality, and Rule of Law grew faster than those with poor, weaker and unstable Political stability, Voice and Accountability, Government effectiveness, Regulatory quality, and Rule of Law. Thus, our finding was consistent with other studies such as, Political stability plays a vital role in economic development (Aisen & Veiga 2013; Uddin et al., 2017). The estimated equations of 2, 3, 4, 5, and 6 indicated that every proxy for institutional quality was positively associated with an increase in annual economic growth. The results of the test models are presented in the following page:

Table 1: Capital Inflow, Finance, and Infrastructure Progress and Economic Growth: The Role of Institutional Quality

Dependent variable: economic growth						
	1	**2**	**3**	**4**	**5**	**6**
L.LGDPP	0.376***	0.399***	0.350***	0.399***	0.379***	0.422***
	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]
LFDI BOP	0.039***	0.032***	0.038***	0.032***	0.039***	0.043***
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
CREDIT	0.005***	0.004***	0.003***	0.004***	0.004***	0.004***
	[0.00]	[0.00]	[0.09]	[0.00]	[0.00]	[0.08]
SIS	0.011***	0.070**	0.090*	0.008**	0.007*	0.003***
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
POL		0.202***				
		[0.02]				
EFC			0.382***			
			[0.03]			
QLT				0.202***		
				[0.02]		
LAW					0.306***	
					[0.03]	
VOA						0.178***
						[0.02]
Constant	1.564***	1.647***	1.854***	1.647***	1.739***	1.476***
	[0.11]	[0.12]	[0.12]	[0.12]	[0.12]	[0.11]
Observations	590	590	590	590	590	590
No. of instruments	55	65	65	65	65	65
No. of groups	118	118	118	118	118	118
Arellano-Bond: AR(1)	0.028	0.094	0.054	0.094	0.039	0.011
Arellano-Bond: AR(2)	0.876	0.192	0.360	0.192	0.562	0.590
Sargan test (p-val)	0.0730	0.0840	0.120	0.170	0.0980	0.110

Note:
- System-GMM estimations for dynamic panel-data models. Sample period: 1994–2017. Syntaxxtabond2 two step small robust
- All explanatory variables were treated as endogenous. Their two period lagged values were used as instruments in the first-difference equations and their once lagged first-differences were used in the level's equation;
- Two-step results by using robust standard errors corrected for finite samples (by using Windmeijer's, 2005, correction) and Sargan tests never reject the validity of the over-identifying restrictions.
- Second order autocorrelation of residuals is always rejected.
- Standard errors are in parentheses. Significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Table 2: Capital Inflow, Finance, and Infrastructure Progress and Economic Growth: The Role of Institutional Quality

Dependent variable: economic growth						
	7	8	9	10	11	12
L.LGDPP	0.403***	0.475***	0.547***	0.427***	0.468***	0.490***
	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]
LFDI BOP	0.030***	0.011*	0.036***	0.031***	0.031***	0.012*
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
CREDIT	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
SIS	0.009***	0.008*	0.004***	0.001***	0.005***	0.001**
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
POL	0.207***	0.420***	0.152***			
	[0.02]	[0.04]	[0.02]			
polsis	-0.000***					
	[0.00]					
polfdi		-0.033***				
		[0.00]				
polcredit			-0.000			
			[0.00]			
QLT				0.199***	0.192***	0.413***
				[0.02]	[0.02]	[0.04]
qltsis				-0.000*		
				[0.00]		
qltcredit					-0.000	
					[0.00]	
qltlfdibop						-0.033***
						[0.00]
Constant	1.639***	1.552***	1.107***	1.558***	1.437***	1.501***
	[0.12]	[0.11]	[0.10]	[0.12]	[0.11]	[0.11]
Observations	590	590	590	590	590	590
No. of instruments	71	75	85	74	81	81
No. of groups	118	118	118	118	118	118
Arellano-Bond: AR(1)	0.097	0.017	0.018	0.067	0.044	0.014
Arellano-Bond: AR(2)	0.242	0.791	0.283	0.198	0.199	0.787
Sargan test (p-val)	0.101	0.190	0.081	0.109	0.190	0.805

Note:
- System-GMM estimations for dynamic panel-data models. Sample period: 1994–2017. Syntaxxtabond2 two step small robust
- All explanatory variables were treated as endogenous. Their two period lagged values were used as instruments in the first-difference equations and their once lagged first-differences were used in the level's equation;
- Two-step results by using robust standard errors corrected for finite samples (by using Windmeijer's, 2005, correction) and Sargan tests never reject the validity of the over-identifying restrictions.
- Second order autocorrelation of residuals is always rejected.
- Standard errors are in parentheses. Significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Impact of Financial Development, Infrastructure, and Foreign Capital on Growth

The earlier models showed the association of various proxies for institutional quality with economic development. However, we were very curious to unearth the moderating/ instrumental impact of the institutional quality with as usual determinants of development on economic growth. Financial development, infrastructural development, foreign capital inflow plays a vital role in economic growth (Aisen & Veiga 2013; Uddin et al., 2017; Hossain et al. 2018), Intuitively, the presence of our moderator variables Political stability, Voice and Accountability, Government effectiveness, Regulatory quality, and Rule of Law were a significant and real concern for developing countries across the world.

Moderating Role of Political Stability and Governance on Economic Determinants

Our findings here implied that the effect from the combined action of two predictors seemed to be less than the sum of individual effect. In another way, economic indicators and institutions contributed positively to economic growth but their combined effect tended to reduce. One of the reasons could be heterogeneity of developing countries having different levels of economic determinants and institutional quality. The negative sign of political stability and infrastructure development to economic growth, which might be justified by the notion that lower level of political stability hampers the infrastructure development as well as sometimes the politically motivated violence demolish the existing infrastructure system. The same reasoning could also apply for the foreign capital inflow and financial development since foreign investors consider country as an important factor in their capital budgeting decision. Alternatively, better political stability confirms the smooth cashflow for the investment into the host countries.

Contrarily, regulatory quality which is also found significantly positive but combinedly negative sign. The reason is that the ineffective and haphazard policies as well as unorganized regulations might hamper the private sector development, foreign capital inflow as well as reduce the infrastructure development. Another possible reason is that the strict rules, regulations, and policies might adversely affect the leading determinants of

economic growth in a country. For instance, the regulations of debt market barrier might negatively affect the foreign direct investment of a country. The progress in infrastructure development, loan to the potential entrepreneurs and bureaucracy to start a business often gets affected by the government's ability to formulate and implement sound, effective policies and regulations.

Table 3: Capital Inflow, Finance, and Infrastructure Progress and Economic Growth: The Role of Institutional Quality

	Dependent variable: economic growth							
	1	**2**	**3**	**4**	**S17**	**S18**	**S19**	**S20**
L.LGDPP	0.368***	0.408***	0.391***	0.356***	0.383***	0.429***	0.359***	0.433***
	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]
LFDI BOP	0.038***	0.036***	0.018***	0.035***	0.037***	0.013**	0.039***	0.037***
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
CREDIT	0.003***	0.002***	0.004***	0.004***	0.003***	0.004***	0.004***	0.003***
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
SIS	0.008**	0.009**	0.005	0.007*	0.008*	0.019**	0.032***	0.041***
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
EFC	0.382***	0.415***	0.631***	0.716***	0.645***			
	[0.03]	[0.03]	[0.05]	[0.10]	[0.09]			
efcsis	-0.000							
	[0.00]							
efccredit		-0.001***						
		[0.00]						
efclfdi			-0.039***					
			[0.01]					
LAW				-0.362***	-0.300***	0.539***	0.281***	0.309***
				[0.10]	[0.10]	[0.05]	[0.04]	[0.03]
lawsis				-0.001			-0.003	
				[0.00]			[0.00]	
lawcredit					0.003			-0.001
					[0.00]			[0.00]
lawlfdibop						-0.037***		
						[0.01]		
Constant	1.809***	1.734***	1.848***	1.831***	1.758***	1.744***	1.775***	1.604***
	[0.12]	[0.12]	[0.12]	[0.12]	[0.12]	[0.11]	[0.12]	[0.12]
Observations	590	590	590	590	590	590	590	590
No. of instruments	74	81	81	74	81	81	64	81
No. of groups	118	118	118	118	118	118	118	118
Arellano-Bond: AR(1)	0.044	0.030	0.019	0.022	0.017	0.020	0.041	0.022
Arellano-Bond: AR(2)	0.315	0.366	0.634	0.294	0.260	0.739	0.591	0.590
Sargan test (p-val)	0.870	0.102	0.150	0.203	0.910	0.850	0.780	0.180

Note:
- System-GMM estimations for dynamic panel-data models. Sample period: 1994–2017. Syntaxxtabond2 two step small robust
- All explanatory variables were treated as endogenous. Their two period lagged values were used as instruments in the first-difference equations and their once lagged first-differences were used in the level's equation;
- Two-step results by using robust standard errors corrected for finite samples (by using Windmeijer's, 2005, correction) and Sargan tests never reject the validity of the over-identifying restrictions.
- Second order autocorrelation of residuals is always rejected.
- Standard errors are in parentheses. Significance levels at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Interaction Between Institutional Quality and Economic Indicators: Combined Effects

Table 3 represents the following models for the remaining proxies of institutional quality. It is popularly known that financial development and institutional quality can influence economic growth independently, but what about the combined effect of financial development, foreign direct investment, and infrastructure development with government effectiveness and rule of law on growth. We expect a combined effect than separately, since better policy implementation, higher trustworthiness in government commitment, the contract enforcement, the property rights, the police and court administration and the rule of society speed up infrastructure development, attract foreign direct investment an also hasten the loan disbursement to the potential and innovative projects. Moreover, the alignment of those increases the risk-taking ability which spurs the investment and create the additional demand for credit and thus enhance productivity.

In the presence of stronger economic institutions, we assumed that health care spending would contribute to economic growth more prominently. However, health care spending was more exogenous as it largely depended on government policy. We know that developing countries are suffering from low quality economic institutions which actually hamper the proper challenging of fund for health care development. Therefore, we have seen, the combined effect of these variables decreased significantly in all the test models of the study.

Robustness Check

To check the effect of Political stability, Voice and Accountability, Government effectiveness, Regulatory quality, and Rule of Law on economic growth, we ran simultaneous quantile regression as presented in Figure 1 and 2. The Figure showed a marginal effect of all the focused variables on economic growth within zero to one. The bold dotted line represented the OLS coefficient; however, it was evident by the difference between the OLS and marginal effect of Political stability, Voice and Accountability, Government effectiveness, Regulatory quality, and Rule of Law and so on for all percentile points of the quantile in the economic growth distribution

that one cannot simply consider the relationship between growth and the variables of institutions in the mean model. Figure 1 shows that the effect of FDI and credit was aligned across the different quantiles except for infrastructure development which was volatile and negative in the higher quantile., on the other hand, institutional quality particularly political stability and law were positive in the upper quantile, which mirrored the same findings in the previously used GMM model. However, the intercept was sharper in the institutional quality model which implied the importance of institutional development. The result seemed varying perhaps because of the different geographical and economic policies across the developing countries. However, infrastructure development, Voice and Accountability and Government effectiveness were negative in the upper quantile which meant that developing countries were suffering more from poor institutional qualities particularly more in the quality of public goods and services and its independence from political pressure, the quality of policy formulation and implementation, the trustworthiness of government's commitment to the policies as well as, freedom of expression, freedom of association, and freedom of media. Interestingly average year of schooling and human capital index were positive at the upper quantile (the curve is opposite to the curve of OIC countries) which meant that OIC countries were suffering from a human capital crisis which was supported by the literature.

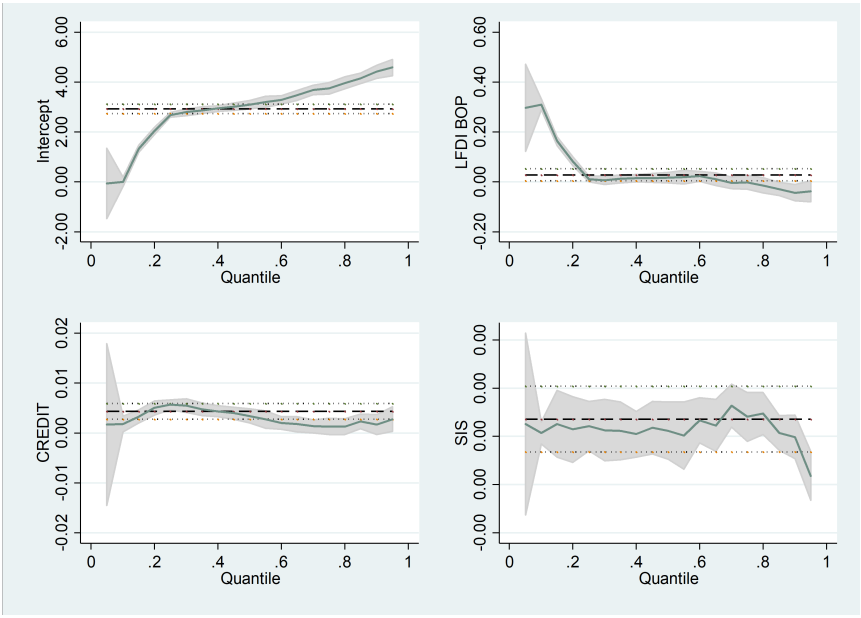

Figure 1: Variation in the Capital Inflow, Ffinancial Development and Infrastructure Development. Confidence Interval Extends to 95 % Confidence Intervals in Both Directions. 100 Replications is Used to Bootstrap Standard Errors. Horizontal Bold Dotted Lines Represent OLS Estimates with 95% Confidence Intervals. We have Plotted the Graphs using the Stata Command 'Grqreg' Developed by Azevedo (2011)

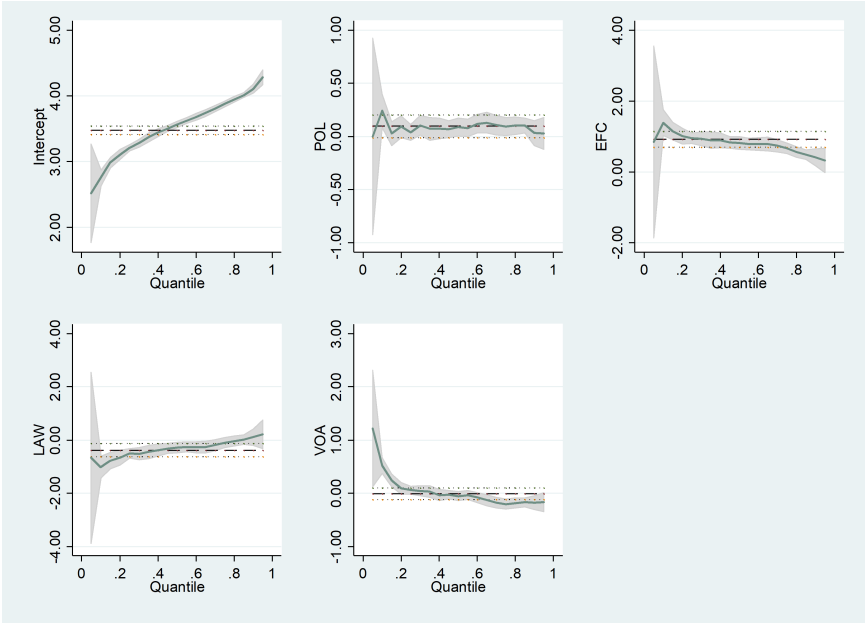

Figure 2: Variation in the Institutional Quality Variables Coefficient Over the Conditional Quantiles. Confidence Interval Extends to 95% Confidence Intervals in Both Directions. 100 Replications is Used to Bootstrap Standard Errors. Horizontal Bold Dotted Lines Represent OLS Estimates with 95% Confidence Intervals. We have Plotted the Graphs using the Stata Command 'Grqreg' Developed by Azevedo (2011)

CONCLUSION

Based on the existing literature and our conceptual analysis, we found that the availability of adequate foreign direct investment (capital inflow), financial progress, and infrastructure development played a significant role on economic growth of a country. In this respect, our theoretical and conceptual analysis suggested that the inclusion of institutional quality (for instance: rule of law, political stability, government effectiveness, control of corruption, quality of regulation, among others) can also accelerate the sustainable economic growth of country. However, quite a few studies have attempted to examine the role of institutional quality on the persistent economic growth of a country. Hence our study attempted to fill up the gap by examining the important research issue based on global data set. In

this respect, we identified that the issue of institutional quality might vary significantly across different countries around the globe. Hence there was a curiosity to examine if the above suggested parameters such as capital inflow, finance, and infrastructure development could contribute significantly for ensuring sustainable economic growth provided the institutional quality of the host country does not perform well. Having considered this important research issue, we investigated the role of institutional quality on economic growth along with the role of three important prime economic development determinants such capital influx, finance, and infrastructure development.

We conducted the study based on the global data set between the period of 1994 to 2017 from 95 developing countries. To address the research objective, the study adopted the Generalized Method of Moments (GMM) as capital inflow, finance, and infrastructure development variables which theoretically maintained the endogeneity issue and also applied Quantile regression to explore the effect of different level- capital inflow, finance, and infrastructure development prevailing across developing countries on the economic growth, since institutional quality varied across countries. In summary, the finding clearly documented that capital inflow, finance, and infrastructure development were very important for economic growth, whilst institutional qualities had a statistically significant moderating effect in our test models. It documented that institutional qualities used as interactive variables in the test models led capital inflow, finance, and infrastructure development to contribute as the significant drivers for economic growth sustainably. We believe that our findings have meaningful policy implications for different stakeholders of a country, particularly the developing countries. Therefore, this study shed light on the policy-making decisions in the global market.

REFERENCES

Acemoglu, D., Gallego, F. A., & Robinson, J. A. (2014). Institutions, human capital, and development. Annu. Rev. Econ., 6(1), 875-912.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. American economic review, 91(5), 1369-1401.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2002). Reversal of fortune: Geography and institutions in the making of the modern world income distribution. The Quarterly journal of economics, 117(4), 1231-1294.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2012). The colonial origins of comparative development: An empirical investigation: Reply. American Economic Review, 102(6), 3077-3110.

Ades, A., & Di Tella, R. (1995). Competition and Corruption, Draft Paper, Keble College.

Aghion, P., Alesina, A. & Trebbi, F. (2008), Democracy, technology, and growth, in E. Helpman, ed., 'Institutions and Economic Performance', Harvard University Press.

Aghion, P., Howitt, P., & García-Peñalosa, C. (1998). Endogenous growth theory. MIT press.

Aidt, T., 2003. Economic analysis of corruption: a survey. The Economic Journal 113, 632–652.

Aisen, A., & Veiga, F. J. (2013). How does political instability affect economic growth?. European Journal of Political Economy, 29, 151-167.

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and economic growth: the role of local financial markets. Journal of international economics, 64(1), 89-112.

Arellano, M., and Bond, S. R. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. Review of Economic Studies, 58, 277–297.

Arellano, M., and Bover, O. (1995). Another look at the instrumental variables estimation of error component models. Journal of Econometrics, 68, 29–51.

Asian development outlook 2018, retrieved from https://www.adb.org/sites/default/files/publication/452971/ado2018-update.pdf.

Barassi, M. R., & Zhou, Y. (2012). The effect of corruption on FDI: A parametric and non-parametric analysis. European Journal of Political Economy, 28(3), 302-312.

Barquero, A. V. (1999). Desarrollo, redes e innovación: lecciones sobre desarrollo endógeno. Madrid: Pirámide.

Beck, T., & Levine, R. (2004). Stock markets, banks, and growth: Panel evidence. Journal of Banking & Finance, 28(3), 423-442.

Bertocco, G. (2008). Finance and development: Is Schumpeter's analysis still relevant?. Journal of Banking & Finance, 32(6), 1161-1175.

Bliss, C., & Tella, R. D. (1997). Does competition kill corruption? Journal of Political Economy, 105(5), 1001-1023.

Blundell, R., and Bond, S. R. (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics, 87, 115–143

Bond, S. R., Hoeffler, A., and Temple, J. (2009). GMM estimation of empirical growth models. CEPR Discussion Papers, no. 3048 (URL). http://www.cepr.org/pubs/dps/DP3048.asp

Bruno, R. L., & Campos, N. F. (2013). Reexamining the conditional effect of foreign direct investment. Institute for the Study of Labor (IZA).

Busse, M., & Hefeker, C. (2007). Political risk, institutions and foreign direct investment. European journal of political economy, 23(2), 397-415.

Calderón, C., & Servén, L. (2014). Infrastructure, growth, and inequality: An overview. The World Bank.

Campos, J. E., Lien, D., & Pradhan, S. (1999). The impact of corruption on investment: Predictability matters. World development, 27(6), 1059-1067.

Canning, D., & Fay, M. (1993). The effect of transportation networks on economic growth. Columbia University, May.

Carkovic, M., & Levine, R. (2005). Does foreign direct investment accelerate economic growth?. Does foreign direct investment promote development, 195.

Chakamera, C., & Alagidede, P. (2018). The nexus between infrastructure (quantity and quality) and economic growth in Sub Saharan Africa. International Review of Applied Economics, 32(5), 641-672.

Daughety, A. F., & Reinganum, J. F. (2000). On the economics of trials: adversarial process, evidence, and equilibrium bias. Journal of Law, Economics, and Organization, 16(2), 365-394.

Dewatripont, M., & Tirole, J. (1999). Advocates. Journal of political economy, 107(1), 1-39.

Drabek, Z., & Payne, W. (2002b). The impact of transparency on foreign direct investment. Journal of Economic Integration, 777-810.

Easterly, W., & Levine, R. (1997). Africa's growth tragedy: policies and ethnic divisions. The quarterly journal of economics, 112(4), 1203-1250.

Egger, P., & Winner, H. (2006). How corruption influences foreign direct investment: A panel data study. Economic Development and Cultural Change, 54(2), 459-486.

Habib, M., & Zurawicki, L. (2002). Corruption and foreign direct investment. Journal of international business studies, 33(2), 291-307.

Hadfield, G. K. (2011). The dynamic quality of law: the role of judicial incentives and legal human capital in the adaptation of law. Journal of Economic Behavior & Organization, 79(1-2), 80-94.

Hakkala, K. N., Norbäck, P. J., & Svaleryd, H. (2008). Asymmetric effects of corruption on FDI: Evidence from Swedish multinational firms. The Review of Economics and Statistics, 90(4), 627-642.

Hossain, M. S. and Aktar, R. (2018) Financial Stability: An Analysis and Empirical Evidence, International Journal of Business Research, 18 (4), under production.

Hulten, C. R. (1996). Infrastructure and economic development: One more unto the beach. University of Maryland, College Park. Mimeo.

Imam, P., & Kpodar, K. (2016). Islamic banking: Good for growth?. Economic Modelling, 59, 387-401.

Jalil, A., Feridun, M., & Ma, Y. (2010). Finance-growth nexus in China revisited: New evidence from principal components and ARDL bounds tests. International Review of Economics & Finance, 19(2), 189-195.

Javorcik, B. S., & Wei, S. J. (2009). Corruption and cross-border investment in emerging markets: Firm-level evidence. Journal of International Money and Finance, 28(4), 605-624.

Kaplow, L. (1992). Rules versus standards: An economic analysis. Duke Lj, 42, 557.

Kaufmann, D. (1997). Corruption: the facts. Foreign policy, 114-131.

Kendall, J. (2012). Local financial development and growth. Journal of Banking & Finance, 36(5), 1548-1562.

Khomenko, M. (2014). An Analysis of the Effect of Government Effectiveness on the Aggregate Level of Entrepreneurial Activities.

Knack, S., & Keefer, P. (1995). Institutions and economic performance: cross-country tests using alternative institutional measures. Economics & Politics, 7(3), 207-227.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1997). Legal determinants of external finance. The journal of finance, 52(3), 1131-1150.

Law, S. H., Azman-Saini, W. N. W., & Ibrahim, M. H. (2013). Institutional quality thresholds and the finance–growth nexus. Journal of Banking & Finance, 37(12), 5373-5381.

Lee, C. C., Chiu, Y. B., & Chang, C. H. (2013). Insurance demand and country risks: A nonlinear panel data analysis. Journal of International Money and Finance, 36, 68-85.

Levine, R., Loayza, N., & Beck, T. (2000). Financial intermediation and growth: Causality and causes. Journal of monetary Economics, 46(1), 31-77.

Mauro, P. (1995). Corruption and growth. The quarterly journal of economics, 110(3), 681-712.

Mayer, C., & Sussman, O. (2001). The assessment: finance, law, and growth. Oxford Review of Economic Policy, 17(4), 457-466.

Mody, A., & Murshid, A. P. (2005). Growing up with capital flows. Journal of international economics, 65(1), 249-266.

Moshirian, F. and Wu, Q. (2012). Banking industry volatility and economic growth. Research in International Business and Finance, 26, 428-442.

Murphy, K. M., Shleifer, A., & Vishny, R. W. (1991). The allocation of talent: Implications for growth. The quarterly journal of economics, 106(2), 503-530.

Rodríguez-Pose, A. (2013). Do institutions matter for regional development? Regional Studies, 47(7), 1034-1047.

Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions rule: the primacy of institutions over geography and integration in economic development. Journal of economic growth, 9(2), 131-165.

Roodman, D., (2009b), A note on the theme of too many instruments. Oxford Bulletin of Economics and Statistics, 71, 135-158.

Rose, C. M. (1988). Crystals and mud in property law. Stanford Law Review, 577-610.

Rostow, W. W. (1956). The take-off into self-sustained growth. The Economic Journal, 66(261), 25-48.

Rousseau, P. L., & Wachtel, P. (2002). Inflation thresholds and the finance–growth nexus. Journal of international money and finance, 21(6), 777-793.

Shen, C. H., & Lee, C. C. (2006). Same financial development yet different economic growth: why?. Journal of Money, Credit and Banking, 1907-1944.

Shleifer, A., & Vishny, R. W. (1993). Corruption. The quarterly journal of economics, 108(3), 599-617.

The convergence or divergence in development retrieved from http://blogs.worldbank.org/futuredevelopment/convergence-or-divergence-development.

The report is conducted by the Institute of International Finance (IIF) in 2017.

Uddin, M. A., Ali, M. H., & Masih, M. (2017). Political stability and growth: An application of dynamic GMM and quantile regression. Economic Modelling, 64, 610-625.

Wei, S. J. (2000a). How taxing is corruption on international investors? Review of economics and statistics, 82(1), 1-11.

Wei, S. J., & Shleifer, A. (2000b). Local corruption and global capital flows. Brookings papers on economic activity, (2), 303-346.

Windmeijer, F. (2005) A finite sample correction for the variance of linear efficient two-step GMM estimators, Journal of Econometrics, 126, 25–51.

World Bank. 2013. Fact Sheet: Infrastructure in Sub-Saharan Africa. The World Bank Group. Accessed July 7, 2015. http://web.worldbank.org.

World Economic Situation and Prospects 2018, retrieved from https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018_Full_Web-1.pdf.