Capital inflows and economic growth nexus in Sub-Saharan Africa: evidence on the role of institutions

Ndiweni, Zinzile Lorna and Bonga-Bonga, Lumengo

University of Johannesburg

17 March 2021

Capital inflows and economic growth nexus in Sub-Saharan Africa: evidence on the role of institutions

Zinzile Lorna Ndiweni
and
Lumengo Bonga-Bonga

ABSTRACT

This paper assesses the relationship between international capital inflows and economic growth in developing economies. We employ methods of threshold regression to examine whether capital flows have different effects in developing economies with weak institutions as compared to those with good institutional infrastructure.. Our findings show that a threshold effect exists in the capital inflows and growth nexus. More precisely, the results obtained demonstrated that the impact of capital inflows on economic growth is positive and significant once a defined threshold level of institutional quality has been exceeded. At any point below that threshold level, the capital inflows-growth relationship appears to be non- existent. These results support the notion of the capital inflows and growth relationship being contingent on the level of institutional development in an economy. Therefore, providing vital policy implications for policy makers and government in ensuring the improvement of a country's institutional environment with the purpose of enhancing economic growth through capital flows.

Keywords: Capital inflows, economic growth, institutional quality, threshold regression

1. Introduction

Over the past years, the level of gross international capital inflows to Sub Saharan Africa has experienced an increase from approximately 2% of GDP in 1990 to about 6% of GDP in 2017, this increase has been mainly driven by private direct capital flows such as foreign direct investment and portfolio investment (IMF, 2019). External capital inflows are an important source of financing investments in host countries; thus, they are believed to promote an economic growth accelerating environment. Economic theory postulates that international capital flows facilitate the enhancement of the recipient nation's economic growth as they significantly contribute to their capital accumulation and bring about technology, the know-how and productivity spillovers (Agbloyor et al, 2016). In spite of these strong theoretical foundations such as the work of Romer (1993), the existing empirical evidence has brought forth largely varying and inconclusive results. In point of fact, the empirics have often failed to establish the well- perceived positive relationship between capital flows (inherent spillovers and productivity) and growth. While some authors have established a negative relationship between capital flows and economic growth, some have inferred an insignificant relationship altogether (see Djankov and Hoekman, 2000; Coulibaly et al., 2018; Van Bon, 2019 and Konings, 2001;).

Some of the notable reasons that have been suggested as plausible in explaining the widespread view of this ambiguous relationship include the distinctive characteristics of recipient countries. Growing in popularity, is the suggestion that foreign capital inflows encourage economic growth under certain conditions in the host economy (Agbloyor et al, 2016). Thus, the inconclusive results could be attributed to the failure of modelling contingency effects in the inflows- growth nexus. Various economic models propose that the linkage between capital inflows and economic growth could be contingent on other factors. Conditional factors that include but are not limited to financial development (see for example, Amadi, 2019 and Agbloyor et al., 2014), macroeconomic stability (Alguacil et al., 2014) and institutional infrastructure (see Slesman et al., 2015 and Agloyor et al., 2016).

The model by Slesman et al., (2015) suggests that the impact of capital inflows on economic growth is dependent on the quality of institutional infrastructure of the host economy. The authors show that countries are only able to exploit the benefits embedded in capital inflows, such as productivity, positive spillovers, new technologies and much more, only once a defined

optimum threshold level of institutional quality has been surpassed. While the economies that fall short of the threshold level may not receive the full benefits and thus record negative or even insignificant effects. According to Acemoglu et al., (2003) nations with strong institutions have a good level of democracy, possess relative equality, protection of property rights and political behavior is subject to some level of accountability. In turn, such strong institutions attract greater amounts of external capital inflows, in the forms of direct investments and much more (Papaioannou, 2009). Conversely, weak institutions which are more often found in low-income developing economies discourage foreign capital inflows and have interestingly been found to be one of the most significant constraints that often lead to a Lucas Paradox pattern in international capital flows (Alfraro et al., 2008). Whereby, capital flows do not flow to developing economies from the advanced economies as expected. Instead, they are often observed flowing upstream from the developing to the advanced economy (Slesman et al., 2015).

A few notable studies that sought to investigate the cause of the unexpected negative relationship between capital inflows and economic growth include but are not limited to Papaioannou, 2009; Agloyor et al., 2016; Amadi, 2019, Alfraro et al., 2008 and Azman- Saini et al., 2010. These studies all establish the presence of threshold effects in the relationship between foreign capital inflows and economic growth. The authors suggest that economies only start to absorb the benefits of capital flows once a certain threshold has been surpassed. A nation's ability to achieve the full benefits that accompany capital inflows is largely dependent on its absorptive capacity.

A vast amount of literature has assessed the relationship between foreign capital flows and economic growth, however further investigations remain to be carried out. Studies such as that of Alfaro et al., (2004) make use of linear interaction modelling of a conditional factor for a positive effect of FDI to be realized on growth. This way of modelling has limitations in the sense that the interaction term would thrust a priori restriction that the effects of foreign direct investment on economic growth increase or decrease with the conditional factor. It could be that case however, that some level of that conditional factor, for example, institutional quality, should be reached before the recipient country can reap the benefits from positive externalities brought forth by FDI. This therefore creates a need for more flexible modelling that can allow for various kinds of capital inflows- growth- institutional quality interactions.

This paper uses a different approach to some studies in examining the role of institutional quality in mediating capital inflows effects on economic growth. Following along the lines of Slesman et al., (2015), we make use of threshold specification developed by Hansen (2000). Threshold regression modelling by Hansen (2000) enables us to see the two different types of relationships existing in a single data set. The relationship between flows and growth in a high institutional quality environment could be different from the relationship observed in the regime of low institutional quality. Furthermore, the use of threshold regression also allows for a more realistic parameter heterogeneity which takes care of the common criticism of parameter homogeneity assumption embedded in the linear cross- country regression (Slesman et al., 2015).

We seek to make a contribution to existing literature by providing new evidence on the conditional factors influencing the inflows- growth nexus in the context of Sub Saharan Africa (1990 to 2010) which has not been explored much. To the best of the author's knowledge, this investigation of capital inflows in SSA has often been represented by FDI alone, whereas we make use of both private capital flows, foreign portfolio investment (FPI) and foreign direct investment (FDI). Therefore, this paper investigates the role played by institutional quality in the capital inflows- growth nexus and similarly to other studies, we find that the presence of threshold effects in this relationship does indeed exist. Furthermore, we also find that, only once a certain threshold level has been reached, can an economy take full advantage of FDI associated growth benefits.

The remainder of this paper is therefore structured as follows; section 2 provides a review of the existing literature on the capital flows- growth nexus, section 3 discusses the methodology employed in the study, followed by section 4 which presents the data used, estimation results and discusses the results obtained. Finally, a conclusion is drawn in section 5.

2. Literature Review

This section provides an overview of the theoretical underpinning that seeks to explain the relationship between capital flows and economic growth and thus provides a guide to the research on this nexus. Furthermore, empirical literature with varying results is discussed. We also discuss the empirical findings that take into account the role possibly played by institutions in the impact of capital flows on economic growth.

2.1Theoretical Framework

In a world largely characterized by globalization comes the increase in capital flows across the globe. Theoretically, it has been argued that through capital inflows, financial globalization encourages capital accumulation, particularly in developing economies (Slesman, et al., 2015). Capital flows play a vital role in capital- scarce economies as they are an important source of financing new investments. A general consensus exists among policy makers and researchers that capital inflows, for example, FDI, facilitate economic growth in host countries through various ways. Ways that include but are not limited to technological spillovers and change, and absorption of know- how, which encourage the enhancement of capital stock, competition and increase in employment (Okafor, Ugochukwu and Chijindu, 2016).

The theoretical foundations of capital accumulation and economic growth were originally postulated by Solow and Swan (first neoclassical growth theory) in 1956, where the model of economic growth was based on the amounts of capital stock (K), labour levels (L) and technology. The conceptual framework for the foreign capital flows led economic growth can be traced back to this time where the first neo- classical economic growth model was developed. According to the neoclassical growth model, financial globalization leads to capital flows from capital- abundant to capital- scarce nations, where the latter is predicted to have greater returns to capital (Okafor et al, 2016) Contrary to this view, it has been found that capital often flows upstream from developing economies which are capital- scarce to developed economics which are capital- abundant, which is referred to as the Lucas Paradox. Various authors have gained interest in exploring the possible factors influencing this Lucas paradox pattern of flows and thus resulted in some of the literature to be discussed in the next section.

2.2 Empirical Findings

A vast amount of literature has examined the relationship between international capital flows and economic growth, with findings demonstrating an ambiguous relationship. Contrary to the expected results of a positive relationship as suggested by growth theories such as the Solow and Swan (1956) model, numerous studies have established that capital inflows can have a negative or insignificant impact on economic growth, particularly in some developing economies (see Klobodu and Adams, 2016; Aizenman et al., 2012 and; Adams and Klobudu,

2018). As a result, various authors have sought to find the possible underlying cause to capital inflows failure in the enhancement of economic growth in some economies. This has often been done by introducing a contingent effect in the literature, whereby the impact of capital flows on economic growth is influenced by conditional variables, including but not limited to financial liberalization, institutional infrastructure and financial markets.

Among such noteworthy studies is that of Slesman at al. (2015) which examined the impact of foreign capital inflows on economic growth, contingent on the economies' institutional development. Using panel data over a period of 1975 to 2005 based on 80 countries, consisting of advanced, emerging and developing economies, the authors employed threshold regression techniques with institutional quality as the threshold variable. Their findings indicated that foreign direct investment, portfolio debt and portfolio investment inflows positively influence growth in nations with high institutional development. On the other hand, when the institutional quality was below the estimated threshold level, either negative or insignificant effects were recorded. Other authors such as Azman- Saini et al. (2010) used a panel of 91 countries, the same sample period and threshold techniques as well, however conditioned the inflows- growth relationship on financial markets. A similar conclusion was reached, where the positive effect of foreign direct investment (FDI) on economic growth was only realized after the development of financial markets had exceed the threshold level. Azman – Saini et al. (2010) recorded that property rights protection, legal system, freedom of international trade and credit, labor and business regulations are highly crucial in capturing the benefits associated with FDI.

Similarly, Agbloyor et al. (2016), assess the linkage among foreign direct investment, institutional quality and growth, however in the context of Sub- Saharan Africa. With the use of a two- step generalized methods of moments (GMM) estimator and panel data over the period 1996 to 2010, it was found that institutional quality favorably alters the impact of FDI on growth in developing economies. Similar observations were made by Alguacil et al. (2011) who sought to determine if better macroeconomic and institutional environments enable countries to efficiently exploit FDI and if the presence of such host nation characteristics promote a favorable environment and provide channels that facilitate growth. Using a sample of developing countries over the period of 1976 to 2005 and GMM estimation, the authors inferred that there are positive effects of FDI on economic growth for low- income nations, taking into account the aforementioned conditional factors.

With the use of OLS, cointegration and Granger causality techniques, Amadi (2019) assessed the connection between capital flows, FDI, and growth as well as the influence of the level of financial development in intensifying the beneficial effects of inflows in Nigeria, over the period 1970 to 2014. In his review, Amadi (2019) noted that unlike other developing middle-income nations, the foreign direct investment attracted by the Nigerian economy is unexceptional and its absorptive capacity of the FDI associated benefits may be restricted by local conditions. The author's findings indicated there is no long- run relationship between FDI and growth (in either direction), however a bi-directional short-run relationship is observed. Furthermore, through OLS, it was found that FDI is significantly and negatively related to economic growth, however when the contingency of stock market capitalisation was taken into account, a positive and significant relationship was found. The same could not be said for the conditional factors such as stock market liquidity and capital account liberalisation. Therefore, Amadi (2019) inferred that the absorption of spillover effects and growth benefits of FDI is largely influenced by stock market size.

A few notable studies similar to that of Amadi (2019), that observed a negative relationship between capital flows and growth, include but are not limited to Van Bon (2019), Agbloyor (2014) and Coulibaly et al., (2018). Contrary to most findings regarding the influence of institutions in the foreign capital flows- growth nexus, Van Bon (2019), via the GMM estimation and Vietnam provinces 2005- 2012 data, found that the influence of the interaction of institutional quality and FDI on growth are significantly negative. Similarly, Agbloyor (2014) observed a negative impact of FDI, portfolio investment and debt flows on economic growth. Economies with more developed financial markets are however able to transform the negative impact to a positive one.

Despite the extensive literature available on the capital inflows and economic growth relationship, this research area remains an area of great interest for many scholars and policy makers. Varying results in support of or contradicting existing theory have been found. Contrary to the expected increase in capital flows, a significant portion of the empirical findings indicate a negative relationship in the context of developing economies. This has in turn provided findings in support of the notions presented by the Lucas paradox, whereby capital does not flow from developed to developing nations as postulated by the Neoclassical theories.

We seek to contribute to existing literature by providing new evidence on the conditional factors influencing the inflows- growth nexus in the context of Sub Saharan Africa which has not been done much. To the best of the author's knowledge, this investigation of capital inflows in SSA has often been represented by FDI whereas we make use of both private capital flows, foreign portfolio investment (FPI) and foreign direct investment (FDI). Similar to methods employed by Slesman et al. (2015), we make use of threshold regression techniques which allow for more flexible interactions between inflows, growth and institutional development. Threshold specification by Hansen (2000) enables us to see the two different types of relationships existing in a single data set. The relationship between flows and growth in a high institutional quality environment could be different from the relationship observed in the regime of low institutional quality. Furthermore, the use of threshold regression also allows for a more realistic parameter heterogeneity which takes care of the common criticism of parameter homogeneity assumption embedded in the linear cross- country regression (Slesman et al., 2015). The next section further explains the methods employed in the study.

3. METHODOLOGY

In order to take into account, the contingent effect of the respective institutional environment on the impact of international capital inflows on economic growth, this study makes use of threshold regression modelling proposed by Hansen (2000). Hansen's threshold regression model permits for an endogenous sample split. The threshold variable in our model is thus institutional infrastructure and our underlying hypothesis postulates that the impact of foreign capital inflows on economic growth is dependent on the economy's institutional environment to some extent. Similar to methods used by Slesman, at al. (2015) and Khoury and Savvides (2006), we estimate the following regressions:

$$G_{it} = a_1 X_{it} + \begin{cases} \beta_1 CAP\ FLOW_i + \varepsilon_i & INS \leq \gamma \\ \beta_2 CAP\ FLOW_{it} + \varepsilon_i & INS > \gamma \end{cases} \quad (1)$$

Where G represents the annual growth rate of GDP per capita for country i, X_i represents regressors such as the population growth rate, government expenditure to GDP ratio and the logarithm of initial income per capita. $CAP\ FLOW_i$ represents private capital flows which include net FDI and FPI inflows. ε_i denotes the error term, which is assumed to be normally distributed. *INS* is used to depict the host- nation's level of institutional development and split the sample into two groups. Lastly, γ represents the threshold level. According to Law, et al.

(2013) this type of regression modelling in equation (1) allows the role played by capital flows in influencing economic growth to differ depending on the economy's institutional development level. More precisely, the relationship is dependent on whether the institutional infrastructure is above or below some level of $\hat{\gamma}$. The impact of foreign capital inflows on growth will thus be estimated by the parameters β_1 and β_2 for economies with weaker or stronger institutions, respectively. Simply put by Slesman (2015), this model allows for parameter heterogeneity.

Following the split of the sample into two sub- groups using the threshold variable *INS,* the sample is divided into low institutional *(INS)* and high institutional regimes depending on the respective institutional development level in comparison to the approximated threshold level, $\hat{\gamma}$. In simpler terms, the low institutional regimes are considered as those with institutional quality that is below the estimated threshold level and the high institutional regimes, those with institutional quality above threshold. In order to determine the estimated threshold level, $\hat{\gamma}$ and estimate the slope parameters, α and β, we experiment by imputing equation (1) with all possible values of γ and $\hat{\gamma}$ is the minimizer of residual sum of squares (RSS) calculated all feasible values of γ (proposed by Hansen, 2000).

Following the estimation of $\hat{\gamma}$, we obtain the slope coefficients α and β as $\hat{\alpha}(\hat{\gamma})$ and $\hat{\beta}(\hat{\gamma})$. The next crucial step is to test for the significance of the threshold, γ. Since the threshold estimate, , γ, is not determined when the hypothesis test " $H_o: \beta_1 = \beta_2$" is conducted, we carry out inferences through a model- based bootstrap method whose validity was established by Hansen (1996). In summary, we first carry out an inference test for threshold effects being present and with the use of our data, we will estimate equation (1) and examine the statistical significance of the two slope coefficients, $\beta_1 \; and \; \beta_2$.

4. DATA AND EMPIRICAL RESULTS

4.1 Data

The study uses cross- sectional data on 13 developing countries in Sub Saharan Africa (SSA), with annual data over the period 1995 to 2019. The sample period and selected countries were informed by data availability on international capital inflows and the chosen countries'

respective institutional qualities. Appendix A provides a brief description of the selected Sub Sahara African countries studied. In order to control the effect of capital inflows (*FDI* and *FPI*) on economic growth (*growth rate of GDP per capita*), we make use of the following explanatory variables: population growth rate, log of initial income, average years of secondary schooling, real government expenditure and real investment to GDP ratios. The data used in the study is shown in Appendix B, along with the relevant sources. Also shown in the Appendices are the descriptive statistics of the variables employed in our model (Appendix C).

In order to represent foreign capital inflows, we make use of two different sources in our analysis, namely: foreign direct investment (FDI) net inflow and foreign portfolio investment inflows. These two types of capital flows were of particular interest as they have become an important source of investment in many developing economies, since 1990 (United Nations, 2011). According to Reisen and Soto (2001) developing countries should encourage foreign portfolio and foreign direct investments in order to stimulate long run economic growth prospects. After obtaining the capital flows data, all variables are conveyed as a fraction of real gross domestic product (GDP) in constant 2010 USD (US dollars) and thus converted.

Similar to Chitambara (2019) and Zghidi (2018), we make use of two different indices in measuring the institutional development qualities, namely the freedom rating extracted from the data on civil and political rights from Freedom House and the economic freedom (EF) index constructed by Fraser Institute. Unlike the freedom rating measure, the EF index has been widely used in research. Both indices range from 0 to 10, where 0 represents a very weak institution and 10, a very strong institution (Slesman, 2015). The economic freedom (EF) index comprises of five indices, that is, legal structure and property rights, regulation size of government, freedom to international trade, easy access to sound money and regulation of credit, business, labor and credit regulations.

4.2 Results

Table 1 and 2 below present the main results obtained from the estimation using institutional quality to index non- linear effects of foreign capital inflows on economic growth. The threshold variable, *INS*, splits the sample into two. As illustrated below, the estimated threshold level for the Economic Freedom index is 4.55. Economies that exceed the determined threshold level, that is, above 4.55, are considered as high *INS* regimes and conversely, those that fall

below the threshold level are characterized as low *INS* regimes. In order to evaluate the statistical significance of the threshold estimate we use the p-value obtained using the bootstrap method with 10% trimming percentage and 1000 replications. Using the p- value rejection rule, we find that the estimated threshold value is significant at the 5% significance level, since the bootstrap p- value of 0.000 is less than 0.05. The hypothesis of no threshold effect is rejected.

Table 1: Threshold Regression (1990- 2010)

Threshold Variable (INS): EF.			MODEL 1	
	Coefficient	P-value	Standard Error	t- test
FDI/GDP	0.17091	0.035	.0246162	0.07
FPI/GDP	-0.45144	0.041	.0065375	-0.69
Log of initial income	89.01664	0.000	.9345281	95.25
EXP/GDP	-0.0145985	0.184	.0109434	-1.33
Human Capital	0.568724	0.002	.1815118	-3.13
INV/GDP	0.0076725	0.371	.0085672	0.90
Population growth Rate	-1.221597	0.000	.0469399	-26.02
FDI/GDP				
LOW INS (EF $\leq \gamma$)	-0.6831136	0.001	.209692	3.26
HIGH INS (EF > γ)	0.2071064	0.042	.1014784	2.04
Threshold estimate	4.5500			
LM- test for no threshold	3.27			
Bootstrap p- value	0.000			
Low- institution countries	5			
High- institution countries	7			

Source: Author's calculations

Table 2: Threshold Regression (1990- 2010)

Threshold Variable (INS): EF.			MODEL 2	
	Coefficient	P-value	Standard Error	t- test
Log of initial income	89.01664	0.000	0.9345281	95.25
EXP/GDP	-0.0145985	0.184	0.0109434	-1.33

Human Capital	0.568724	0.002	0.1815118	-3.13
INV/GDP	0.0076725	0.371	0.0085672	0.90
Population growth Rate	-1.221597	0.000	0.0469399	-26.02
FPI/GDP				
LOW INS (EF $\leq \gamma$)	-0.7231136	0.003	0.209692	3.26
HIGH INS (EF > γ)	0.2591064	0.021	0.1014784	2.04
Threshold estimate	4.5500			
LM- test for no threshold	5.49			
Bootstrap p- value	0.000			
Low- institution countries	5			
High- institution countries	7			

Source: Author's calculations

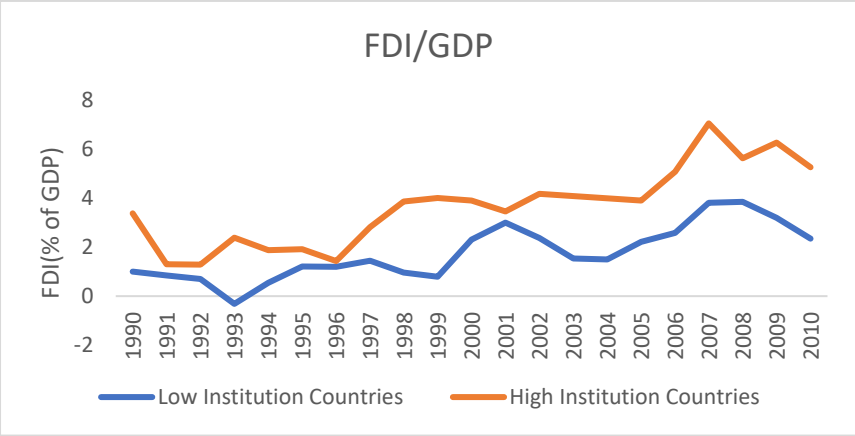
The coefficients for foreign direct investment as a percentage of GDP and portfolio invest as a percentage of GDP are both positive ($\beta_1 = 0.2071064$ and $\beta_2 = 0.2591064$ respectively) and significant in explaining the variations in economic growth in the context of the countries characterized by high institutional quality. More precisely, a 1% increase in FDI/GDP or FPI/GDP will lead to 0.2% and 0.26% increase in growth respectively. The opposite is true for economies in the low institution regime where both private capital flows have a negative (($\beta_1 = -0.6831136$ and $\beta_2 = -0.7231136$) and significant impact on growth. A 1% increase in FPI/GDP leads to a 0.68 or 0.72% decline in economic growth. This suggests that the impact of private capital inflows on economic growth is non- linear and only "kicks in" after the relative institutional quality has surpassed the estimated threshold level.

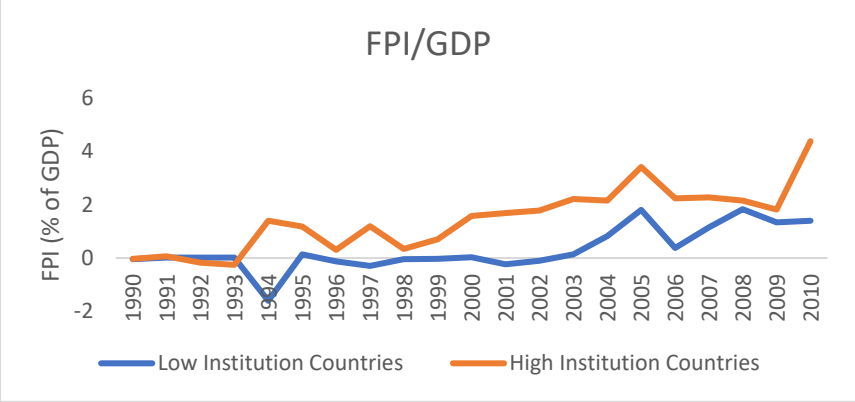
These findings are in line with a few notable studies (see Alfaro et al., 2008; Papaioannou, 2009 and Slesman et al., 2015) in suggesting that recipient nations require some level of institutional absorptive capacities prior to their ability to accrue any welfare gains from international capital inflows. Placing a particular focus on the economic freedom index as the threshold variable, we observe that majority of nations well exceed the estimated threshold level of 4.55. The countries that have exceeded the threshold level appear to be mostly among the middle income developing economies. Nations with low institutional environments, in comparison with those with higher institutional quality, seem to have less foreign capital inflows, see figure 1 below. Generally, low institutional environments tend to deter private

capital inflows whereas countries with higher institutional development attract foreign capital inflows (Papaioannou, 2009).

Additionally, the control variables, initial income and human capital are positively and significantly related to economic growth. Population growth is negatively and significantly related to growth; however, investment and government expenditure rations are insignificant in explaining variations in growth, with negative and positive relationships respectively. We make use of the p- values to test for the significance of the variables in explaining movements in economic growth, at 5% level of significance.

Figure 1: SSA Private Capital Inflows





5. CONCLUSION

In this study, we sought to provide new evidence on the role played by institutional infrastructure in realizing the effects of capital inflows on economic growth, using annual data over the period 1990 to 2010 in the context of Sub Saharan Africa. In order to achieve this, we made use of threshold specification developed by Hansen (2000).This allowed us to see the two different types of relationships that could possibly exist in a single data set and observe

the different relationships within different regimes, that is, low institutional regime and high institutional regime. Similar to various studies such as Amadi (2019), Azman- Saini (2010), we found that, in the case of the lower- upper income developing countries studied, the countries with higher institutional quality exhibited positive and significant relationships between both private capital inflows and economic growth. It has been suggested that the high institutional environment provides the respective economies with the sufficient absorptive capacities to enable them to exploit the capital flows growth benefits. On the other hand, we found that low institutional countries exhibited negative and significant relationships. This was largely attributed to the fact that low institutions do not allow the respective countries to absorb the said benefits and in turn enhance economic growth.

The results obtained indicated that the impact of capital inflows on economic growth is positive and significant once a certain threshold level of institutional quality has been surpassed. At any point beneath that threshold level, the flows- growth relationship appears to not existent. These results support the notion of the capital inflows and growth relationship being contingent on the level of institutional development in an economy. Furthermore, it was established that low institution countries generally deter capital inflows. Poor institution factors such as the lack of property rights, lack of freedom, bad political behavior and much more are not attractive to potential foreign investors. Conversely, strong institutions greatly attract private capital inflows such as FDI. Therefore, this study provides vital policy implications for policy makers and government in ensuring the improvement of a country's institutional environment with the purpose of enhancing economic growth through capital flows. In order to start attracting international capital inflows, it is essential for governments to simply put some new institutional infrastructure in place. For example, they could improve the protection of property rights, make sound money much more easily accessible and create an environment with freedom to trade globally.

References

Adams, S. and Klobodu, E.K.M., 2018. Capital flows and economic growth revisited: Evidence from five Sub-Saharan African countries. *International Review of Applied Economics*, *32*(5), pp.620-640.

Agbloyor, E.K., Abor, J.Y., Adjasi, C.K.D. and Yawson, A., 2014. Private capital flows and economic growth in Africa: The role of domestic financial markets. *Journal of International Financial Markets, Institutions and Money*, *30*, pp.137-152.

Agbloyor, E.K., Gyeke-Dako, A., Kuipo, R. and Abor, J.Y., 2016. Foreign direct investment and economic growth in SSA: The role of institutions. *Thunderbird International Business Review*, *58*(5), pp.479-497.

Aizenman, J., Jinjarak, Y. and Park, D., 2013. Capital flows and economic growth in the era of financial integration and crisis, 1990–2010. *Open Economies Review*, *24*(3), pp.371-396.

Alguacil, M., Cuadros, A. and Orts, V., 2011. Inward FDI and growth: The role of macroeconomic and institutional environment. *Journal of Policy Modeling*, *33*(3), pp.481-496.

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

Alfaro, L., Kalemli-Ozcan, S. and Volosovych, V., 2008. Why doesn't capital flow from rich to poor countries? An empirical investigation. *The review of economics and statistics*, *90*(2), pp.347-368.

Amadi, C., 2019. *FDI and economic growth in Nigeria: an analysis of the role of financial development on linkages*(Doctoral dissertation, Manchester Metropolitan University).

Azman-Saini, W.N.W. and Law, S.H., 2010. FDI and economic growth: New evidence on the role of financial markets. *Economics letters*, *107*(2), pp.211-213.

Chitambara, P., 2019. Remittances, institutions and growth in Africa. *International Migration*, *57*(5), pp.56-70.

Coulibaly, S.S., Gakpa, L.L. and Soumaré, I., 2018. The Role of Property Rights in the Relationship between Capital Flows and Economic Growth in SSA: Do Natural Resources Endowment and Country Income Level Matter?. *African Development Review*, *30*(1), pp.112-130.

El Khoury, A.C. and Savvides, A., 2006. Openness in services trade and economic growth. *Economics Letters*, *92*(2), pp.277-283.

Hansen, B.E., 2000. Sample splitting and threshold estimation. *Econometrica*, *68*(3), pp.575-603.

Klobodu, E.K.M. and Adams, S., 2016. Capital flows and economic growth in Ghana. *Journal of African Business*, *17*(3), pp.291-307.

Knezevic, M., Some Models of Economic Growth and Capital Accumulation.

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

Okafor, I.G., Ugochukwu, U.S. and Chijindu, E.H., 2016. Foreign capital inflows and Nigerian economic growth nexus: A Toda Yamamoto approach. *European Journal of Accounting, Auditing and Finance Research*, *4*(3), pp.16-26.

Philip R. Lane and Gian Maria Milesi- Ferretti (2017), "International Financial Integration in the Aftermath of the Global Financial Crisis," IMF Working Paper 17/115

Reisen, H. and Soto, M., 2001. Which types of capital inflows foster developing-country growth?. *International finance*, *4*(1), pp.1-14.

Romer, P., 1993. Idea gaps and object gaps in economic development. *Journal of monetary economics*, *32*(3), pp.543-573.

Shen, C.H., Lee, C.C. and Lee, C.C., 2010. What makes international capital flows promote economic growth? An international cross-country analysis. *Scottish Journal of Political Economy*, *57*(5), pp.515-546.

Slesman, L., Baharumshah, A.Z. and Wohar, M.E., 2015. Capital inflows and economic growth: Does the role of institutions matter?. *International Journal of Finance & Economics*, *20*(3), pp.253-275.

United Nations, 2011. *Towards human resilience: Sustaining MDG progress in an age of economic uncertainty*. United Nations Publications.

Van Bon, N., 2019. The role of institutional quality in the relationship between FDI and economic growth in vietnam: Empirical evidence from provincial data. *The Singapore Economic Review*, *64*(03), pp.601-623.

Zghidi, N., Sghaier, I.M. and Abida, Z., 2018. Remittances, institutions, and economic growth in North African countries. *Journal of the Knowledge Economy*, *9*(3), pp.804-821.

APPENDICES

Appendix A. SSA Developing Countries used in the paper

Upper income Countries	Low income countries	Middle- income countries
Mauritius	Burundi	Zambia
South Africa	Gambia	
Botswana	Kenya	
Namibia	Lesotho	

	Seychelles
	Rwanda

Source: World bank, 2020

Appendix B. Variables used and data sources

Variables	Abbreviation	Sources
GDP per capita growth (%)	G	*World Bank*
Real investment to GDP ratio	INV/GDP	*Thomson Reuters*
Real government expenditure to GDP ratio	EXP/GDP	*Thomson Reuters*
Initial income	I	*World Bank*
FDI/GDP	FDI/GDP	*World Bank*
Portfolio Investment	FPI/GDP	*World Bank*
Average years schooling	HumanCap	*World Bank*
Economic freedom index	EF	*Fraiser Institute*

Appendix C. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
G	252	1.43489	5.38129	-47.50332	37.53553
FPIGDP	252	1.406589	8.77317	-23.13144	98.1863
FDIGDP	252	2.71515	3.453887	-6.89768	19.8551
HumanCap	252	5.865079	0.8778203	5	8
Popgrowthrate	252	2.012125	1.490628	-6.766223	8.117928
EXP/GDP	252	29.36548	10.75325	8.595	63.721
INV/GDP	252	24.39881	10.99602	4.562	65.667
InitialIncome	252	0.0326969	0.0632161	-0.6981201	0.3017635
EF	252	5.785635	1.150006	2.97	8