

Foreign Capital Inflows and Financial Development; Does Institutional Quality Matter in this Nexus, the Context of Sub-Saharan Africa

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Abstract:

Every successful economy is supported by a sound, stable and resilient financial system which aligns with the neoclassical view that financial sector precedes and induces real growth by channeling scarce resources from small savers to large investors. As such financial development is a concern to most societies especially SSA where its financial system remains weak as compared to their counterparts. This study therefore sought to investigate whether institutional quality matters in the nexus between foreign capital inflows and financial development of SSA countries. This study adopts a panel research design using panel data. Due to issues of cross-sectional heterogeneity and dependence, we employ the two-step system GMM estimation technique which accounts for cross sectional heterogeneity and dependence and the robustness was check with the help of 2SLS. The results indicate that FDI and FPI have negative effects on financial development whereas remittances have a positive effect on financial development. When financial development is disaggregated, remittances flow is set to have a significant positive effect on financial development in financial institutions whereas foreign direct investment and portfolio investment are said to have a negative and significant effect on financial development in financial markets. When the indirect effect regressions are carried out by interacting institutional quality composite indicator with measures of foreign capital inflows, the following results are obtained. Firstly, measures of foreign capital inflows interact with institutional quality index producing a negative net effect for foreign direct investment (FDI), positive net effect for foreign portfolio investment (FPI), and positive net effect for remittances, up to institutional quality index threshold estimates of 0.530, 0.543 and 0.440 respectively when these net effects is nullified. To maximize the benefits of foreign capital inflows on financial development, there is a need to improve institutional quality through strengthening governance, reducing corruption, improving regulatory frameworks, and ensuring transparency. Foreign capital inflows need to be encouraged in a way that maximize positive spill overs to financial sector, such as through partnerships with local firms, training programs, and technological transfers that enhance financial development.

Keywords: Foreign Capital Inflows, Financial Development, Institutional Quality

1. Introduction

The financial system has a pride of place in an economy due to its ability to accelerate growth through its allocation function. In this regard, the development of this sector is necessary not only for financing of the economy but also to eliminate market friction plaguing the financial landscape. The necessity of financial development originated from the debate between the supply-leading and demand-following hypothesis. Emanating from the seminal paper of Bagehot (1873) who posited that a robust financial sector was a precondition for a nation's successful industrialization.

Joseph Schumpeter (1912) building on this notion argued that a well-functioning financial system serves as the lifeblood of the real sector, enhancing growth and ultimately leading to economic expansion. This view is regarded as the supply-leading phenomenon response which is the viewpoint of the neoclassical economists. The financial sector precedes and induces real growth by channeling scarce resources from small savers to large investors according to the relative rate of return (Jung, 1986). This view welcomed supports from scholars such as McKinnon (1973), Shaw (1973), and King and Levine (1993).

While the development of the financial system across the globe is at the center of policy effort including that of Sub-Saharan Africa (SSA), yet the development level in SSA is not strong enough to sustain growth needed to enhance the wellbeing of the population. This is owing to the saving-investment gap which is a fundamental challenge to developing countries. Extant literature has suggested that foreign capital inflows supplement domestic savings and bridge this gap (Jilenga, Xu & Gondje-Dacka, 2016; Hunt, 2007; Agosin and Machado, 2005). Moreover, capital inflows are seen as an important driver through which growth problems can be addressed (Agbloyor *et al.*, 2014). They broaden and deepen the financial market and institutions, enhancing liquidity, facilitating the transfer of technology and management expertise, and creating new job opportunities (Adams, 2009; Anetor, 2019). However, opponent of foreign capital inflows argue that they could have negative effect on an economy due to the fact that they can lead to inflationary pressure, expose an economy to external shocks and limit the effectiveness of domestic policy instruments (Baharumshah and Thanoon, 2006; Berument and Dincer, 2004). This therefore generates a debate on the significance of these inflows in an economy.

According to the MacDougall-Kemp Hypothesis, in a two-country world, where one economy is an investing economy and the other a host economy, capital will freely move from a capital abundant country to a capital scarce country only when the price of capital being equal to its marginal productivity. This theory emphasizes that capital will flow from rich economies to capital scarce economies but statistics does not tie given that developing societies receives the least in terms of foreign capital inflows. For example, in 2022 a total inflow of FDI in the world stood at \$1,831.17 billion, OECD members, East Asia & Pacific, North America, European Union, Euro Area, Latin America and Caribbean, South Asia, and SSA recorded \$1,112.33 billion, \$644.67 billion, \$404.87 billion, \$403.24 billion, \$274.67 billion, \$215.02 billion, \$53.61 billion and \$7.15 billion respectively. The figures clearly show that SSA has the least and very low value casting doubt on its implication on the financial development of SSA countries couple with the fact that these figures are relatively unstable over the years.

The lowest foreign capital inflows in developing economies especially SSA therefore draw our attention to the nature of institutions whereby institutional quality seems to matter for the inflow of capital. Though recent wave of literature has claimed that foreign capital inflows and institutional quality matter for financial development, statistics reveal that there are still unclear movements on the link between foreign capital flows, institutional quality and financial development. For instance, statistics reveal that in 2020, extra-EU foreign direct investment (FDI) relative to GDP was lower for inward flows (0.8%) than for outward flows (2.2%), while financial development in terms of domestic credit to private sector (% of GDP) in European Union was reported at 92.56 % in 2020 (WDI, 2021).

Inclusive and sustainable economic development requires finance for the investment that underpins its fundamental processes which are capital formation and productivity improvement (Tyson, 2021). Mobilizing that needs domestic financial systems that provide both the right quantity and quality of finance. Moreover, growing competition for economic resilience and progress has been at center since the liberalization of

international borders and deregulations of financial markets to ease the free movement of goods, services, and financial resources. To achieve this goal, the governments and other organisations are focused on improving their financial architecture as it is the engine that drive and guarantee a resilience economy. That is why there is growing literature that justifies that financial development lead to a positive and significant effect on the economic growth of a country (Beck et al., 2014; Chavula et al., 2017). However, the shallow and weak state of financial institutions and financial markets of Sub-Saharan African economies raise doubt on the competitive strength of this region in meeting its growth prospects given that the financial system expedite investment through the allocation of financial resources to productive units.

To catch-up with the shortage saving-investment gap, SSA countries need to seek external funding so as to bridge this gap. The presence of foreign capital inflows plays a crucial role to host economies as they come along with improved management expertise, new technology, and increased job opportunities for the local population, these can be seen as a solution to bridge the gap of financial sector inaccessibility and inefficiency. It is noted that the region does get a lot of foreign capital transfers in the form of ODA, remittances from migrants, and foreign direct investment. Institutional quality plays a major role in attracting foreign capital inflows in the host nations as it guarantees investors' confidence, yet SSA Africa is characterized by poor institutional quality. It is on the basis of this that this study set to investigate whether institutional quality matters in the link between foreign capital inflows and financial development of SSA countries.

This study is relevant given that it adds value to the empirical literature in the context of Sub-Saharan Africa. It is also observed that most of the studies used auto-regressive distribution lag model (ARDL) technique. However, this study adopts a more dynamic model which is the generalized method of moments model (SGMM). It is also noticed that SSA is also lagging in most existing studies with studies centered on emerging and developed countries. This study comes in to fill the area gap by focusing on SSA to also establish the link that exist between these elements.

This study is organized into five sections which include; the introduction in section I, review of literature in section II, the empirical strategy and data presentation in section III, the empirical findings are presented and discussed in section IV, and the conclusion and policy recommendation is in section V. The first section has already been established and the other sections will proceed.

2. Literature Review

On the empirical front, numerous studies have examined the link between foreign capital inflows and financial development. For instance, Ahmed et al. (2022) used autoregressive distribution lag (ARDL) model to study the effect of capital inflow proxies on Bangladesh's financial development. The study reveals that foreign direct investment and remittance flow do not indicate a significant relationship with financial development in the long-run meanwhile foreign aid indicates a link with the financial progress of Bangladesh. In another strand of literature, Keho (2020) conducted a study on the impact of remittances on financial development in some selected West African countries over a time horizon from 1980 – 2017. The CIPS unit root test was used which takes care of both cross-sectional dependency and heterogeneity. Moreover, the long-run relationships were examined using common correlated effects mean group (CCEMG) estimator. The findings indicate that remittance inflows reduce domestic credit to private meanwhile they contribute to enhance money supply in the long-run. The country level findings reveal considerable heterogeneity across countries. Agyapong (2019) investigated the role external debt and foreign direct investment play in influencing financial development in Africa. Data ranging from 2002-2015 were analyzed within causal research design and the dynamic panel using generalized method of moment estimation approach. His research shows that external debt and foreign direct investment have significant positive relationship with financial development in African economies.

Duba, (2022) researched on the impact of foreign capital inflows and property rights on financial development in SSA. His study used system generalized method of moments empirical model to analyze data between 2000 to 2020. The study indicates that there is a short-run and long-run relationship between financial development and property right index but not with foreign capital inflows. The results highlight that lag of financial development, property right and political stability exerts a positive and substantial effect on financial

development of SSA in short run and long run. Islam, Khan, Popp, Sroka, and Oláh (2020) investigated the financial development and FDI nexus using institutional quality as a moderator. The research sample consists of 79 Belt and Road Initiative (BRI) partner countries for a period ranging from 1999 to 2017. The study employed a pooled ordinary least square (POLS), fixed effect, and random effect modeling to analyse the data. The empirical findings of conventional and robust estimators indicate that financial development of BRI host countries significantly attracts foreign direct investment, whereas the institutional quality plays an essential and significant moderating role in this nexus. Following the in-depth analysis, financial markets are less attractive to foreign direct investment compared to financial institutions.

Moreover, Aibai et al. (2019), carried out a study on foreign direct investment, institutional quality and financial development along the Belt and Road. Employing data from 50 countries joining the Belt and Road Initiative, for the period from 1989 to 2011, all specifications were estimated using a fixed effect estimator. The results indicate that FDI can significantly improve the development of financial sector, especially the development of financial markets. FDI was found to be a stronger driver of financial development for countries with higher quality institutions. Moreover, FDI not only increases financial deepening, but also enhances financial function.

3. Econometric Strategy

Empirical Model Specification

The main objective of this study was to examine if institutional quality matters in the link between foreign capital inflows and financial development in the context of SSA. This study used panel data multiple regression model to ascertain this objective. The benefit of panel model includes the following; it eliminates bias from the calculated coefficient by separating country-specific effects unobserved and time-fixed effects from the error term in a panel model (Wooldridge, 2012). Panel data model can model both the common and individual behavior of groups and it contains more information, more variability, and more efficiency than pure time series or cross-sectional data models.

Inspired by the empirical model of Asongu et al. (2018), and Nchofoung & Asongu, (2021), this adopts the following model as specified below:

The functional model goes as follows

$$FD_{it} = f(FCI_{it}, IQ_{it}, X_{it}) \dots \dots \dots \text{eqn(1)}$$

This leads us to the following empirical model:

$$FD_{it} = \alpha + \beta_i \ln FCI_{it} + \lambda_i IQ_{it} + \rho_i \ln X_{it} + \eta_i + \varepsilon_{it} \dots \dots \text{eqn(2)}$$

Where FD_{it} represent financial development, $\ln FCI_{it}$ the log of foreign capital inflows variables, IQ_{it} is the institutional quality index, $\ln X_{it}$ is the log of control variables except for those in ratios or percentages. The control variables include; trade openness (OPEN), GDPPC, natural resource rent (NRR), inflation (Infl) etc, it is country i at time t .

It has been observed in the literature that to capture the moderating effect is to create an interactive term of the subject variables (Aibai et al., 2019, Agbloyor et al., 2014). Specifically, we include interaction terms in the regression so that the estimation equation becomes:

$$FD_{it} = \alpha + \beta_i \ln FCI_{it} + \lambda_i IQ_{it} + \rho_i \ln X_{it} + \delta (FCI_{it} * IQ) + \eta_i + \varepsilon_{it} \dots \dots \text{eqn(3)}$$

Where IQ is the interaction variable which is a measure of institutional quality (IQ). Then the interactive term permits us to assess and understand whether foreign capital inflow has a stronger effect on financial development in countries with higher levels of institutional quality than it does in countries with weak institutional quality. β and λ are the direct effect coefficients whereas δ is the indirect effect coefficients.

Specifically, we can determine this effect by evaluating the following partial derivative;

$$\frac{\partial FD}{\partial FCI} = \beta_i + \delta(Z) \dots \dots \dots \text{eqn(4)}$$

As such, a positive value for δ (i.e., $\delta > 0$), will imply that foreign capital inflow has a greater positive effect on financial development in countries with higher levels of institutional quality. Depending on the signs and

significance of the direct and indirect coefficients, we can subsequently notice a net effect, in this regard, equation (4) is specified further as

$$FD_{it} = \alpha + \beta_i FCI_{it} + \lambda_i IQ_{it} + \rho_i X_{it} + \delta(FCI_{it} * M) + (\beta_i + (\gamma * \delta) + \eta_i + \varepsilon_{it} \dots \dots \text{eqn(5)}$$

Here, equation (5) can only hold with the condition that β_i and δ are opposing in signs and are both significant. Where γ is the average of the interaction variable. If the above conditions are fulfilled, then there exists a threshold effect for the interaction variable expected for the net effect to be nullified. This can be achieved by equating equation (4) to zero.

$$\text{Threshold (institutional quality)} = \frac{\beta_i}{\delta} \dots \dots \dots \text{eqn (6)}$$

When we obtain values in eqn (6) and the computed values are not within the range of values of the interaction variable, then this threshold is not evident, and as such, it is worthless computing in such a case.

Dependent Variables

The measure of financial development was drawn from the financial development index by Sahay et al. (2015b). This index measures financial development made up of data captured from different financial development parameters for a variety of financial agents (Sviryzdenka, 2016). We used this index constructed using three-step approach observed in the literature on reducing multi-facet data into one summary index which follows the order; normalization of variables; aggregation of normalized variables into the sub-indices showing a particular functioning dimension; and aggregation of the sub-indices into the final index

Independent Variables

The explanatory variables of interest are foreign capital inflow variables (foreign direct investment, foreign portfolio investment, and workers remittances). These capital flows chosen are private because they are effectively utilized than official flows leading to a trickle-down effect.

Interactive variable

Even though, the effect of foreign capital indicators on financial development are mixed, countries with good and well-functional institutions or regulatory environment wherein there is property right, contract enforcement, legal right, and ease of doing business, are expected to be better at unlocking the potential for foreign capital inflows to enhancing financial development. Empirical findings have revealed that quality institutions facilitate foreign investments whereas weaker institutions are hinderance to investments as whole (Agyemang et al., 2016; Al-Smadi, 2018; Das, 2014). Moreover, Su et al. (2021) suggested that strong institutions provide fundamental rights to investors in an environment where they can protect the returns from their investments. Therefore, we expect the interaction terms to be significantly negative. This indicates that foreign capital inflows will have a negative effect on financial development when there exists weak institutional quality, and a positive effect on financial development when there is higher institutional quality.

Control variables

To ensure that no important variable that is capable of influencing financial development was left out, the study included conditioning information set into the empirical model. This study controlled for inflation because it leads to changes in the saving behavior of the public with direct impact on financial development. Inflation measures macroeconomic stability of a country (Aibai et al., 2019, Otchere et al., 2016, Soumaré et Tchana, 2015). According to Fan et al. (2019), trade openness which is the sum of imports and exports divided by given country's gross domestic product plays a significant role in financial development. A nation open to cross border trade is expected to have foreign and domestic investors thereby increasing the number of transactions in financial institutions and markets. The growth rate of population captures the labor force and demonstrates that active population accelerates financial development through active participation in investments by borrowing from financial infrastructures. Real gross domestic product per capital is the proxy for the income level of citizens (Nkoa, 2018) and as such a higher purchasing power indicates increased transactions in financial infrastructures. Domestic investment which is a measure of gross domestic fixed capital formation. Natural resource rent is also controlled.

Data

This study used annual data from 1995 to 2020 across 43 SSA countries giving a total data point of about 1161. The countries and the periodicity were chosen on the basis of data availability at the time the study was

conducted. Moreover, 1995 was a period within which financial sector reforms took place in eight developing countries which includes Argentina, Bulgaria, Ecuador, Egypt, India, Kenya, Tanzania, and Uganda with objectives to improve monetary control, efficiency of financial intermediation, as well as the safety and soundness of the financial system. Data was drawn from different sources. Financial development is the broad-based indicator of financial development in terms of depth, access, and efficiency in both financial institutions and financial markets (Svirydzenka, 2016; Sahay et al., 2015). The information is obtained from the IMF Financial Development data set, which comprises of information from the World Bank FinStats, IMF's Financial Access Survey, Bank for international settlement (BIS) debt securities database, and Dealogic corporate debt database. Data for foreign capital inflow variables were obtained from the World Development Indicator (WDI). Furthermore, data for control variables are also obtained from World Development Indicators (WDI) Meanwhile data for institutional quality was drawn from the World Governance Indicators (WGI).

It is always essential to check the quality of the data and this was done with help of descriptive statistics wherein we examine the means, standard deviations, and the bounds of the variables which are represented by the minimum and the maximum values to know if the variables are well behaved or not. Table 1 below reports the summary statistics for financial development indices, foreign capital inflows, composite index for institutional quality and some control variables. Results.

Trend Analysis of Variables

Trends present important information on the behaviour of variables over time. We begin by studying the behaviour of the variables over time in terms of trends of financial development both aggregated and disaggregated. The trends of the variables are depicted in the section that follows.

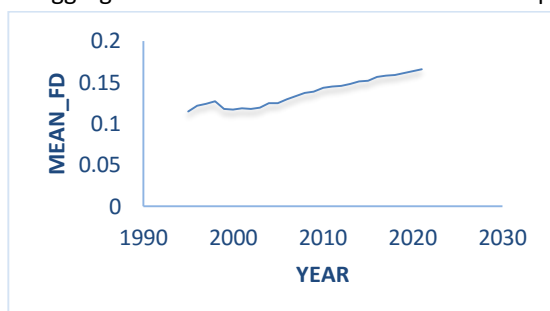


Figure 1: Trend of Financial Development Index in Sub-Sahara Africa

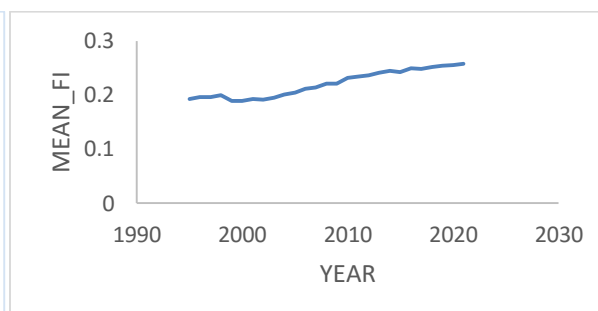


Figure 2: Trend of Financial Development in Financial Institutions in Sub-Sahara Africa

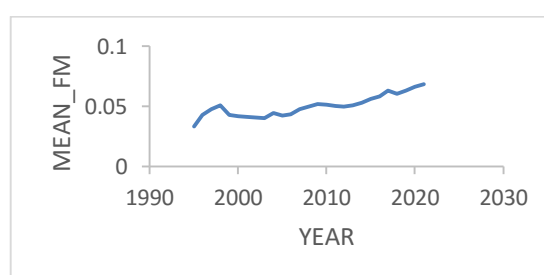


Figure 3: Trend of Financial Development in Financial Markets in Sub-Sahara Africa

Figure 1 illustrates the trend of the Financial Development Index (FDI) in Sub-Saharan Africa from 1995 to 2021. The graph features a line chart with the x-axis representing the years and the y-axis indicating the mean FDI values. Starting at approximately 0.114 in 1995, the index shows a fluctuating yet generally upward trend over the years, with noticeable variations around the early 2000s. After this period, the index stabilizes and steadily rises, reaching around 0.165 by 2020. This upward trajectory indicates significant advancements in financial development within the region over the 25-year span, suggesting improvements in financial

infrastructure, accessibility, and overall economic conditions. The gradual increase in the financial development reflects broader economic growth and the strengthening of financial systems in Sub-Saharan Africa, highlighting the region's evolving financial landscape.

Figure 2 depicts the trend of financial development in financial institutions within Sub-Saharan Africa from 1995 to 2021. The graph begins around 0.1924 in 1995, with some fluctuations in the initial years. However, from the early 2000s onward, there is a marked upward trend. By 2020, the index reaches approximately 0.257, demonstrating significant growth over the 25-year period. This consistent increase suggests substantial improvements in the capacity, efficiency, and outreach of financial institutions in the region, reflecting enhanced financial services, regulatory frameworks, and overall stability. The data indicates a positive trajectory in financial institutional development, contributing to economic resilience and greater financial inclusion across Sub-Saharan Africa.

Figure 3 illustrates the trend of financial development in financial markets in Sub-Saharan Africa from 1995 to 2021. The graph starts around 0.033 in 1995, with some fluctuations observed in the early years. A notable increase begins in the early 2000s, with the index gradually rising and reaching approximately 0.069 by 2021. This upward trend suggests improvements in the functioning and depth of financial markets within the region, indicating better access to capital, increased trading activities, and enhanced market infrastructure. The fluctuations in the earlier years may reflect challenges in market development, but the overall trajectory indicates a positive shift, highlighting the growing importance of financial markets in supporting economic growth and development in Sub-Saharan Africa. The increasing mean_fm suggests a strengthening of market mechanisms and a greater role of financial markets in the region's economy.

Summary Statistics

The specific objective at this junction is to examine the effect of foreign capital inflows on financial development of SSA countries and also if institutional quality matters in this link. These results are adapted from Akum et al. (2024). For us to do this, we must check the quality of the variables with the use of descriptive statistics wherein we examine the means, standard deviations, and the bounds of the variables which are represented by the minimum and the maximum to see if the variables are well behaved or not. Table 1 reports the summary statistics for financial development indices, foreign capital inflows, institutional quality composite index and some control variables. Results from the table shows that on average, financial development, financial institutions development, and financial markets development record 0.13753, 0.22077, and 0.05009 respectively in SSA. The results indicate that financial institutions record an average greater than financial markets which implies that SSA economies are practically financial institutions inclined as compared to financial markets. Even though the standard deviations are closer to the mean but high range scores further explain that some few economies' financial systems are more advanced than others especially those of the middle income countries. With regards to the global scale, the mean value of financial development in SSA countries is far below the global average of other regions such as MENA, and Asia.

Table 1: Descriptive Results on the Effect of Foreign Capital Inflows on Financial Development of SSA Countries

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|-------------|-------|----------|-----------|-----------|----------|
| FD | 1,161 | .1375252 | .1081935 | .0173309 | .679041 |
| FI | 1,161 | .2207667 | .1315932 | .0316249 | .7397121 |
| FM | 1,161 | .050094 | .0974302 | 0 | .6028427 |
| LFDI | 1,051 | 18.74927 | 2.160084 | 9.706248 | 23.02867 |
| LFPI | 1,161 | 15.28397 | 3.609806 | 7.578061 | 55.66472 |
| LREM | 1,161 | 18.32452 | 1.973155 | 9.347575 | 23.9142 |
| NormlQindex | 1,161 | .4857848 | .2016384 | 0 | 1 |
| INFL | 1,053 | 17.21384 | 155.6171 | -9.616154 | 4145.106 |
| LGDPCC | 1,147 | 6.872927 | 1.106462 | 4.630818 | 10.04075 |
| LGKF | 1,060 | 21.12823 | 1.686816 | 14.48867 | 25.56815 |
| NRR | 1,099 | 11.28293 | 11.20031 | .0011713 | 62.03992 |

| | | | | | |
|------|-------|----------|----------|-----------|----------|
| POPG | 1,152 | 2.519452 | .9727692 | -2.628656 | 8.117947 |
| OPEN | 1,093 | .7015382 | .3699515 | .0749815 | 3.113541 |

Note: The Descriptive Results is computed with data taken from World Bank FinStats, IMF's Financial Access Survey, Bank for international settlement (BIS) debt securities database, and Dealogic corporate debt database, World Development Indicator (WDI), World Development Indicators (WDI), World Governance Indicators (WGI).

Where we denote FD = Financial development, FI = financial institution development, FM= financial market development, LFDI = log of foreign direct investment, LFP = Log of foreign portfolio investment, LREM= log of remittances, NormIQindex= normalised value of institutional quality index, INFL= inflation rate, LGDPPC= log of gross domestic product per capita, LGKF =log of gross capital formation, NRR= natural resource rent, POPG= population growth rate, OPEN= openness of the economy.

Given that institutional quality has many measures, we used the measures suggested by Kaufmann, Kray, and Mastruzzi (2021) whereby we constructed a principal component analysis. These measures include; voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. On average, there is an institutional quality index of 0.4858 with standard deviation of 0.20164. Moreover, on average the values of foreign capital inflows captured in terms of foreign direct investment, foreign portfolio investment, personal remittances are 18.74927, 15.28397 and 18.32452 respectively. It can be noted that foreign direct investment has the highest average inflows followed by personal remittances and then foreign portfolio investment in to Sub-Saharan African countries. This statistic conforms with literature which reveals that personal remittances is the second major flows after FDI in SSA. The statistical table also reveals that the variables have standard deviation relatively high implying some economies receive higher capital inflows than others. This is confirmed by high range values indicate.

The control variables which include; inflation rate, gross domestic product per capital, gross capital formation, natural resource rent, population growth rate, and the openness of the economy of SSA economies on average have values of 17.2138 per cent, 6.8729 per cent, 21.1282 per cent, 11.2829 per cent, 2.5195 per cent, and 0.70154 per cent respectively. However, none of the variables presents standard deviations that are greater than their mean values. As such, the variables are well behaved and are within close range.

4. Results and Discussion

The system generalised method of moment regression estimate was employed to examine the effect of foreign capital inflows on financial development of Sub-Saharan African economies. The table below presents the empirical results from the system GMM estimate in which foreign capital inflows proxy by FDI, FPI, and personal remittances versus financial development proxy by financial development index, financial markets index and financial institutions index.

Table 2: The Effects of Foreign Capital Inflows on Aggregated and Disaggregated Financial Development Index of SSA

| VARIABLES | (1) | (2) | (3) |
|-----------|--------------------------|------------------------|--------------------------|
| | FD | FI | FM |
| I.FD | 0.976*** (0.0557) | | |
| I.FI | | 0.795*** (0.0712) | |
| I.FM | | | 0.774*** (0.0882) |
| LFDI | -0.0105*** (0.00273) | 0.00142 (0.00398) | -0.0125*** (0.00413) |
| LFPIC | -0.00455*** (0.00139) | -0.000237 (0.00173) | -0.00564*** (0.00179) |

| | | | |
|---------------------|-------------------------|---------------------------|-------------------------|
| LREMI | 0.00489* (0.00247) | 0.0105** (0.00450) | 0.00515 (0.00443) |
| D.INFL | -8.94e-05 (0.000105) | 0.000422*** (0.000115) | 2.53e-05 (0.000190) |
| LGDPCC | 0.0232** (0.0105) | 0.0204** (0.00871) | 0.0228** (0.0105) |
| L.LGKF | -0.00595 (0.00412) | -0.0160** (0.00630) | -0.00112 (0.00414) |
| NRR | -0.000669 (0.000473) | -0.000506 (0.000530) | -0.000174 (0.000429) |
| POPG | -0.00376 (0.0111) | 0.0327** (0.0123) | 0.00886 (0.0124) |
| Open | 0.0400** (0.0178) | -0.0245 (0.0309) | 0.0147 (0.0181) |
| Constant | 0.142** (0.0568) | 0.0392 (0.0629) | 0.0757 (0.0554) |
| Time Fixed Effects | Yes | Yes | Yes |
| Observations | 836 | 821 | 821 |
| Number of Countries | 42 | 42 | 42 |
| Prop>AR1 | 0.000 | 0.000 | 0.040 |
| Prop>AR2 | 0.683 | 0.568 | 0.938 |
| Instruments | 33 | 33 | 33 |
| Prop>Sargan | 0.793 | 0.213 | 0.801 |
| Prop>Hansen | 0.982 | 0.519 | 0.897 |
| Fisher | 493.90*** | 1775.90*** | 68.66*** |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The Effect of Foreign Capital Inflows on Aggregated and Disaggregated Financial Development Index of SSA is computed with data taken from World Bank FinStats, IMF's Financial Access Survey, Bank for international settlement (BIS) debt securities database, and Dealogic corporate debt database, World Development Indicator (WDI), World Development Indicators (WDI).

These results are adapted from Akum et al. (2024). System GMM demands that we include the lag of the dependent variable on the estimated model. Financial development is affected by its one-year lag. This implies that past values of financial development predict present value by 0.976 units and the finding is significant at 1% level. This suggests that the growth of current value of financial development is necessary for future financial development to improve. Moreover, when we assess proxies of financial development in terms of institutions, and markets we also note that their lag values are capable of predicting their current values by 0.795 units and 0.774 units respectively.

The regression results from table 2 indicates that foreign direct investment has a negative coefficient of 0.0105 and the results are tenable at 1% level of significant and is clearly indicative that foreign direct investments has a negative effect on financial development of SSA countries. The result is contrary to the a priori expectations and in line with the empirical study of Muhammad (2020), and Majeed, et al., (2021). The effect of FDI on financial institution development is positive but insignificant, meanwhile it negatively and significantly affects financial market development. Furthermore, still from table 2, the results indicate that foreign portfolio investment has negative coefficient 0.00455 the results are tenable at 1% level of significant which implies that foreign portfolio investment has negative effect on financial development of SSA countries. This is in line with the a priori expectation. It is no surprise that the coefficient of foreign portfolio investment is negative because

this type of inflows is characterized by stop and reversal in both developing and emerging economies and has severe repercussion on the stability as well as the development of the financial sector across the globe (financial stability review, 2011).

Moreover, personal remittances have a positive coefficient of 0.00489 and the result is tenable at 10% level of significance. This finding is in accordance with the a priori expectation and in line with the findings of Ahamed (2020) who established that workers' remittances have a beneficial long-run effect on financial development in Sri Lanka. Azizi (2019) stated that the positive impact of workers' remittances on financial development in developing economies is good particularly because financial development fosters long-run growth and decrease poverty. The result is further strengthened when alternative measures of financial development are used. With regards to the control variables, GDPPC, and openness of the economy positively and significantly affect financial development. The coefficients of GDPPC and openness of the economy are significant at 5 percent level. This therefore implies that the economy experiencing growth and is open to foreign trade, financial development is greatly enhanced. However, inflation, gross capital formation, natural resource rent, and population growth rate negatively affect financial development but the effects are insignificant.

For robustness check, we considered alternative measures of financial development which are financial market development and financial institution development. By considering the disaggregated financial development in financial institutions, FDI and personal remittances are noted to have positive effect on financial development in financial institutions and the coefficient of remittances is significant at 5% level. This implies that continuous inflow of workers remittances improves financial development in financial institutions and this result is consistent with that of aggregated financial development. The coefficient of foreign portfolio investment is negative implying that it has a negative effect on financial institution development and the sign is consistent with that of aggregated financial development but insignificant. Inflation, GDPPC and population growth rate, positively affect financial institutions development and is significant at both 1% and 5%.

Moreover, examining the effect of foreign capital inflows on financial development in financial market, foreign direct investment, and foreign portfolio investment have a negative and significant effect on financial development in financial markets of SSA countries. These results are tenable at 1% level of significance and are consistent with that of aggregated financial development. Workers remittances have a positive effect on financial development in financial markets and the sign is consistent with that of aggregated financial development and it is insignificant.

The validation of the requires certain conditions to be fulfilled. For our results to be valid, there is a need for the absence of both first and second order autocorrelation of residuals.

Table 3: The Effect of Foreign Capital Inflows on Financial Development Index Moderated by Institutional Quality Composite Indicator

| VARIABLES | (1) Fd | (2) Fd | (3) Fd |
|-----------|----------------------------|----------------------------|----------------------------|
| L.FD | 0.739*** (0.0903) | 0.826*** (0.0611) | 0.624*** (0.0994) |
| D.INFL | -0.000341*** (9.64e-05) | -0.000223*** (6.49e-05) | -0.000355*** (8.86e-05) |
| LGDPPC | 0.0212*** (0.00531) | 0.00994*** (0.00234) | 0.0131*** (0.00479) |
| D.LGKF | 0.0232*** (0.00449) | 0.0171*** (0.00335) | 0.0149*** (0.00481) |
| NRR | 0.000341 (0.000439) | 0.000439** (0.000174) | 9.07e-05 (0.000280) |
| POPG | -0.00170 (0.00484) | -0.00883 (0.00660) | -0.0210*** (0.00730) |
| OPEN | -0.0621** (0.0244) | -0.0413*** (0.0106) | -0.0198 (0.0123) |

| | | | |
|------------------------------------|-------------------------|-------------------------|-------------------------|
| NormIQindex | -0.675** (0.289) | 0.235*** (0.0778) | -0.515*** (0.129) |
| LFDI | -0.0223*** (0.00706) | | |
| IFDInormIQindex | 0.0413** (0.0159) | | |
| IFPI | | 0.00744*** (0.00203) | |
| IFPIcnormIQindex | | -0.0137*** (0.00470) | |
| LREM | | | -0.0132*** (0.00451) |
| IREMinormIQindex | | | 0.0300*** (0.00787) |
| Constant | 0.302** (0.139) | -0.123*** (0.0433) | 0.253*** (0.0874) |
| Net Effect | -0.00224 | 0.00078 | 0.00137 |
| Threshold | 0.530 | 0.543 | 0.440 |
| Observations | 835 | 889 | 889 |
| Number of countries | 42 | 42 | 42 |
| Prop>AR1 | 0.001 | 0.071 | 0.001 |
| Prop>AR2 | 0.889 | 0.345 | 0.257 |
| Instruments | 33 | 33 | 33 |
| Prop>Sargan | 0.997 | 0.577 | 0.628 |
| Prop>Hansen | 0.653 | 0.166 | 0.422 |
| Fisher | 133.4 | 320.2 | 103.1 |
| DHT for instruments [(a) In level] | | | |
| H excluding groups | 0.753 | 0.577 | 0.713 |
| Dif(null H=exogenous) | 0.364 | 0.166 | 0.152 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The Effect of Foreign Capital Inflows on Financial Development Index Moderated by Institutional Quality Composite Indicator is computed with data taken from World Bank FinStats, IMF's Financial Access Survey, Bank for international settlement (BIS) debt securities database, and Dealogic corporate debt database, World Development Indicator (WDI), World Development Indicators (WDI), World Governance Indicators (WGI).

Table 3 sought to investigate the moderating effect of institutional quality on the link between foreign capital inflows and financial development of SSA countries. It can be noted that when we interact the institutional quality index with foreign direct investment, we obtained a negative direct effect and a positive indirect effect on financial development. The direct effect outweighs the indirect effect producing a negative net effect. This is up to an institutional quality threshold of 0.530 composite index when the negative effect is nullified. This implies that institutional quality level is required to go above this threshold for foreign direct investment to have a mitigating effect on financial development in Sub-Saharan Africa.

In addition, when institutional quality interacts with foreign portfolio investment we obtain positive direct effect and a negative indirect effect on financial development. The direct effect outweighs the indirect effect giving rise to a positive net effect. This is up to an institutional quality threshold of 0.543 composite index when the positive effect is completely wipe-off. This implies that institutional quality level is required to go above this threshold for foreign portfolio investment to have a mitigating effect on financial development in Sub-Saharan Africa.

Moreover, when institutional quality interacts with remittances we obtain positive direct effect and a negative indirect effect on financial development. The direct effect outweighs the indirect effect giving rise to a positive net effect. This is up to an institutional quality threshold of 0.440 composite index when the positive effect is completely wipe-off. This implies that institutional quality level is required to go above this threshold for remittances to have a mitigating effect on financial development in Sub-Saharan Africa.

Table 4: The Effects of Foreign Capital Inflows on Financial Development using Two-Stage Least Square model to Check the Robustness

| VARIABLES | (1) Fd | (2) Fd | (3) Fd |
|---------------------|---------------------------|---------------------------|---------------------------|
| IGDPPC | 0.00923*** (0.00183) | 0.00802*** (0.00140) | 0.00703*** (0.00154) |
| L.fd | 0.777*** (0.0203) | 0.780*** (0.0194) | 0.770*** (0.0195) |
| D.infl | -6.85e-05** (2.68e-05) | -3.71e-05 (2.50e-05) | -3.78e-05 (2.44e-05) |
| D.IGKF | 0.000137 (0.00198) | 0.000967 (0.00190) | 0.000832 (0.00188) |
| NRR | -0.000226* (0.000118) | -0.000268** (0.000108) | -0.000262** (0.000107) |
| Popg | 0.00105 (0.00119) | 0.00108 (0.00112) | 0.00127 (0.00112) |
| Open | 0.00607* (0.00320) | 0.00551* (0.00304) | 0.00453 (0.00305) |
| normIQindex | -0.0844** (0.0404) | -0.0275 (0.0193) | -0.0682** (0.0278) |
| LFDI | -0.00240** (0.00107) | | |
| LFDInormIQindex | 0.00391* (0.00212) | | |
| IFPIc | | -0.000553 (0.000510) | |
| IFPIcnormIQindex | | 0.00120 (0.00117) | |
| IREMi | | | -0.000714 (0.000836) |
| IREMinormIQindex | | | 0.00324** (0.00150) |
| Net Effect | -0.0021 | NA | NA |
| Threshold | 0.61381 | -- | -- |
| Observations | 835 | 889 | 889 |
| R-squared | 0.727 | 0.731 | 0.733 |
| Number of countries | 42 | 42 | 42 |
| F | 209.0 | 227.6 | 230.6 |
| r2_a | 0.709 | 0.714 | 0.717 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The Effect of Foreign Capital Inflows on Financial Development using Two-Stage Least Square model to Check the Robustness is computed with data taken from World Bank FinStats, IMF's Financial Access Survey, Bank for international settlement (BIS) debt securities database, and Dealogic corporate debt database, World Development Indicator (WDI), World Development Indicators (WDI), World Governance Indicators (WGI).

The two-stage least square empirical model was used to check the robustness of the results. It is observed that when we interact the institutional quality index with foreign direct investment, we obtained a negative direct effect and a positive indirect effect on financial development. The direct effect outweighs the indirect effect producing a negative net effect. This is up to an institutional quality threshold of 0.61381 composite index when the negative effect is nullified. As such, for foreign direct investment to have a mitigating effect on financial development in Sub-Saharan Africa, the institutional quality level is required to go above this threshold. This technique is consistent with that of SGMM. The adjusted R-square for the different models is above 0.700 which indicates that the model is fit to predict the expected outcome.

Table 5: The Effect of Foreign Capital Inflows on Financial Development in Financial Institutions Moderated by Institutional Quality Composite Indicator

| VARIABLES | (1) FI | (2) FI | (3) FI |
|------------------|---------------------------|-------------------------|--------------------------|
| I.FI | 0.511*** (0.109) | 0.522*** (0.0927) | 0.0858 (0.153) |
| D.infl | -0.000250** (0.000115) | -0.000181 (0.000111) | -0.000370* (0.000187) |
| IGDPPC | 0.0379*** (0.0110) | 0.0540*** (0.00919) | 0.0567*** (0.0130) |
| L.IGKF | -0.00551 (0.00571) | -0.0151*** (0.00449) | -0.00285 (0.00583) |
| NRR | -8.41e-05 (0.000408) | -0.000267 (0.000348) | -0.000695 (0.000494) |
| Popg | -0.00669 (0.0102) | -0.0154* (0.00828) | -0.0349*** (0.0120) |
| Open | -0.0447 (0.0315) | -0.0541*** (0.0181) | -0.0261 (0.0224) |
| normIQindex | -1.025*** (0.176) | 0.236* (0.129) | -0.753** (0.280) |
| LFDI | -0.0299*** (0.00488) | | |
| LFDInormIQindex | 0.0594*** (0.00959) | | |
| LIFPI | | 0.00852*** (0.00305) | |
| LFPIInormIQindex | | -0.0127* (0.00696) | |
| Lrem | | | -0.0216** (0.00824) |
| LRMinormIQindex | | | 0.0487*** (0.0175) |
| Constant | 0.528*** (0.118) | -0.0161 (0.0667) | 0.307* (0.165) |
| Net Effect | -0.00104 | 0.00235 | 0.00206 |
| Threshold | 0.50337 | 0.67087 | 0.44353 |
| Observations | 836 | 891 | 891 |

| | | | |
|------------------------------------|----------|----------|----------|
| Number of countries | 42 | 42 | 42 |
| Prop>AR1 | 0.001 | 0.021 | 0.028 |
| Prop>AR2 | 0.550 | 0.293 | 0.543 |
| Instruments | 33 | 33 | 33 |
| Prop>Sargan | 0.924 | 0.259 | 0.976 |
| Prop>Hansen | 0.545 | 0.272 | 0.280 |
| Fisher | 27.36*** | 115.1*** | 27.57*** |
| DHT for instruments [(a) In level] | | | |
| H excluding groups | 0.768 | 0.204 | 0.722 |
| Dif(null H=exogenous) | 0.220 | 0.485 | 0.063 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The Effect of Foreign Capital Inflows on Financial Development in Financial Institutions Moderated by Institutional Quality Composite Indicator is computed with data taken from World Bank FinStats, IMF's Financial Access Survey, Bank for international settlement (BIS) debt securities database, and Dealogic corporate debt database, World Development Indicator (WDI), World Development Indicators (WDI), World Governance Indicators (WGI).

It can be noted on table 5 that when we interact the institutional quality index with foreign direct investment, we obtained a negative direct effect and a positive indirect effect on financial institutions development. The direct effect overshadows the indirect effect producing a negative net effect. This is up to an institutional quality threshold of 0.5337 composite index when the negative effect is nullified. As such, for foreign direct investment to have a mitigating effect on financial institutions development in Sub-Saharan Africa, the institutional quality level is required to go above this threshold.

Moreover, when institutional quality interacts with foreign portfolio investment we obtain positive direct effect and a negative indirect effect on financial development. The direct effect outweighs the indirect effect leading to a positive net effect. This is up to an institutional quality threshold of 0.67087 composite index when the positive effect is completely wipe-off. This implies that institutional quality level is required to go above this threshold for foreign portfolio investment to have a mitigating effect on financial institutions development in Sub-Saharan Africa.

In addition, when institutional quality interacts with remittances we obtain negative direct effect and a positive indirect effect. The indirect effect outweighs the direct effect giving rise to a positive net effect. This is up to an institutional quality threshold of 0.4435 composite index when the positive effect is completely wipe-off. This implies that institutional quality level is required to exceed this threshold for remittances to have a mitigating effect on financial institutions development in Sub-Saharan Africa.

5. Conclusion and Policy Recommendation

It is noted that for foreign capital inflows to have a mitigating effect on financial development in Sub-Saharan Africa, the institutional quality level is required to go above the threshold level of 0.530 for foreign direct investment, 0.543 for foreign portfolio investment, and 0.440 for remittances. This means that effort should be put to strengthen the institutional framework to go beyond these thresholds.

To maximize the benefits of foreign capital inflows on financial development, there is a need to improve institutional quality through strengthening governance, reducing corruption, improving regulatory frameworks, and ensuring transparency. Foreign capital inflows need to be encouraged in a way that maximize positive spillovers to financial sector, such as through partnerships with local firms, training programs, and technological transfers that enhance financial development. The government and policymakers should consider strategies to mitigate the immediate negative impacts of FDI while developing conditions that support the long-term positive effects. This might require reforms and targeted interventions in the financial sector.

Constant monitoring and evaluation of the impact of foreign capital inflows on financial development can help in adjusting policies to ensure that the positive impacts are maximized while minimizing negative impacts. Policies should be implemented to manage the potential volatility introduced by foreign portfolio investment which includes developing better risk management practices, creating stabilization funds, and enhancing market oversight.

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Appendix

Pair-Wise Correlation Matrix

| | LFDI | LFPI | LREMI | INFL | LGDPPC | LGKF | NRR | POPG | OPEN |
|--------|--------|---------|---------|---------|---------|---------|--------|---------|--------|
| LFDI | 1.0000 | | | | | | | | |
| LFPI | 0.0430 | 1.0000 | | | | | | | |
| LREM | 0.4338 | 0.0212 | 1.0000 | | | | | | |
| INFL | 0.0116 | 0.0482 | -0.0556 | 1.0000 | | | | | |
| LGDPPC | 0.3569 | 0.2188 | -0.0028 | -0.0668 | 1.0000 | | | | |
| LGKF | 0.6817 | 0.1380 | 0.4543 | -0.0148 | 0.4073 | 1.0000 | | | |
| NRR | 0.1456 | -0.1271 | -0.1661 | 0.1648 | -0.1000 | 0.0732 | 1.0000 | | |
| POPG | 0.0867 | -0.1390 | 0.0165 | 0.0419 | -0.3082 | 0.1024 | 0.3773 | 1.0000 | |
| OPEN | 0.1480 | 0.0212 | -0.1844 | -0.0521 | 0.4861 | -0.0479 | 0.1485 | -0.3073 | 1.0000 |

Unit-root IPS Stationarity Test

| Variables | Levels | P value | First Difference | | Order of Integration |
|-----------|-----------|---------|------------------|---------|----------------------|
| | Statistic | | Statistic | P value | |
| FD | -3.2289 | 0.0006 | -- | -- | I(0) |
| FI | -4.6950 | 0.0000 | -- | -- | I(0) |
| FM | 2.7080 | 0.9966 | -17.5859 | 0.0000 | I(1) |
| LFDI | -9.3023 | 0.0000 | -- | -- | I(0) |
| LGDPPC | -2.1160 | 0.0172 | -- | -- | I(0) |
| LGKF | -0.6143 | 0.2695 | -16.3951 | 0.0000 | I(1) |
| LREM | -6.2545 | 0.0000 | -- | -- | I(0) |
| LFPI | -14.1477 | 0.0000 | -- | -- | I(0) |
| OPEN | -2.0840 | 0.0186 | -- | -- | I(0) |
| NRR | -4.3702 | 0.0000 | -- | -- | I(0) |
| POPG | -2.8688 | 0.0021 | -- | -- | I(0) |
| INFL | -9.4625 | 0.0000 | -- | -- | I(0) |

Cross-Sectional Average Pesaran Test

| Variables | Levels Statistic | P value |
|-----------|---------------------|---------|
| FD | -4.913 | 0.000 |
| FI | -5.732 | 0.0000 |
| FM | 3.100 | 0.999 |
| LFDI | -6.949 | 0.000 |
| LGDPPC | -4.535 | 0.000 |
| LGKF | -4.613 | 0.000 |
| LREM | 1.821 | 0.966 |
| LFPI | -8.813 | 0.0000 |
| OPEN | 0.317 | 0.624 |
| NRR | -2.495 | 0.006 |
| POPG | -11.479 | 0.000 |
| INFL | -10.205 | 0.000 |

INFO

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