

Does Financial Development in Relation to Remittances influence Economic Growth in Sub-Saharan Africa?

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Abstract

This study investigates the influence of financial development on the relationship between remittances and economic growth within the Sub-Saharan Africa region. The study utilised panel data encompassing 42 countries, spanning the time frame 1980 to 2021. The research employed a cross-sectional augmented panel unit root test, as well as the Im-Pesaran-Shin unit-root test, to conduct the unit root analysis. The regression estimations employed the Pooled Mean Group and Mean Group/ARDL methodologies. The research findings demonstrate a significant association between the development of financial systems and sustained economic growth over an extended period. The findings from the empirical analysis indicate that there exists a substitutive relationship between financial development and the association between remittances and economic growth. The study proposes that it would be advantageous for financial policies in the Sub-Saharan Africa (SSA) region to give priority to the implementation of efficient financial reforms with the goal of improving the overall depth of the financial sector.

Keywords: Remittances, Financial development, ARDL, Economic growth, Sub-Saharan Africa.

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1. Introduction

Remittances are an inherent consequence of migration and function as the primary benefits and compensatory measures for emigrant nations, which experience a depletion in their labour pool (Olayungbo & Quadri, 2019). According to Kevin and Fabien (2021), it has been established that there exists a more expedient, uncomplicated, and cost-effective approach for facilitating international money transfers. The deceleration in the growth rate of remittances in 2015 can be primarily attributed to adverse economic conditions prevailing in major remittance-source countries (Cazachevici, Havranek & Horvath, 2020). The study conducted by Azizi (2020) provides empirical evidence that there is a positive correlation between the inflow of remittances received from abroad and financial development, as observed through the deposit flow into domestic banks. According to Kakhkharov and Rohde (2020), remittances constitute the second most significant inflow of foreign funds to Sub-Saharan Africa (SSA), following foreign direct investment (FDI). Limited research has been conducted on the interplay between remittances, financial development, and economic growth in Sub-Saharan African (SSA) countries, despite the substantial influx of remittances to this region. There are a limited number of studies on the subject of SSA, with two notable examples being Kumar's (2012) study, which examined data from 1970 to 2010, and Adarkwa's (2015) study, which focused on the years 2000 to 2010 and employed individual linear regression analysis for four countries in SSA. Moreover, Coulibaly (2015) conducted a study that utilised a panel Granger causality testing approach, employing seemingly unrelated regression (SUR) for a sample of 19 Sub-Saharan African (SSA) countries from 1980 to 2010. The present study utilised the pooled mean group (PMG) autoregressive distributed lag (ARDL) model to perform panel analysis in both the short-term and long-term. The outcomes derived from this methodology were subsequently juxtaposed with the average group (MG) autoregressive distributed lag (ARDL) model introduced by Pesaran, Shin, and Smith (1999) and Pesaran and Shin (1995). The dynamic panel analysis was conducted on the selected African nations using the dynamic model. Additionally, an examination was performed to assess the connection between remittances, financial development, and growth.

According to numerous endogenous growth models, financial development emerges as the primary driving factor behind economic growth. Previous research conducted by Islam et al. (2020) employed multiple indicators as proxies to assess financial development. These indicators included the saving ratio, domestic credit to the private sector, market capitalization, and the ratio of quasi-money (M2/GDP). Within the framework of developed countries, there is a certain level of agreement among scholarly sources that the phenomenon of financial liberalisation, which involves the removal of barriers to international lending and the deregulation of interest rates, bestows increased independence upon commercial banks in setting the rates for their loans and deposits. This, in turn, is posited to stimulate economic growth by enhancing the efficacy of the banking system (Nasir, Huynh, & Tram,

2019). Nevertheless, the ambiguous and insignificant benefits of financial liberalisation in developing countries can be attributed to the presence of a weak financial system, characterised by underdeveloped non-deposit-taking institutions, as well as a prevailing deficiency in skills (Ouyang & Li, 2018). Following a prolonged period of warfare spanning ten years, a significant number of nations witnessed robust economic expansion as they shifted towards market-oriented economies and accorded considerable importance to unemployment and inflation, as well as macroeconomic stability.

1.1 Motivation and Significance of the Study

In contemporary times, countries in Sub-Saharan Africa have experienced a notable rise in the inflow of remittances, thereby highlighting the substantial role that remittances play in fostering economic growth (Olayungbo & Quadri, 2019). Policymakers have expressed these objectives with the belief that enhancing financial development and remittances can facilitate poverty alleviation and stimulate economic growth. However, the exploration of these objectives in Sub-Saharan African countries remains limited. The primary aim of this research is to elucidate the significance of remittances and financial development in fostering economic growth. Moreover, it serves as a fundamental framework for the formulation of appropriate policies within the financial industry, simultaneously enabling the oversight of remittance transactions. The main aim of this study is to investigate the interaction between remittances and financial development in terms of their influence on economic growth. The presence of an interaction effect suggests that the simultaneous pursuit of policies aimed at both expanding the financial sector and increasing the inflow of remittances can potentially contribute to the enhancement of economic growth. The feasibility of integrating diverse financial development channels into a unified financial development proxy is limited due to the prevalent use of a single indicator in many studies. This study demonstrates a notable progression by integrating seven indicators of financial development to examine the effects of financial development and remittances on economic growth, as well as to investigate their collective impact on growth. The subsequent sections of the paper are organised in the following manner. Section 2 presents a thorough analysis of the existing empirical literature on the topics of remittance, financial development, and economic growth. Section 3 of the document is dedicated to the utilisation of estimation techniques and the examination of data-related considerations. Section 4 of the paper presents the findings and analysis, while Section 5 offers a conclusion to the study along with policy recommendations.

2. Related Literature

2.1 Financial development and economic growth

The relationship between financial development and economic growth has been thoroughly investigated in numerous academic studies (Sehrawat & Giri, 2018; Ouyang & Li, 2018; Nasir et al., 2019). The existing body of empirical research has employed the supply-leading and demand-following hypotheses as foundational principles to distinguish the relationship between financial development and economic growth. The concept in which financial development drives economic growth is commonly known as the demand-following hypothesis, as demonstrated by the empirical study conducted by Ibrahim and Alagidede in 2018. The supply-leading hypothesis is a widely recognised term used to describe the phenomenon in which financial development does not effectively accelerate economic growth. Both of these hypotheses also suggested a reversal of causality for both variables. Bist (2018) conducted a panel study that investigated the association between financial development and economic growth in a sample of 16 low-income countries from both African and non-African regions, with a specific focus on reverse causality. In a study conducted by Sethi and Acharya (2018), an examination was carried out on a sample of 31 countries, encompassing both developed and developing nations, with the aim of exploring the association between the variables under investigation. Furthermore, the investigation of this subject has been undertaken by other time-series studies, such as the research conducted by Adu-Darko and Aidoo (2022). Rehman and Hysa (2021) have also underscored the favourable impact of financial development on economic growth. However, no discernible correlation was observed between the ratio of broad money stock (M2) to gross domestic product (GDP) and the rate of economic growth. Research has revealed that an increase in domestic credit allocated to the private sector is correlated with a favourable effect on economic growth. Antoshin et al. (2017) conducted a study that analysed a sample of 55 countries. The researchers utilised system GMM estimation to explore the correlation between the inflow of bank credit to the private sector and its influence on economic growth. The study's results indicate a positive correlation between the augmentation of bank credit allocation to the private sector and the stimulation of economic expansion. According to the time series analysis conducted by Hassan, Sanchez, and Yu (2011), it was observed that high-income countries demonstrate a greater probability of achieving favourable outcomes from financial development, which subsequently contributes to economic growth, in contrast to low-income countries. According to Ruiz (2018), there is evidence to support the notion that financial development has a positive impact on economic growth in wealthy and industrialised nations. In their study, Bist (2018) utilised co-integration analysis as a methodological approach to ascertain the co-integration relationship existing between financial development, specifically measured by the ratio of bank deposits to GDP, and economic growth within developing nations. Moreover, a study conducted by Lu (2018) examined the economies of Asian countries and revealed the presence of a temporary positive association between

financial development and economic growth, which gradually weakens over an extended period of time. Petkovski and Kjosevski (2014) conducted a study in which they utilised system GMM analysis to determine that the progress of the banking sector is a crucial prerequisite for the financial development of nations in Central and Southern Europe. The crucial factor identified by the authors for stimulating economic growth was found to be significant in the nations of Albania, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Poland, Romania, Slovak Republic, Slovenia, and Ukraine. Cojocaru et al. (2016) conducted a study that demonstrated a significant association between financial development, specifically the provision of domestic credit to the private sector, and economic growth in transition countries located in Central and Eastern Europe (CEE) between 1990 and 2008.

2.2 Remittances and Economic growth link

It has been suggested that remittances originating from migrant workers residing abroad have the potential to augment both consumption and investment within their respective home countries. The authors of this study are Kevin and Fabien (2021). A significant portion of the remittances allocated by migrant workers' families in developing nations is directed towards investments in the real estate sector, household consumption, and the acquisition of livestock, particularly in rural regions. Nevertheless, the absence of adequate banking facilities in rural regions results in a situation where the majority of remittances are allocated towards consumption, while only a minor fraction is directed towards productive investment (Askarov & Doucouliagos, 2020).

Furthermore, the assertion made by Askarov and Doucouliagos (2020) suggests that the impact of remittances on economic growth is minimal when they are predominantly utilised for individual consumption. Furthermore, according to William (2017), it is argued that the influence of remittances on economic growth is contingent upon the level of democracy prevailing in developing countries. Based on the researcher's investigation, which involved the analysis of data from 109 developing nations, it was found that countries characterised by elevated levels of democracy tend to experience greater advantages from inflows of remittances compared to countries with lower levels of democracy.

Regarding the impact of remittances on the pathway of economic growth, it is evident that remittances exert a favourable influence on the recipient country's marginal propensity to invest and consume. Moreover, remittances play a significant role in fostering the growth of operational businesses, thereby leading to the generation of employment opportunities. Furthermore, the influx of remittances plays a significant role in maintaining the stability of the domestic currency within the economy of the recipient country. In their study, Jawaid and Raza (2016) examined the relationship between remittances and economic growth in South Asian nations. Their findings revealed a positive correlation between these two variables.

Nevertheless, the results derived from the system GMM estimation revealed a negative correlation, specifically pertaining to Pakistan. Scholars in the empirical literature have classified studies investigating the relationship between remittances and economic growth into three distinct categories. Several researchers have conducted studies to examine the influence of remittances on economic growth. Meyer and Shera (2017) and Sutradhar (2020) have both observed a positive correlation between remittances and economic growth within the aforementioned category. In contrast, the study conducted by Abduvaliev and Bustillo (2020) revealed a statistically significant and adverse effect of remittances on economic growth. In contrast, Uprety (2017) discovered that there was no statistically significant correlation between the two variables.

3. Data and Methodology

3.1 Data Sources and Description

Data from the World Development Indicator (WDI) covering the years 1980 to 2021 were collected in order to conduct an analysis that would determine the extent to which remittances and financial development together contribute to economic expansion in the Sub-Saharan region. In the sample population, we incorporated a total of 48 countries located in the Sub-Saharan African region. However, due to limitations in data availability, six countries were excluded from the analysis, resulting in a final sample size of 42 countries for the purposes of this study. For further information, please refer to Appendices A. This study utilises a set of five independent variables, with economic growth serving as the dependent variable.

GDP per capita (constant 2015 US\$) was employed as a proxy for assessing economic growth. The concept of GDP per capita pertains to the calculation of the gross domestic product divided by the population at the midpoint of a given year. The Gross Domestic Product (GDP) is a measure that quantifies the total value of goods and services produced within a given economy by producers who are residents of that economy. The term "it" refers to the concept being discussed, which involves the inclusion of gross value added by producers and product taxes, while excluding any subsidies that are not factored into the product value. The calculation fails to incorporate the reduction in value of manufactured assets over time or the decline and deterioration of natural resources. The data is presented in U.S. dollars that have been adjusted for inflation in order to account for constant values in the year 2015.

The current body of literature on financial development encompasses various indicators that serve as proxies for the capacity of financial intermediaries to identify lucrative projects, oversee and regulate managers, facilitate risk management, and enable the mobilization of resources. In the present study, a set of seven variables is employed as a metric for assessing financial development.

The indicators being examined encompass various aspects of the financial system, such as the proportion of Broad money relative to GDP, the ratio of bank liquid reserves to bank assets as a percentage, the extent of domestic credit allocated to the

private sector in relation to GDP, the magnitude of domestic credit provided by banks to the private sector as a percentage of GDP, the frequency of borrowers from commercial banks per 1,000 adults, the density of commercial bank branches per 100,000 adults, and the prevalence of depositors with commercial banks per 1,000 adults. Principal component analysis (PCA) was employed to combine the seven variables into a single variable, which accounted for 72.95% of the total variation. The term "remittance" refers to the transfer of funds made by individuals, which can be categorized into two main types: personal transfers and compensation of employees. Personal transfers encompass all present transfers, whether in the form of cash or non-monetary assets, that are exchanged between resident households and nonresident households. Personal transfers encompass all present transfers between individuals who are residents and individuals who are nonresidents.

The term "compensation of employees" pertains to the earnings received by individuals who work temporarily in an economy where they are not residents, such as border, seasonal, and other short-term workers. It also includes the income of residents who are employed by entities that are not residents of the same economy. The data encompass two distinct components as outlined in the sixth edition of the International Monetary Fund's Balance of Payments Manual. These components include personal transfers and compensation of employees. The measurement was conducted in terms of a percentage of the Gross Domestic Product (GDP).

Trade openness refers to the quantification of trade activities, encompassing both exports and imports of goods and services, in relation to the overall size of a country's gross domestic product (GDP); Foreign Direct Investment (FDI) refers to the financial resources that flow into a foreign economy with the intention of acquiring a significant ownership stake (at least 10 percent of voting stock) in a business entity operating within that economy, by an investor from a different economy.

The aggregate consists of various components, including equity capital, reinvestment of earnings, other long-term capital, and short-term capital, which are reflected in the balance of payments. The data presented depicts the net inflows in the reporting economy that arise from foreign investors, specifically referring to the disparity between new investment inflows and disinvestment. These net inflows are then normalised by dividing them by the Gross Domestic Product (GDP).

3.2 Econometric Analysis

To mitigate the potential influence of bias and unreliability in the findings, an initial cross-sectional dependency test was conducted to determine if the data is subject to cross-sectional dependency. Following the completion of the cross-sectional dependency test, an analysis of unit roots was conducted. In this particular instance, we conducted a second generational unit root analysis, specifically employing the cross-sectional augmented panel unit root test (CIPS) and the Im-Pesaran-Shin unit-root test. These tests were chosen due to their ability to address cross-sectional dependency in the data. The outcomes of the unit root test were utilised to guide the

selection of the pooled mean group and mean group analysis. To assess the strength of the relationship between economic growth and remittance and financial development, we initially conducted a regression analysis without considering an interaction effect. Subsequently, we conducted a test incorporating an interaction effect.

3.3 Pooled Mean Group/Mean Group-Auto Regressive Distributive Lag (PMG/MG-ARDL)

The PMG/MG-ARDL method is utilised in this study for the purpose of estimation. The PMG estimator, as introduced by Pesaran et al. (1999), entails the aggregation and computation of coefficients across multiple cross-sectional units. The MG method, as outlined by Pesaran and Shin (1995), involves estimating the coefficients for each unit separately and then computing the average coefficient across all cross-sectional units. The utilisation of the ARDL model is justified based on its suitability for our dataset. The model possesses the capacity to integrate a variety of stationary variables, encompassing those with integrated orders of both I(0) and I(1). Ultimately, this analysis encompasses the variations of significant variables over both short-term and long-term timeframes. Thus, this study integrates both the Pooled Mean Group (PMG) and Mean Group (MG) estimations. The empirical equation that represents the Panel Mean Group/Mean Group Autoregressive Distributed Lag (PMG/MG-ARDL) model is presented as follows:

$$\begin{aligned}
 GDPPC_{it} = & A + \vartheta GDPPC_{it-1} + \lambda_i \sum_{i=1}^g \Delta GDPPC_{it-1} + \alpha_i \sum_{i=1}^g \Delta Re_{it-1} \\
 & + \pi_i \sum_{i=1}^g \Delta FD_{it-1} + \omega_i \sum_{i=1}^g \Delta FD_Re_{it-1} + \tau_i \sum_{i=1}^g \Delta TO_{it-1} \\
 & + \gamma_i \sum_{i=1}^g \Delta FDI_{it-1} + \beta_1 GDPPC_{it-1} + \beta_2 Re_{it-1} + \beta_3 FD_{it-1} \\
 & + \beta_4 FD_Re_{it-1} + \beta_5 TO_{it-1} + \beta_6 FDI_{it-1} + \eta_i + \varepsilon_{it}
 \end{aligned}$$

GDPPC refers to GDP per capita, The variable "Re" denotes remittance received, while "FD" represents financial development. The variable "FD_Re" signifies the interaction between financial development and remittance. Additionally, "TO" denotes trade openness, and "FDI" refers to foreign direct investment. The coefficient ϑ represents the lagged effect of GDPPC, while the parameters λ , α , π , ω , τ , and γ represent the coefficients of the short run. On the other hand, the coefficients β represent the long-run effects. The formula for estimating the mean group is expressed as:

$$MG = \frac{\sum_{i=1}^N \bar{\beta}_i}{N}$$

In this context, the symbol "MG" is used to denote the mean group, while the symbol " β " is used to represent the coefficient estimates.

4. Results and Discussions

This section provides an exposition of the findings derived from the analysis conducted on the impact of financial development and remittances on economic growth.

4.1 Descriptive Statistics

Prior to proceeding with the analysis, an examination of the descriptive characteristics of the study variables is conducted through the assessment of central tendency and variability. The findings have been presented in Table 1. The data clearly indicates that the average natural logarithm of GDP and natural logarithm of GDP per capita for the Sub-Saharan African region is 6.9695, with a relatively low standard deviation of 0.9251. The range of InGDPPC spans from 5.1116 to 9.7405. According to Olayungbo and Quadri (2019), Africa exhibits a comparatively lower average GDP per capita in relation to other regions across the globe. The mean values of remittance, financial development, remit_fd, trade openness, and foreign direct investment are 4.2932, 0.1123, 1.4902, 67.6991, and 3.4573, correspondingly. The data reveals that Sub-Saharan Africa exhibits a notable proportion of remittances relative to its Gross Domestic Product (GDP), alongside a substantial level of trade openness. Nevertheless, the mean percentage of foreign direct investment (FDI) is relatively modest.

Table 1: Descriptive Statistics of the Study Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
lnGDPPC	2,064	6.9695	0.9251	5.1116	9.7405
Remittance	2,064	4.2932	16.2477	0.0000	235.9241
Financial development	1,806	.01123	1.8052	-3.6102	8.9664
Remit_fd	1,806	1.4902	11.6725	-34.7949	149.8209
Trade openness	1,935	67.6991	33.8786	0.7569	225.0231
Foreign direct investment	2,064	3.4573	7.9431	-28.6243	161.8238

4.2 Cross-sectional Dependency

Pesaran's, Friedman's, and Frees' tests of cross-sectional independence were utilised in order to investigate the cross-sectional dependency of the data. Each of these tests began with the presumption that the data do not exhibit any cross-sectional dependency. The findings are detailed in Table 2, which can be found below. It is

clear from looking at Table 2 that the p-values for all of the tests fall below the 0.05 threshold. The conclusion that can be drawn from this is that the null hypothesis stating that there is no cross-sectional dependency must be rejected. As a result, we can conclude that there is evidence of cross-sectional dependency.

Table 2: Cross-Sectional Test

	test value	p-value
Pesaran	25.793	0.0000
Friedman	285.896	0.0000
Frees	9.352	0.0000

4.3 Unit Root Test

Prior to conducting the regression analysis, the presence of a unit root in the panel data was assessed. This information guided the selection of the appropriate regression analysis to be conducted. Due to the existence of cross-section dependency in the dataset, second-generation unit root tests were employed. The utilisation of second generational unit roots addresses the issues of cross-sectional dependency and yields dependable outcomes. Table 3 presents the outcomes of the cross-sectional augmented panel unit root test (CIPS) and the Im-Pesaran-Shin (IPS) unit-root test.

Based on the findings presented in Table 3, it is evident that the variable "lnGDPPC" exhibited non-stationarity initially, but achieved stationarity after being differenced once. This suggests that it is integrated at a first order, denoted as I(1). The remaining variables were sequentially integrated, indicating that Remittance, Financial development, trade openness, Foreign direct investment, and remittance*fd all exhibited stationarity at the level. This suggests that the variables demonstrate a combination of integrated of order 1 (I(1)) and integrated of order 0 (I(0)), thus making the PMG/MG-ARDL model suitable for analysing the data.

Table 3: Unit Root Test

Variables		CIPS	IPS	Integration
lngdppc	Level	-1.789	-1.501	I(1)
	1 st Diff	-4.973***	-4.8484***	
Remittance	Level	-3.264***	-2.960***	I(0)
Financial development	Level	-2.273***	-2.342***	I(0)
trade openness	Level	-2.678***	-2.726***	I(0)
Foreign direct investment	Level	-4.139***	-4.416***	I(0)
remitt_fd	Level	-2.74***	-2.861***	I(0)

Critical values for CIPS, at 10%: -2.05; 5%: -2.11; 1%: -2.23. For IPS critical values are -2.440(1%), -2.360(5%) and -2.320(10%).

4.4 Regression Results of PMG/MG-ARDL

The findings of the PMG/MG-ARDL analysis regarding the effects of remittance and financial development on economic growth are presented in Table 4. The determination of the optimal lag length for panel autoregressive distributed lag (ARDL) models with lag orders (1, 1, 1, 1, 1) is conducted for both the Pooled Mean Group (PMG) and Mean Group (MG) estimators, employing the Schwarz information criterion (SIC). The short-term predictions for both the PMG and MG models demonstrate comparable associations between the dependent and independent variables. However, when considering long-term projections, the PMG model exhibits better performance in comparison to the MG model.

In the short term, it has been observed that the presence of remittance and financial development, as well as the interaction between remittance and financial development, do not have a significant influence on economic growth in both MG and PMG cases. This discovery aligns with the investigation carried out by Uprety (2017). The impact of remittance and financial development on economic growth is generally limited in the short term for most developing countries.

Throughout the duration of the study, it was ascertained that in the absence of the interaction effect, financial development exerted a significant and statistically meaningful impact on the progress of the economy. Based on the PMG method, it can be inferred that a 1% increase in financial development is positively correlated with a corresponding 0.7193% increase in economic growth, as indicated by the coefficient of 0.7193. However, upon careful examination of the interaction effect's influence on financial development, it was determined that the impact of remittance was not significant.

Nevertheless, it is important to acknowledge that the interaction coefficient exhibited both a negative direction and achieved statistical significance. This observation implies that the influence of financial development decreases as the magnitude of remittance rises. The economic growth of nations characterised by lower levels of remittance inflows is significantly impacted by the development and improvement of their financial systems. This discovery is consistent with the study conducted by Olayungbo and Quadri (2019), in which they propose that remittance and financial development act as alternative catalysts for economic growth.

The manifestation of an entity's influence becomes evident when the other entity undergoes a reduction in its presence or impact. The authors have provided a clear explanation that the relaxation of liquidity constraints leads to a compensatory effect through remittances, which helps to overcome the limitations of an underdeveloped financial system. This, in turn, facilitates the efficient allocation of resources and contributes to the promotion of economic growth.

The control variables employed in the PMG method indicate that trade openness and foreign direct investment have a statistically significant and positive impact on long-term economic growth. This discovery is consistent with the study conducted by Banday, Murugan, and Maryam (2021), which posits that the magnitude of the market exerts a substantial impact on the trajectory of economic growth.

The Error Correction term (ECT) is a metric that quantifies the speed at which a system transitions from a state of short-run disequilibrium to a state of long-run equilibrium. It is expected that the coefficient of the ECT parameter will demonstrate a negative and statistically significant correlation. The observed effect, which is both negative and significant, is exclusively evident in the MG estimate. The statistical analysis revealed that both the MG and PMG models displayed a statistically significant negative value for the coefficient of the Error Correction Term (ECT), indicating the rate at which adjustment occurs towards equilibrium. The coefficient of -0.2234 indicates that there is a negative relationship between the independent variables and the rate at which economic growth returns to its equilibrium level in the Sub-Saharan Africa region. This coefficient implies that for every unit change in the independent variables, there is a 22.34% decrease in the rate of reversion to equilibrium.

Table 4: Regression Results of PMG/MG-ARDL

Variable	MG		MPG	
	1	2	1	2
Short run				
Remittance	-0.0801	0.6509	-0.0819	1.3593
Financial development	0.0102	0.0424	0.0268	0.0345
Remittance*FD		0.4313		0.9830
Trade openness	-0.0005	-0.0005	0.0006	0.0004
Foreign direct investment	0.0022	0.0038	0.0002	0.0017
ec(-1)	-0.2216***	-0.2234***	-0.2012***	-0.2067***
Long run				
Remittance	-1.3202	4.6644	0.0306	-0.0216
Financial development	-0.2154	-0.0875	0.7193***	0.0685
Remittance*FD		1.7919		-0.0280**
Trade openness	0.0104	0.0035	0.0866***	0.0550***
Foreign direct investment	0.2430	-0.1291	1.8714***	-0.1567***

***, **, * indicate that the p-values of the coefficients are less than 1%, 5% and 10% respectively.

5. Conclusion and Policy Implications

The objective of this study was to examine the relationship between remittances, financial development, and economic growth in a sample of 42 countries located in Sub-Saharan Africa. Following the completion of a unit root test, which indicated that the variables possess a combination of integrated of order 1 (I(1)) and integrated of order 0 (I(0)), we proceeded to employ both the MG and PMG/ARDL models. The findings suggest a significant correlation between the level of financial development and the extent of long-term economic growth (Marashdeh and Al-Malkawi, 2014) The aforementioned researchers have noted that a well-organized financial system possesses the capacity to foster innovation and propel forthcoming economic development through its ability to facilitate the identification and provision of funding for productive investments.

However, it is possible to observe a negative interaction effect when examining the correlation between financial development and remittances in the context of economic growth. The aforementioned observation serves as an illustration of the substitutability hypothesis, a theoretical framework that suggests that the mitigation of liquidity constraints arising from remittances plays a role in fostering financial development. Therefore, this study posits that the advancement of financial systems plays a crucial role in fostering economic growth within the Sub-Saharan Africa (SSA) region. Furthermore, the interaction between remittances and financial development plays a significant role in fostering economic growth in Sub-Saharan Africa (SSA). The findings of this research suggest that the promotion of financial development has considerable potential in facilitating economic growth in Sub-Saharan African nations.

The policy recommendation asserts that the development of financial services, financial instruments, and the payment system is of utmost importance in promoting both immediate and long-lasting economic growth in nations situated in Sub-Saharan Africa (SSA). The central objectives of the Social Security Administration's financial policies, encompassing both immediate and long-term perspectives, should centre on the formulation and implementation of proficient financial reforms with the aim of augmenting the breadth of the financial sector. It is anticipated that this measure will improve the efficiency and effectiveness of the financial industry.

To facilitate inclusive economic development, it is crucial to augment financial inclusivity and encourage the expansion of banking services. Exemplary cases involve the adoption of mobile banking, internet banking, automated Teller machines (ATM), and rural banking, which contribute to the migration of a larger proportion of remittance-recipient households in Sub-Saharan Africa (SSA) from the informal financial sectors to the formal financial system.

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