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Financial Development And Economic Growth: Evidence From Sub-Saharan Africa

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Abstract
This study examines the effect of financial development on economic growth in Sub-Saharan Africa (SSA) countries. Motivated by persistent economic disparities and the need for sustainable growth strategies, the research investigates the individual impacts of financial development indicators—broad money, domestic credit to the private sector, and interest rate spread—on economic growth. Using a longitudinal design spanning 2002 to 2021 across 45 SSA countries, secondary data from World Bank databases were analysed with advanced statistical methods, including stepwise regression and panel data analysis. The findings indicate that financial development has a significant but mixed effect on economic growth: broad money negatively affects growth, domestic credit to the private sector positively influences it, and interest rate spread shows a negative relationship, highlighting inefficiencies in financial intermediation. Anchored in Endogenous Growth Theory and financial intermediation theory, the study concludes that efficient financial systems are critical for driving sustained economic growth in SSA. It recommends enhancing financial intermediation efficiency to support long-term growth outcomes.

Keywords: *Financial development, economic growth, broad money, domestic credit, interest rate spread, and Sub-Saharan Africa*

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I. Introduction

A. Background

The United Nations' Sustainable Development Goals (SDGs) provide a global framework for achieving sustainable development by 2030, with Goal 8 focusing on decent work and economic growth. Central to this objective is financial development, which supports economic growth by establishing robust and inclusive financial systems. These systems facilitate capital provision for businesses and encourage private sector investment, driving productivity and economic expansion. Empirical evidence underscores this connection, with studies such as Ibrahim and Alagidede (2017) and Abbas et al. (2022) demonstrating that a well-functioning financial system enhances productivity, a key determinant of growth. In Sub-Saharan Africa (SSA), where economic disparities persist, leveraging financial development is critical to achieving sustainable growth and meeting global development targets.

The relationship between financial development and economic growth has been a subject of theoretical exploration for decades. Early proponents of the liberal school, including Keynes (1936, 1937) and Hicks (1969), argued that an effective, dynamic, and modern financial system fosters capital accumulation and stimulates investment, leading to economic growth. Similarly, Shaw (1973) and McKinnon (1973) from the financial repression school emphasized the growth-enhancing potential of reducing financial constraints. Theoretical frameworks further enrich this understanding: the neoclassical growth theory (Solow, 1956) links long-term growth to exogenous factors like technology, while the endogenous growth theory (Romer, 1986) highlights the role of internal factors such as innovation. The classical theory of financial intermediation (Allen and Santomero, 1996) and the financial market theory of development (World Bank Group, 2000) reinforce the

importance of financial systems in reducing transaction costs, managing risks, and promoting growth through market liberalization.

In the context of Sub-Saharan Africa, financial development has shown notable progress alongside varying levels of economic growth. From 2001-2010, the region recorded an average annual GDP per capita increase of 2.18%, a significant improvement from the -0.32% of the previous decade, with an overall economic growth rate averaging 4.6% between 2000 and 2019 (African Development Indicators, 2023). Since 2000, the banking sector has expanded, and financial access has improved, reflecting advancements in financial development (Tyson, 2021). However, challenges such as inadequate credit availability for key economic sectors continue to impede inclusive growth. These trends highlight the potential of financial development as a catalyst for economic growth in SSA, while also underscoring the need to address systemic inefficiencies to maximize its impact.

B. Problem Statement

Studies have established that effective, dynamic, and modern financial systems significantly enhance productivity and promote economic growth (Ibrahim & Alagidede, 2017; Abbas et al., 2022). In Sub-Saharan Africa (SSA), the region has seen an average GDP per capita growth rate of 4.6% over the past two decades, partly driven by improved access to finance (African Development Indicators, 2023). However, this positive trajectory was disrupted by the COVID-19 pandemic, which reduced the growth rate to 3.6%, with projections indicating a further decline to 3.1% in 2023 due to diminishing aid inflows (World Bank, 2023). This economic slowdown highlights the urgency of identifying alternative drivers of growth, with financial development emerging as a critical factor. Despite its potential, the precise mechanisms through which financial development influences economic growth in SSA, especially amidst external shocks and varying levels of financial system maturity, remain underexplored.

The SSA region exhibits a complex landscape of financial development, marked by both progress and persistent challenges. Since the early 2000s, the median ratio of private sector credit to GDP has doubled in most SSA countries, reflecting significant strides in financial access. Innovations such as M-Pesa, M-Shwari, and M-Kopa have positioned SSA as a global leader in mobile-based financial services, reducing transaction costs and enabling personal transactions even without traditional banking infrastructure. The presence of Pan-African banks has further bridged service gaps left by foreign banks, fostering economic integration. However, financial market depth, institutional development, and financial inclusion lag behind other regions (IMF, 2016). These mixed outcomes raise questions about the extent to which financial development can consistently drive economic growth, particularly when confronted with structural weaknesses and external pressures like the post-pandemic recovery.

Despite SSA's advancements in financial innovation and its potential to transform economic fortunes, empirical evidence on the relationship between financial development and economic growth remains limited. While the region's successes make it an ideal case study, only a handful of recent investigations have explored this linkage in an African context. Three studies focused narrowly on individual countries (Gashirayi, 2017; Puatwoe & Paibuo, 2017; Pinshi, 2020), and a broader SSA study by Asante et al. (2023) examined financial development's effect on growth through the lens of institutional quality, overlooking other influential factors. This gap in comprehensive, large-scale research underscores the need for a more holistic analysis to inform policy decisions and enhance regional collaboration. Consequently, this study seeks to address the critical question of how financial development impacts economic growth in SSA, providing a foundation for understanding its role amid the region's unique economic challenges and opportunities.

II. Literature Review

A. Theoretical Review

The theoretical foundation of this study, as outlined by Stewart and Sambrook (2011), underscores the importance of theories in clarifying concepts and relationships, with a focus on four key frameworks: Neoclassical Growth Theory, Endogenous Growth Theory, Classical Theory of Financial Intermediation, and Financial Market Theory of Development. The Neoclassical Growth Theory, proposed by Solow and Swan (1956), emphasizes capital, labor, and exogenous technological progress as drivers of economic growth, suggesting that advancements in financial sector technology—such as those observed in Sub-Saharan Africa (SSA)—can enhance growth. However, its limitation lies in treating technology as external, overlooking endogenous contributions like financial innovation. In SSA, this theory highlights how external technological developments in financial systems, such as mobile banking, have transformed traditional trading and spurred economic growth, making it a foundational anchor for examining financial development's role.

The Endogenous Growth Theory, introduced by Paul Romer (1986), shifts the focus to internal factors like knowledge, innovation, and human capital as drivers of economic growth, directly linking financial sector advancements to increased productivity. Unlike the neoclassical model, it posits that financial development—

through innovations like M-Pesa in SSA—can endogenously boost economic output by improving resource allocation and risk management. Critics argue it oversimplifies developing economies' complexities, such as poor infrastructure and institutional weaknesses, yet its relevance to this study lies in framing financial development as an internal growth catalyst. In SSA, where financial innovations have enhanced service delivery, this theory supports the idea that well-developed financial systems facilitate economic growth by providing investment information, monitoring projects, and enabling diversification.

The Classical Theory of Financial Intermediation (Allen and Santomero, 1996) and the Financial Market Theory of Development (World Bank Group, 1999) further illuminate financial development's impact on economic growth. The former posits that financial intermediaries, such as banks, reduce market imperfections, manage risks, and channel funds to productive sectors, fostering growth—an apt lens for SSA's expanding banking sector. Critics note that globalization has reduced information asymmetry, yet intermediation persists, underscoring its evolving role. The latter theory advocates for market liberalization to attract private capital, enhancing local entrepreneurship and growth, though contested by Ajit (1997) who argued stock markets aren't essential for development. In SSA, these theories highlight how financial intermediaries and market openness can drive economic activity, aligning with the region's progress in financial access and integration, despite persistent challenges in market depth and inclusion.

B. Empirical Review

Abbas et al. (2022) conducted a study on the association between financial progress, economic development, and income inequality within lower-middle and upper-middle-income countries. Using the Autoregressive Distributed Lag (ARDL) model, the researchers evaluated the relationship between financial enhancement and economic expansion by examining data from 44 countries covering the period from 1995 to 2018. Additionally, they analyzed the relationship between financial growth and income gap using data from 42 average income countries. Financial progress was modeled as financial development while economic growth was modeled as general government final consumption expenditure growth rate. The findings indicated that financial advancement significantly contributed to economic expansion in both groups of countries over the long term. Notably, this contribution was more prominent in upper-middle-income countries. By presenting empirical evidence on the impact of financial progress on economic development and income gap in middle-income countries, this study makes a valuable contribution to the existing literature on the subject.

Nguyen and Bui (2022) investigated the linkage between financial development and economic growth in lower-middle-income countries, focusing on the role of remittances as an intervening variable. Utilizing a panel dataset of 35 countries from 2005 to 2021, the study employed the System GMM technique for analysis. Financial development was assessed through indicators such as bank efficiency, access to financial services, and financial depth. The findings indicated that remittances amplify the positive effect of financial development on economic growth by increasing financial access and enhancing investment in productive sectors. This study contributed by revealing how remittance flows can enhance the effectiveness of financial development in driving growth.

Asante et al. (2023) conducted a study to examine the impact of financial development (expressed in the form of financial development index) on GDP growth (expressed as GDP per capita) in Sub-Saharan Africa (SSA), considering the potential links between institutional quality and this relationship. To ensure a comprehensive and robust analysis in SSA, the authors utilized three institutional quality variables: rule of law, regulatory quality, and political stability. Method of Moments (GMM) approach, they analyzed data from 29 countries in SSA for the period spanning from 2000 to 2019 to estimate the relationship. The findings of the study indicated that financial expansion has a remarkable influence on GDP growth in SSA. Furthermore, the study revealed that the positive effect of financial progress on GDP growth is strengthened when the institutional variables are efficient.

Ali et al. (2023) examined the nonlinear relationship between financial development and economic growth in emerging markets, focusing on Sub-Saharan African countries. Using the Threshold Autoregressive (TAR) model, the study analyzed data from 22 countries over the period 2000 to 2022. The results indicated that financial development positively affects economic growth up to a certain threshold level, beyond which excessive financialization negatively impacts growth due to inefficiencies and misallocation of resources. This study contributes to policy discourse by emphasizing the need for balanced and well-regulated financial development to maximize its growth-enhancing effects.

C. Conceptual Framework

The conceptual framework is as presented in Figure 1. The independent variable for this study is financial development. The variation in economic growth, as measured by GDP, can be attributed to financial development, which is gauged through three indicators: broad money, domestic-credit-to-private sector, and interest rate spread. Previous research by Ibrahim and Alagidede (2017) and Abbas et al. (2022) has

documented the positive impact of financial development on economic growth, primarily through improved resource allocation.

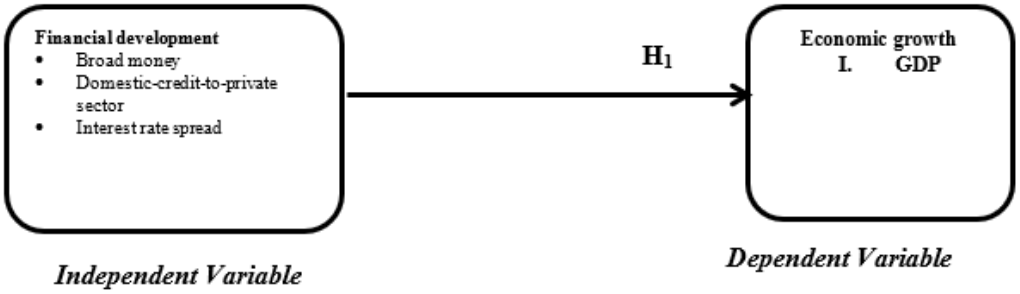

Figure 1: The Conceptual Model

III. Methodology

A. Data

This study employed secondary unbalanced panel data collected over a 20-year period from 2002 to 2021, sourced from reputable institutions such as the International Monetary Fund (IMF), World Bank, United Nations Trade and Development (UNCTAD), and central banks of Sub-Saharan African (SSA) countries. The 20-year timeframe, starting with the African Union's launch in 2002, provided sufficient data points to analyze trends and variability in financial development and economic growth across 45 SSA countries. The use of unbalanced panel data accounted for missing entries for some countries in certain years, ensuring a comprehensive yet practical dataset to explore these key variables.

Financial development data were primarily gathered from the IMF's International Financial Statistics (IFS) databank and annual reports of respective SSA countries' central banks, offering detailed economic and financial market indicators. Economic growth data, measured as real GDP per capita, were obtained from the World Bank's World Development Indicators (WDI) database, a robust source of socio-economic and development metrics. By leveraging these credible sources, the study ensured data reliability and consistency, enabling a thorough examination of the relationship between financial development and economic growth in SSA over the specified period.

B. Data Analysis

In this study, ARDL was used to estimate the long-run and short-run effects of financial development on economic growth. The ARDL model allowed the researcher to test for the existence of a long-run relationship between these variables while also accounting for the short-term dynamics and possible causal relationships between them. A multiple linear regression technique was used to model the relationship between economic growth, and the independent variables which were the three indicators of financial development. The multiple linear regression model estimated the coefficients of the independent variables, which provided information on the direction and magnitude of their effect on the dependent variable.

IV. Results And Discussion

A. Descriptive Results

The descriptive analysis, based on data from 45 Sub-Saharan African (SSA) countries over 2002–2021, provides insights into economic growth and financial development across 900 observations for most variables. Economic growth, measured as GDP growth rate, averaged 1.82% with a median of 2.10%, reflecting modest positive growth. However, the range spanned from -30.70% to 19.94%, with a standard deviation of 4.38%, indicating significant variability and diverse economic conditions across SSA.

Financial development was assessed using three indicators: broad money, domestic credit to the private sector, and interest rate spread. Broad money (% of GDP) averaged 33.88% with a median of 26.52%, ranging from 2.92% to 159.95%, and a standard deviation of 22.48%, reflecting substantial disparities in financial depth. Domestic credit to the private sector (% of GDP) had a mean of 22.76% and a median of 16.12%, with a wide range (0.002% to 142.42%) and a standard deviation of 23.66%, showing significant variation. Interest rate spread, based on 700 observations from 35 countries, averaged 9.51% with a median of 7.41%, ranging from -3.85% to 457.45%, with a standard deviation of 23.64%

Table 1: Summary of Descriptive Statistics

	N	Mean	Median	Maximum	Minimum	Std. Dev.
GDP (%)	900	1.823	2.096	19.939	-30.702	4.381
Broad money % of GDP	900	33.876	26.520	159.9491	2.917	22.482
Domestic credit to private sector % of GDP	900	22.759	16.121	142.422	0.002	23.663
Interest rate spread	700	9.514	7.414	457.45	-3.85	23.643

B. Hypothesis Testing

The objective of this study was to establish the effect of financial development on economic growth among Africa countries. The hypotheses tested were:

H_{01}: Financial development has no effect on economic growth among Africa countries

H_{01a}: Broad money has no significant effect on economic growth among Sub-Saharan Africa countries.

H_{01b}: Domestic credit to private sector has no significant effect on economic growth among Sub-Saharan Africa countries.

H_{01c}: Interest rate spread has no significant effect on economic growth among Sub-Saharan Africa countries.

The results of regression analysis are as provided in Table 2 and Table 3. Table 2 presents the results of the regression analysis examining the effect of broad money and domestic credit to the private sector on GDP as a measure of economic growth in Sub-Saharan Africa. The model utilized panel least squares regression, covering 900 observations across 20 periods and 45 cross-sectional units. The R-squared value of 0.4117 indicates that 41.17% of the variation in GDP is explained by broad money and domestic credit to the private sector, suggesting a moderate explanatory power of the model. The F-statistic (8.0426) is significant at p = 0.0003, indicating that the model as a whole is statistically significant.

The coefficient for broad money is -0.036 (p = 0.0029), indicating a statistically significant but negative effect on economic growth. This result suggests that an increase in broad money, as a percentage of GDP, is associated with a decrease in GDP growth, potentially due to inefficiencies or inflationary pressures in financial systems. In contrast, domestic credit to the private sector has a positive and highly significant coefficient of 0.2847 (p = 0.0000). This finding implies that increasing credit availability to the private sector strongly enhances economic growth, highlighting the critical role of financial intermediation in promoting productive activities. The constant term (C) is also significant (p = 0.0000), reflecting the average GDP growth when the independent variables are zero.

Table 2: Broad Money, Domestic Credit to Private Sector and Economic Growth

Dependent Variable: GDP				
Method: Panel Least Squares				
Date: 11/15/24 Time: 10:10				
Sample: 2002 2021				
Periods included: 20				
Cross-sections included: 45				
Total panel (balanced) observations: 900				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
BROAD_MONEY___OF_GDP	-0.036037	0.012059	-2.988512	0.0029
DOMESTIC_CREDIT_TO_PRIVA	0.284660	0.023506	12.11014	0.0000
C	3.131987	0.293982	10.65368	0.0000
R-squared	0.411675	Mean dependent var		2.156740
Adjusted R-squared	0.390259	S.D. dependent var		4.972755
S.E. of regression	4.934251	Akaike info criterion		6.033607
Sum squared resid	21839.11	Schwarz criterion		6.049615
Log likelihood	-2712.123	Hannan-Quinn criter.		6.039722
F-statistic	8.042635	Durbin-Watson stat		1.368663
Prob(F-statistic)	0.000345			

Table 3 provides the regression analysis results for the effect of interest rate spread on GDP growth, based on a panel dataset comprising 700 observations over 20 periods and 35 cross-sections. The R-squared value of 0.1167 indicates that 11.67% of the variation in GDP is explained by the interest rate spread, reflecting a lower explanatory power compared to the model in Table 2. However, the F-statistic (8.2456) is significant at p = 0.0042, indicating that the model is statistically significant.

In conclusion, the findings indicate that **H01:** Financial development has no effect on economic growth among African countries is rejected, as the overall model shows significant results. The sub-hypotheses reveal mixed outcomes. **H01a:** Broad money has no significant effect on economic growth among Sub-Saharan

Africa countries is rejected due to the significant negative relationship (p = 0.0029). Similarly, **H01b:** Domestic credit to the private sector has no significant effect on economic growth among Sub-Saharan Africa countries is rejected, as it has a significant positive relationship with GDP (p = 0.0000). "Lastly, **H01c:** Interest rate spread has no significant effect on economic growth among Sub-Saharan Africa countries is also rejected, given its significant negative effect (p = 0.0042). These results demonstrate that financial development components influence economic growth in varied ways, underscoring the need for tailored financial policies in the region.

Table 3: Interest Rate Spread and Economic Growth

Dependent Variable: GDP				
Method: Panel Least Squares				
Date: 11/01/24 Time: 09:55				
Sample: 2002 2021				
Periods included: 20				
Cross-sections included: 35				
Total panel (balanced) observations: 700				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
INTEREST_RATE_SPREAD	-0.020021	0.006972	-2.871521	0.0042
C	2.014218	0.177584	11.34234	0.0000
R-squared	0.11675	Mean dependent var		1.823738
Adjusted R-squared	0.10259	S.D. dependent var		4.380867
S.E. of regression	4.358336	Akaike info criterion		5.784911
Sum squared resid	13258.58	Schwarz criterion		5.797914
Log likelihood	-2022.719	Hannan-Quinn criter.		5.789937
F-statistic	8.245634	Durbin-Watson stat		1.541941
Prob(F-statistic)	0.004209			

V. Conclusion And Recommendations

This study concludes that financial development has a significant but varied impact on economic growth among Sub-Saharan African countries. While domestic credit to the private sector positively influences economic growth, broad money has a negative impact, suggesting inefficiencies in resource allocation within financial systems. The negative effect of interest rate spread further highlights the challenges posed by high borrowing costs, which stifle investment and limit economic growth. These findings point to the need for policies that improve financial intermediation and reduce borrowing costs to unlock the potential of financial development as a driver of growth.

Policymakers should focus on improving the efficiency of financial systems to enhance the positive impact of financial development on economic growth. Financial intermediaries need to prioritize allocating resources to productive sectors, especially through increased access to credit for businesses and individuals. Measures such as strengthening credit appraisal processes, reducing non-performing loans, and improving financial literacy among borrowers will foster more effective financial intermediation. Additionally, governments should work to narrow interest rate spreads by promoting competition among financial institutions and implementing regulatory measures to lower borrowing costs.

VI. Suggestions For Further Research

This study opens avenues for further research to deepen the understanding of financial development and economic growth dynamics. Future research could explore the role of institutional quality and governance in mediating these relationships. While this study focused on quantitative indicators such as broad money and domestic credit, institutional factors such as regulatory frameworks, corruption levels, and political stability could provide additional insights into how financial development and government policies impact economic growth in Sub-Saharan Africa.

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